2015 Abstracts

32nd Annual Meeting of the American Society for Metabolic and Bariatric Surgery

Presented at ObesityWeek℠ 2015

November 2-7, 2015

Los Angeles Convention Center

Los Angeles, California

ASMBS American Society for Metabolic and Bariatric Surgery

About the American Society for Metabolic and Bariatric Surgery

The ASMBS is the largest national society for this specialty. The vision of the Society is to improve public health and well-being by lessening the burden of the disease of obesity and related diseases throughout the world.

Founded in 1983, foremost American surgeons have formed the society's leadership and have established an excellent organization with educational and support programs for surgeons and integrated health professionals. The purpose of the society is to advance the art and science of metabolic and bariatric surgery by continually improving the quality and safety of care and treatment of people with obesity and related diseases by:

- Advancing the science of metabolic and bariatric surgery and increase public understanding of obesity.
- Fostering collaboration between health professionals on obesity and related diseases.
- Providing leadership in metabolic and bariatric surgery the multidisciplinary management of obesity.
- Advocating for health care policy that ensures patient access to prevention and treatment of obesity.
- Serving the educational needs of our members, the public and other professionals.

About ObesityWeek[SM]

ObesityWeek[sm] is a unique, international event focused on the basic science, clinical application, surgical intervention and prevention of obesity. Co-locating both TOS and ASMBS annual meetings brings together world-renowned experts in obesity to share innovation and breakthroughs in science unmatched around the globe. Attendees will enjoy the diverse educational opportunities, networking events, and scientific synergies created through the collaboration of these leading obesity organizations.

2015 ASMBS Program Committee

The Program Committee is responsible for developing and arranging all of the annual educational events for the ASMBS with the annual conference being the primary educational event. The committee identifies needs, professional gaps, and barriers; reviews and grades submitted abstracts; selects relevant topics and educational design; secures guest speakers; contributes to the development of overall conference programming.

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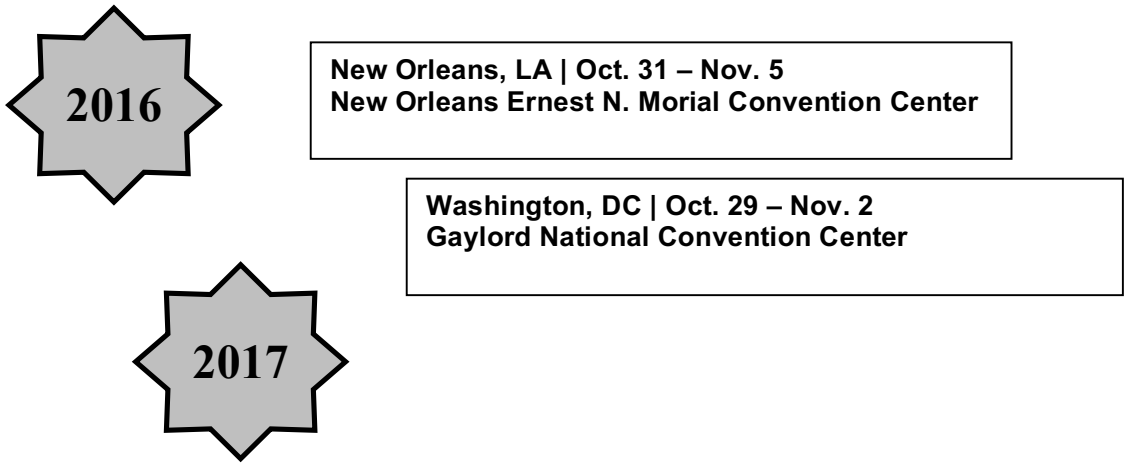
Future Obesity Week Event Dates



Educational Overview and Information

Purpose

The American Society for Metabolic and Bariatric Surgery is committed to providing tools for physicians and integrated health professionals as they participate in the Maintenance of Certification program, a lifelong learning process which includes areas of self-assessment and quality improvement of practice performance by physician specialists. Presentations of papers submitted from the most current research, as well as invited lecturers, promote the exchange of information and experiences between those practiced in bariatric surgery and newcomers to the field. The Scientific Session is offered as a culmination to the selection of courses presented in various learning formats designed to meet the needs of the learner. The primary goal is continual improvement in the competence and performance of those in the field of bariatric surgery which will result in improved patient outcomes.

Target Audience

The conference is designed for all clinical and academic surgeons and support staff, including any health professional involved in the care of the patient with obesity, who wish to increase their knowledge of the surgical and perioperative management of the patient with obesity. The conference is also designed for those seeking practical pearls and hands-on experience to modify their practice and thereby achieve more favorable patient outcomes.

Educational Objectives

Upon completion of this conference, physicians and support staff should be able to:

- Define, discuss and solve specific challenges in the treatment of patients who suffer from obesity and obesity-related and metabolic diseases and conditions
- Describe the development and use of new techniques to achieve weight loss by surgery in patients with obesity
- Examine the broad scope of patient care services
- Identify the specific needs of bariatric patients and assist in targeting their care in a coordinated multidisciplinary team effort

Accreditation Statements

The American Society for Metabolic and Bariatric Surgery (AMSBS) is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

The American Society for Metabolic and Bariatric Surgery designates this educational activity for a maximum of **36.75 AMA PRA Category 1 Credit(s)™.**

Physicians should only claim credit commensurate with the extent of their participation in the activity.

Nursing Credits (**up to 36.75 CE contact hours**) are provided by Taylor College, Los Angeles, California (possibly may not be accepted for national certification). Provider is approved by the California Board of Registered Nursing, provider number CEP-3285, for the stated number of contact hours.

APA and NASW credits for the ASMBS Masters in Behavioral Health Course are pending. This course is co-sponsored by Amedco and the American Society for Metabolic and Bariatric Surgery (ASMBS).

Educational Disclaimer

The primary purpose of this conference is education. Information presented, as well as publications, technologies, products, and/or services discussed, are intended to inform you about the knowledge, techniques and experiences of bariatric surgeons who are willing to share such information with colleagues. A diversity of professional opinions exists in bariatric surgery, and the views of the conference's faculty are offered solely for educational purposes. Faculty's views neither represent those of the ASMBS nor constitute endorsement by the Society. The ASMBS declaims any and all liability or damages to any

individual attending this conference and for all claims, which may result from the use of information, publications, technologies, products, and/or services of the meeting. Faculty disclosure statements have been requested from the speakers and will be presented in the conference materials.

ASMBS Abstracts 2015 Schedule of Oral Presentations

Paper Sessions

* Presentation under consideration for the John Halverson Young Investigator Award

Wednesday, November 4, 2015

Paper Session I: TOP PAPERS AND VIDEOS 10:15am–12:00pm

10:20am **A101 – PRIMARY CARE PHYSICIAN APPROACHES TO SEVERE OBESITY TREATMENT AND BARIATRIC SURGERY: A QUALITATIVE STUDY**
Main Presenter: Luke Funk, MD, MPH
Co-Authors: Sally Jolles, MA; Caprice C. Greenberg, MD, MPH; Corrine I. Voils, PhD

10:40am **A102 – PROXIMAL VERSUS DISTAL GASTRIC BYPASS IN PATIENTS WITH BODY MASS INDEX 50 TO 60: A DOUBLE-BLIND, RANDOMIZED CLINICAL TRIAL**
Main Presenter: Hilde Risstad, MD
Co-Authors: Marius Svanevik, MD; Jon A. Kristinsson, MD, PhD; Jøran Hjelmesæth, MD, PhD; Erlend T. Aasheim, MD, PhD, MPhil; Dag Hofsø, PhD; Torgeir T. Søvik, MD; Tor-Ivar Karlsen, PhD; Morten W. Fagerland, PhD; Rune Sandbu, MD PhD; Tom Mala

11:00am **A103 – SINGLE CENTER EXPERIENCE WITH LAPAROSCOPIC ADJUSTABLE GASTRIC BANDING (LAGB): BANDING LIFESPAN AND WEIGHT LOSS AT TEN YEARS OF FOLLOW-UP***
Main Presenter: Sergio Carandina, MD
Co-Authors: Andrea Lazzati, MD; Manuela Bossi, MD; Claude Polliand, MD; Daniel Azoulay, MD; Christophe Barrat, MD, PhD

11:20am **A104 – PREDICTORS OF WEIGHT REGAIN IN PATIENTS WHO UNDERWENT ROUX-EN Y GASTRIC BYPASS SURGERY (RYGB)***
Main Presenter: Prapimporn C PC. Shantavasinkul, MD
Co-Authors: Philip Omotosho, M.D.; Leonor Corsino, M.D.; Dana Portenier, MD; Alfonso Torquati, MD

11:40am **A156 – VIDEO: OUT OF SIGHT, BUT NOT OUT OF MIND: EXCLUDED STOMACH PATHOLOGY AFTER ROUX-EN-Y GASTRIC BYPASS**
Main Presenter: Andrew D. Van Osdol, MD
Co-Authors: Matthew T. Baker, MD; Shanu N. Kothari, MD, FACS

Paper Session II: TOP PAPERS AND VIDEOS, cont. 1:30pm -3:30pm

1:30pm **A105 – INTRAGASTRIC BALLOON: A BRAZILIAN MULTICENTRIC STUDY OF 3545 CASES**
Main Presenter: Bruno Dr. Sander, MD
Co-Authors: Manoel Galvao Neto, MD; Ricardo Fittipaldi-Fernandez, MD; Giorgio Baretta, PhD; Jimi Scarparo, MD; Cristina Diestel, PhD

1:50pm **A106 – BARIATRIC SURGERY REDUCES NATIONAL HEALTHCARE UTILIZATION IN THE LONG-TERM**
Main Presenter: John M. Morton, MD
Co-Authors: Stacy A. Brethauer, MD; Jaime Ponce, MD; Raul J. Rosenthal, MD; Ninh T. Nguyen, MD

2:10pm **A107 – SHORT-TERM OUTCOMES FOLLOWING CONVERSION OF ADJUSTABLE GASTRIC BANDING**
Main Presenter: Jonathan Finks, MD
Co-Authors: Steven C. Poplawski, MD; Paul R. Kemmeter, MD, FACS; Arthur M. Carlin, MD; Matthew J. Weiner, MD; Oliver A. Varban, MD, FACS; Amir A. Ghaferi, MD; Ruth Cassidy, MS

2:30pm **A157 – VIDEO: AN ODYSSEY OF COMPLICATIONS FROM BAND, TO SLEEVE, TO BYPASS; DEFINITIVE LAPAROSCOPIC COMPLETION GASTRECTOMY WITH DISTAL ESOPHAGECTOMY AND ESOPHAGOJEJUNOSTOMY FOR PERSISTENT LEAK**
Main Presenter: Hideo Takahashi, MD
Co-Authors: A. Daniel Guerron MD; John Rodriguez MD; Matthew Kroh MD

2:50pm **A109 – FACTORS RELATED TO IMPROVEMENT IN JOINT PAIN AND PHYSICAL FUNCTION FOLLOWING BARIATRIC SURGERY**
Main Presenter: Wendy C. King, PhD
Co-Authors: Jia-Yuh Chen, MS; Steven H. Belle, PhD MScHyg; Anita P. Courcoulas, MD MPH; Gregory F. Dakin, MD; Katherine Elder, PhD; David R. Flum, MD, MPH, FACS; William F. Gourash, MSN CRNP; Marcelo W. Hinojosa, MD; James E. Mitchell, MD; Bruce M. Wolfe, MD; Susan Z. Yanovski, MD

3:10pm **A110 – COVERING BARIATRIC SURGERY HAS MINIMAL EFFECT ON INSURANCE PREMIUM COSTS WITHIN THE AFFORDABLE CARE ACT**
Main Presenter: Wayne J. English, MD
Co-Authors: Brandon Williams, MD; John D. Scott, MD

Paper Session III: COMPARATIVE/RESEARCH 4:15pm-6:00pm

4:15pm **A115 – COMPARATIVE STUDY OF EPIGENETICS IN ADIPOSE TISSUE AND LIVER FROM DIABETIC AND NON-DIABETIC OBESE PATIENTS: A DIFFERENTIAL DNA METHYLATION ANALYSIS IN A MEXICAN MESTIZO POPULATION.**
Main Presenter: Carlos Zerrweck, MD
Co-Authors: Francisco Barajas, Candidate PhD; Federico Centeno, PhD; Francisco Campos, MD; Elisa Sepúlveda, MD; Hernán Maydón, MD; Gabriela Maldonado, MD; Angélica Martínez, PHD; Lorena Orozco, MD

4:30pm **A111 – RECENT NATIONAL TRENDS IN THE SURGICAL TREATMENT OF OBESITY: SLEEVE GASTRECTOMY DOMINATES***
Main Presenter: Zhamak Khorgami, MD
Co-Authors: Amin Andalib; Ricard Corcelles, MD, PhD; Ali Aminian, MD; Stacy A. Brethauer, MD; Philip R. Schauer, MD

4:45pm **A112 – COMPARATIVE RESOLUTION OF COMORBID CONDITIONS AFTER DIFFERENT BARIATRIC OPERATIONS. A PROPENSITY MATCHED STUDY OF PATIENTS UNDERGOING BARIATRIC SURGERY IN THE UNITED STATES**
Main Presenter: Ranjan Sudan, MD
Co-Authors: Ninh T. Nguyen, MD; Amber Wilk, PhD; John M. Morton, MD; Matthew Maciejewski, PhD

5:00pm **A113 – THE IMPACT OF CARE COACHING ON HOSPITAL LENGTH OF STAY, READMISSION RATES AND OVERALL PATIENT SATISFACTION POST-BARIATRIC SURGERY.**
Main Presenter: Anahita Jalilvand, MD
Co-Authors: Sabrena F. Noria, MD, PhD; Bradley Needleman, MD; Dean J. Mikami, MD; Kristina Layton, BSN RN-BC; Melissa Hornor, MD; Andrew Suzo, BS; Mahmoud Abdel-Rasoul, MS, MPH; Luke Macadam, BS CSE

5:15pm **A114 – SURGICAL SKILL AND BARIATRIC SURGERY: DOES SKILL IN ONE PROCEDURE PREDICT OUTCOMES FOR ANOTHER?**
Main Presenter: Oliver A. Varban, MD, FACS
Co-Authors: Justin B. Dimick, MD, MPH, FACS; Arthur M. Carlin, MD; Jyothi Thumma, R, MPH; Amir Ghaferi, MD, MS, FACS; Matthew J. Weiner, MD; Abdelkader Hawasli, MD

5:30pm **A116 – DIET-INDUCED THERMOGENESIS IN PATIENTS WITH POSTOPERATIVE RYGBP WEIGHT REGAIN**
Main Presenter: Silvia L. Faria, MSc, RD
Co-Authors: Orlando P. Faria, MD; Mariane M. Cardeal, MD; Marina K. Ito, PhD

5:45pm **A117 – WEIGHT REGAIN IN ROUX-EN-Y GASTRIC BYPASS LATE POSTOPERATIVE – GUT HORMONES ROLE**
Main Presenter: Marco Aurelio Santo, MD
Co-Authors: Henrique DG. Joaquim, MD; Daniel Riccioppo; Mitsunori Matsuda; Paulo Engler; Flavio Kawamoto, MD; Allan M. Garms; Roberto Cleva, MD; Leila Antonangelo; Lia Marçal; Ivan Cecconello

Paper Session IV: OUTCOMES 4:15pm–6:00pm

4:15pm **A118 – DO FINDINGS ON ROUTINE PREOPERATIVE EGD ALTER OUR MANAGEMENT OF BARIATRIC SURGERY PATIENTS?**
Main Presenter: Patrick Fei, MD
Co-Authors: John Phu, MD; Megumi Asai, MD; Gintaras Antanavicius, MD, FACS

4:30pm **A119 – EFFECT OF PREOPERATIVE WEIGHT LOSS ON OUTCOMES WITH BARIATRIC SURGERY**
Main Presenter: Jonathan Finks, MD
Co-Authors: Arthur M. Carlin, MD; Matthew J. Weiner, MD; Jon L. Schram, MD; Paul R. Kemmeter, MD, FACS; Oliver A. Varban, MD, FACS; Ruth Cassidy, MS

4:45pm **A120 – EARLY FEEDING POST BARIATRIC SURGERY REDUCES LENGTH OF STAY**
Main Presenter: Nabil Tariq, MD
Co-Authors: Beverly Shirkey, PhD; Linda W. Moore, MS, RDN; Richard Ogunti, MBBS,MPH; Mamta Puppala, MS; Stephen Wong, Ph.D., P.E.; Patricia Wilson, LVN; Vadim Sherman, MD

5:00pm **A121 – THE EFFECT OF PREGNANCY BEFORE OR AFTER BARIATRIC SURGERY ON WEIGHT LOSS**
Main Presenter: Jayne Lieb, MD
Main Presenter: Dvir Froylich
Co-Authors: Ricard Corcelles, MD, PhD; Chris Daigle, MD; John P. Kirwan, PhD; Stacy A. Brethauer, MD; Philip R. Schauer, MD

5:15pm **A123 – THE BENEFIT AND COST EFFECTIVENESS OF LAPAROSCOPIC GASTRIC BYPASS STEMS LARGELY FROM RESOLUTION OF METABOLIC DISEASE, NOT JUST WEIGHT LOSS***
Main Presenter: Jennifer Kaplan, MD
Co-Authors: James G Kahn, M.D, M.P.H.; Stanley Rogers, M.D.; Matthew Lin, M.D.; Samuel C. Schecter, MBBS; Jonathan T. Carter, MD

5:30pm **A124 – BLEEDING RATES ARE INCREASED WITH PREOPERATIVE LOVENOX ADMINISTRATION IN PATIENTS UNDERGOING SLEEVE GASTRECTOMY**
Main Presenter: Tallal Zeni, MD
Sheila K. Thompson, RN, BSN; Jacob E. Roberts, DO

5:45pm **A122 - TASTE AND OLFACTORY CHANGES FOLLOWING LAPAROSCOPIC GASTRIC BYPASS AND SLEEVE GASTRECTOMY**
Main Presenter: Carlos Zerrweck, MD
Co-Authors: Luis Zurita, MD; Guillermo Alvarez, MS; Hernán Maydón, MD; Elisa Sepúlveda, MD; Francisco Campos, MD; Lizbeth Guilbert, MD; Omar Pineda, MD; Omar Espinosa, MD; Veronica Pratti, Lic

Thursday, November 5, 2015

Paper Session V: METABOLIC AND MALABSORPTIVE 8:00am–9:45am

8:00am **A125 – LONG-TERM FOLLOW-UP OF PILOT RANDOMIZED TRIAL COMPARING BARIATRIC SURGERY VS. INTENSIVE MEDICAL WEIGHT MANAGEMENT ON DIABETES REMISSION IN PATIENTS WITH TYPE 2 DIABETES AND BMI 30-35; THE ROLE OF SRAGE DIABETES BIOMARKER AS PREDICTOR OF SUCCESS***
Main Presenter: Daniel Horwitz, B.S.
Co-Authors: Mimi Chung, BS; Sheetal Sheth, MA; John K. Saunders, MD; Aku Ude Welcome, MD; Ann Marie Schmidt, MD; Van Dunn, MD; H Leon Pachter, MD; Manish S. Parikh, MD

8:15am **A126 – A NATIONWIDE SAFETY ANALYSIS OF BARIATRIC SURGERY IN NONMORBIDLY OBESE PATIENTS WITH TYPE 2 DIABETES***
Main Presenter: Ali Aminian, MD
Co-Authors: John P. Kirwan, PhD; Bartolome Burguera, MD, PhD; Stacy A. Brethauer, MD; Philip R. Schauer, MD

8:30am **A127 – IMPACT OF METABOLIC SURGERY FOR PATIENTS WITH BMI LESS THAN 35 KG/M2 ON HEALTH-RELATED AND EATING QUALITY OF LIFE**
Main Presenter: Yosuke Seki, MD, PhD
Co-Author: Kazunori Kasama, MD

8:45am **A128 – LONG-TERM (>10 years) OUTCOMES OF THE LAPAROSCOPIC BILIOPANCREATIC DIVERSION WITH DUODENAL SWITCH.**
Main Presenter: Jacques M. Himpens, MD

9:00am **A129 – THE IMPACT OF THE BILIOPANCREATIC DIVERSION WITH THE DUODENAL SWITCH (SWITCH) OVER 9 YEARS OF FOLLOW-UP.**
Main Presenter: Mehyar H. Torghabeh, MD
Co-Authors: Gladys W. Strain, PhD, RD, FTOS; Faith Ebel, MPH, RD, MS; Gregory F. Dakin, MD;Michel Gagner, MD; Daniel Connelly, BS, MMS Candidate; Alfons Pomp, MD

9:15am **A130 – LONG-TERM OUTCOMES AFTER BILIOPANCREATIC DIVERSION WITH AND WITHOUT DUODENAL SWITCH: 2, 5, AND 10-YEAR DATA**
Main Presenter: Monica Sethi
Co-Authors: Edward Chau, MD; Yan Jiang, BS; Melissa Magrath, BA; George A. Fielding, MD; Christine J. Ren-Fielding, MD

9:30am **A131 – A MATCHED COHORT COMPARISON OF LAPAROSCOPIC BILIOPANCREATIC DIVERSION WITH DUODENAL SWITCH AND ROUX-EN-Y GASTRIC BYPASS.**
Main Presenter: Marko Martinovski, MD
Co-Authors: Paul R. Kemmeter, MD, FACS; Nancy Birkmeyer, PhD; Arthur M. Carlin, MD; Jonathan F. Finks, MD

Paper Session VI: LATE-BREAKING NEWS AND NOVEL PROCEDURES 1:30pm-3:00pm

1:30pm **A132 – ENDOSCOPIC GASTRO-JEJUNOSTOMY OUTLET REDUCTION (EGOR) AFTER ROUX-EN-Y GASTRIC BYPASS: IS IT WORTH IT?**
Main Presenter: Dan E. Azagury, MD
Co-Authors: Tara Mokhtari, BS; Pooja Pradhan, BS; Nairi Strauch, BA; Sophia Koontz, BA; John M. Morton, MD

1:45pm **A133 – MANAGEMENT OF GASTRIC LEAKS FOLLOWING SLEEVE GASTRECTOMY WITH ENDOLUMINAL VACUUM (E-VAC) THERAPY**
Main Presenter: Steven Leeds, MD
Co-Author: James S. Burdick, MD

2:00pm **A134 – LONG-TERM SUCCESS AND FAILURE WITH SLEEVE GASTRECTOMY IS PREDICTABLE BY THREE MONTHS: A MULTIVARIATE MODEL USING SIMPLE OFFICE MARKERS**
Main Presenter: Austin Cottam, HS
Co-Authors: Daniel R. Cottam, MD; Amit AS. Surve, MD; Hinali M. Zaveri, MD; Christina Summerhays, Student; Samuel Cottam, CNA; Josiah Billing, BS

2:15pm **A135 – OBENDO 2 AND 3 STUDY ON HYALURONIC ACID INJECTION AT THE GE JUNCTION: A CLOSER LOOK AT THE TRAJECTORY.**
Main Presenter: Jerome Dargent, MD

2:30pm **A136 – A NOVEL PROCEDURE FOR THE TREATMENT OF GASTRIC STRICTURE FOLLOWING SLEEVE GASTRECTOMY**
Main Presenter: Kevin D. Helling, MD
Co-Author: Scott A. Shikora, MD

2:45pm **A137 – THE STOMACH, INTESTINAL AND PYLORUS-SPARING (SIPS) PROCEDURE: A SLINGLE-CENTER ANALYSIS OF OUR FIRST 100 PATIENTS**
Main Presenter: Paul E. Enochs, MD

Paper Session VII: COMPLICATIONS AND REVISIONS 3:45pm–5:15pm

3:45pm **A138 – VENOUS THROMBOEMBOLISM OUTCOMES IN BARIATRIC SURGERY PATIENTS: THE ROLE OF OPERATIVE TIME**
Main Presenter: Claudia B. Weeks, BS
Co-Authors: Gezzer Ortega, MD, MPH; Tran Daniel, MD; Terrence Fullum, MD; Amal L. Khoury, MD, MPH; Navin Changoor, MD; Rafael Acosta-Diaz, MD; Fatimah Fahimuddin, BS

4:00pm **A139 – WHO SHOULD GET EXTENDED THROMBOPROPHYLAXIS AFTER BARIATRIC SURGERY? A RISK ASSESSMENT TOOL TO GUIDE INDICATIONS FOR POST-DISCHARGE PHARMACOPROPHYLAXIS**
Main Presenter: Ali Aminian, MD
Co-Authors: Amin Andalib, MD, MS; Zhamak Khorgami, MD; Derrick C. Cetin, DO; Bartolome Burguera, MD, PhD; John Bartholomew, R, MD; Stacy A. Brethauer, MD; Philip R. Schauer, MD

4:15pm **A140 – ADJUSTABLE BANDING AROUND PRIOR GASTRIC BYPASS: LONG-TERM CONTINUED WEIGHT-LOSS**
Main Presenter: Hans J. Schmidt, MD
Co-Authors: Edmund Lee, BA; Richard Novack, Jr., MD; Sebastian R. Eid, MD; Amit Trivedi, MD; Douglas R. Ewing, MD

4:30pm **A141 – BARIATRIC SURGERY OUTCOMES IN PATIENTS WITH PRIOR FUNDOPLICATION**
Main Presenter: Kevin R. Krause, MD
Co-Authors: Jonathan Finks, MD; Amanda Stricklen, RN, MS; Rachel Ross, RN, MS; Paulette Hoerauf, RN, MBA; Arthur Carlin, MD; Amir A. Ghaferi, MD

4:45pm **A142 – REVISIONAL SURGERY FOLLOWING LAPAROSCOPIC GASTRIC PLICATION**
Main Presenter: Jose G. Rodriguez, MD
Co-Authors: Carlos Zerrweck, MD; Elmo R. Aramburo, MD; Rafael Vizcarra, Sr., MD; Jose Luis L. Rodriguez, MD, MBA; Andrea Solórzano, Bachelor

5:00pm **A143 – ENDOSCOPIC STENT MANAGEMENT OF POSTOPERATIVE ANASTOMOTIC LEAKS AND STRICTURES AFTER FOREGUT SURGERY**
Main Presenter: Julietta Chang, MD
Co-Authors: Gautam Sharma, MD; Mena Boules, MD; Ricardo Young, MD; Stacy A. Brethauer, MD; John Rodriguez, MD; Matthew D. Kroh, MD

Paper Session VIII: Emerging Technologies 3:45pm–5:15pm

3:45pm **A144 – ENDOLUMINAL THERAPY FOR THE TREATMENT OF OBESITY (INTRAGASTRIC BALLOON) BRAZILIAN MULTICENTRIC STUDY GROUP**
Main Presenter: Jose Afonso Sallet, MD
Co-Authors: Joao B. Marchesini, MD; Paulo C. Sallet, MD, PhD; Jélis A. Pimentel, MD

4:00pm **A145 – CHARACTERIZATION AND MANAGEMENT OF GASTROINTESTINAL ACCOMMODATIVE SYMPTOMS ASSOCIATED WITH TREATMENT WITH A DUAL INTRAGASTRIC BALLOON FOR OBESITY**
Main Presenter: Jaime Ponce, MD
Co-Authors: George E. Woodman, MD; James Swain, MD; Erik Wilson, MD; Eric S. Bour, MD; Sayeed Ikramuddin, MD; Wayne J. English, MD; Steven Edmundowicz, MD; Brad E. Snyder, MD; Flavia C. Soto, MD; Shelby A. Sullivan, MD; John W. Lehmann, MD, MPH

4:15pm **A146 – THE FIRST PROCEDURELESS GASTRIC BALLOON: A PROSPECTIVE STUDY EVALUATING SAFETY, WEIGHT LOSS, METABOLIC PARAMETERS, AND QUALITY OF LIFE**
Main Presenter: Evzen Machytka, MD, PhD
Co-Authors: Ram Chuttani, MD; Martina Bojkova, MD; Tomas Kupka, MD; Marek Buzga, MSc., Ph.D.; Kathy Stecco, MD; Samuel Levy, MD; Shantanu Gaur, MD

4:30pm **A147 – ENDOSCOPIC REVISION WITH ARGON PLASMA COAGULATION FOR FAILED ROUX-AND-Y GASTRIC BYPASS (RYGB: FIRST LARGE SERIES**
Main Presenter: Bruno Dr. Sander, MD
Co-Authors: Manoel Galvao Neto, MD; Giorgio Baretta, PhD; João Schemberk Jr, MD; Eduardo Usuy, Jr., MD; Ricardo Fittipaldi-Fernandez, MD

4:45pm **A148 – A TWO AND A HALF YEAR FOLLOW UP ON A VERTICAL GASTRIC CLAMP FOR WEIGHT LOSS**
Main Presenter: Moises Jacobs, MD
Co-Authors: Natan Zundel, MD; Gustavo Plasencia, MD; Prospero E. Rodriguez Pumarol, MD; Eddie Gomez, MD

5:00pm **A149 – SUSTAINED WEIGHT LOSS AND SAFETY AT TWO YEARS WITH VAGAL NERVE BLOCK IN THE RECHARGE TRIAL**
Main Presenter: Sajani N. Shah, MD
Co-Authors: Sayeed Ikramuddin, MD; Bruce M. Wolfe, MD; Katherine S. Tweden, PhD; Charles J. Billington, MD; Scott A. Shikora, MD

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Friday, November 6, 2015

Paper Session IX: Primary Procedures 1:30pm–3:00pm

1:30pm **A150 – EMOTIONAL AND REWARD CENTER BRAIN ACTIVATION IN SUCCESSFUL LAPAROSCOPIC ADJUSTABLE GASTRIC BAND (LAGB) PATIENTS: A DOUBLE-BLIND SHAM/DEFLATION STUDY**
Main Presenter: Pavlos K. Papasavas, MD
Co-Authors: Katherine Gershfeld; Gregory A. Book, MS; Andrea M. Stone, BS; Sally N. Strange, PhD, RN, CBN; Janet Ng, PhD; Darren S. Tishler, MD; Godfrey Pearlson, MD

1:45pm **A151 – AN UNINTENDED CONSEQUENCE OF SLEEVE GASTRECTOMY: PORTOMESENTERIC VENOUS THROMBOSIS**
Main Presenter: Arthur M. Carlin, MD
Co-Authors: Jonathan F. Finks, MD; Nancy J. Birkmeyer, PhD; Oliver A. Varban, MD, FACS; Paul R. Kemmeter, MD, FACS; Amanda Stricklen, MS, RN

2:00pm **A152 – LAPAROSCOPIC VERTICAL SLEEVE GASTRECTOMY CAN BE PERFORMED AS AN OUTPATIENT PROCEDURE WITH A LOW 30 DAY READMISSION RATE (AN UPDATE OF A PREVIOUSLY SUBMITTED ABSTRACT)**
Main Presenter: Thomas W. Clark, MD, MS

2:15pm **A153 – ROUX-EN-Y GASTRIC BYPASS 10 YEAR FOLLOW-UP: THE LOST POPULATION***
Main Presenter: James H. Mehaffey, MD
Co-Authors: Florence E. Turrentine, PhD, RN; Michael S. Miller, BA; Bruce Schirmer, MD; Peter T. Hallowell, MD

2:30pm **A154 – CONCURRENT VENTRAL HERNIA REPAIR IN PATIENTS UNDERGOING LAPAROSCOPIC GASTRIC BYPASS AND SLEEVE GASTRECTOMY: A CASE-MATCHED STUDY UTILIZING THE NATIONAL SURGICAL QUALITY IMPROVEMENT PROGRAM (NSQIP) DATABASE**
Main Presenter: Zhamak Khorgami, MD
Co-Authors: Amin Andalib; Ricard R. Corcelles, MD PhD; Ali Aminian, MD; Stacy A. Brethauer; Philip R. Schauer, MD

2:45pm **A155 – GASTROESOPHAGEAL MOTILITY AND REFLUX FOLLOWING LAPAROSCOPIC SLEEVE GASTRECTOMY: INTERMEDIATE DATA**
Main Presenter: Caroline Sheppard, BSc
Co-Authors: Daniel C. Sadowski, MD, FRCPC; Christopher J. de Gara, MB, MS; Jonathan T. Abele, MD, FRCPC; Shahzeer Karmali, MD, FRCSC, FACS; Daniel W. Birch, MSc MD

Video Sessions
Thursday, November 4, 2015

Video Session A **8:00am-9:45am**

8:05am **A158 – LAPAROSCOPIC ROUX EN Y GASTRIC BYPASS REVERSAL**
Main Presenter: Maher El Chaar, MD, FACS, FASMBS

8:15am **A159 – A SWEDISH LAPAROSCOPIC DUODENAL SWITCH - THE SOFY-PROCEDURE**
Main Presenter: Stephan S. Axer, MD
Co-Authors: Leif Hoffmann, MD

8:25am **A160 –A SLEEVE GASTRECTOMY BLAST: HOW LONG SHOULD THE BARIATRIC PATIENT FAST?**
Main Presenter: Tamer N. Abdelbaki, MD, MRCS
Co-Authors: Mohamed Bekheit, MD; Khaled Katri, MD; Wael Abdel-Salam, MD; El-Said El-Kayal, MD

8:35am **A161 – RARE COMPLICATION POST SLEEVE GASTRECTOMY: ACUTE IRREDUCIBLE PARAESOPHAGEAL HERNIA**
Main Presenter: Johnny Haddad
Co-Author: Osamah Al Sanea, MD

8:45am **A162 – EMERGENT LAPAROSCOPIC RECURRENT PARAESOPHAGEAL HERNIA REPAIR AFTER A ROUX-EN-Y GASTRIC BYPASS**
Main Presenter: Piotr Krecioch, MD
Co-Authors: Thomas Shin, MD; Jon D. Gabrielsen, MD; William Strodel, III, MD; Anthony T. Petrick, MD

8:55am **A163 – ROBOTIC SLEEVE GASTRECTOMY, HIATAL HERNIA REPAIR AND DOR FUNDOPLICATION IN PATIENT WITH SYMPTOMATIC GERD**
Main Presenter: Rena Moon, MD
Co-Authors: Andre F. Teixeira, MD; Muhammad A. Jawad, MD

9:05am **A164 – UNDO OF GASTRIC PLICATION WITH CONVERSION TO SLEEVE GASTRECTOMY**
Main Presenter: Raul J. Rosenthal, MD
Co-Authors: Dip Fernando, MD; David Nguyen, MD; Alex Ordonez, MD; Emanuele Lo Menzo, MD PhD; Samuel Szomstein, MD FACS FASMB

9:15am **A165 – REVISIONAL SADI FOR WEIGHT REGAIN IN SLEEVE GASTRECTOMY**
Main Presenter: David Williams, MD
Co-Authors: Bradley F. Schwack, MD; Christine J. Ren-Fielding, MD; George A. Fielding, MD; Marina S. Kurian, MD

9:25am **A166 – ENDOLUMINAL CLOSURE OF GASTRO-GASTRIC FISTULA**
Main Presenter: Esther Wu, MD
Co-Authors: Renzo Garberoglio, MD; Jan-Holly Nicolas, MD; Kamran Samakar, MD; Marcos Michelotti, MD; Keith R. Scharf, DO FACS

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Friday, November 6, 2015

Video Session B **3:45pm–5:15pm**

3:45pm **A167 – ENDOSCOPIC MANAGEMENT OF EROSION AFTER BANDED BARIATRIC PROCEDURES**
Main Presenter: Matthew D. Spann, MD
Co-Authors: Brandon Williams, MD; Ronald H. Clements, MD

3:55pm **A168 – LAPAROSCOPIC REVISION OF ADJUSTABLE GASTRIC BAND TO TOUPET FUNDOPLICATION WITH HIATAL HERNIA REPAIR**
Main Presenter - John A. Primomo, MD

4:05pm **A169 – LAPAROSCOPIC REVISION OF CHRONIC MARGINAL ULCER AND BILATERAL TRUNCAL VAGATOMY**
Main Presenter - Maher El Chaar, MD, FACS, FASMBS

4:15pm **A170 – LAPAROSCOPIC ROUX-EN-Y GASTRIC BYPASS IN A PATIENT WITH SITUS INVERSUS**
Main Presenter: Lars Nelson, MD
Co-Authors: Rena Moon, MD; Andre F. Teixeira, MD; Muhammad A. Jawad, MD

4:25pm **A171 – BARIATRIC SURGERY COMPLICATIONS: DIAGNOSIS AND MANAGEMENT OF THE GASTROGASTRIC FISTULA**
Main Presenter: Selma Siddiqui, MD
Co-Author: Rami E. Lutfi, MD

4:35pm **A172 – MANAGEMENT TECHNIQUES FOR FAILED VERTICAL BANDED GASTROPLASTY.**
Main Presenter: A. Daniel D. Guerron, MD
Co-Author: Dana D. Portenier, MD

4:45pm **A173 – MANAGEMENT MODALITIES IN SLIPPED GASTRIC BAND**
Main Presenter: Wael Abdel-Salam, MD
Co-Authors: Tamer N. Abdelbaki, MD, MRCS; El-Said El-Kayal, MD; Khaled Katri, MD

4:55pm **A174 – LAPAROSCOPIC ROUX-EN-Y GASTRIC BYPASS FOR TREATMENT OF SEVERE REFLUX FOLLOWING NISSEN FUNDOPLICATION AND MULTIPLE HIATAL REPAIRS**
Main Presenter: Raul J. Rosenthal, MD
Co-Authors: Fernando FD. Dip, MD; David Nguyen, MD; Nisha Dhanabalsamy, MD; William Pasley, MD; Emanuele Lo Menzo, MD PhD; Samuel Szomstein, MD FACS FASMB

5:05pm **A175 – LAPAROSCOPIC REPAIR OF A PERFORATED GASTROJEJUNAL ULCER POST MINI GASTRIC BYPASS**
Main Presenter: Johnny Jaddad
Co-Author: Osamah Alsanea, MD

Integrated Health Abstract Session
Wednesday, November 4, 2015

Integrated Health Abstract Session **10:15am-12:00pm**

10:20am **A176 – CHANGES IN SEXUAL LIFE FOLLOWING BARIATRIC SURGERY**
Main Presenter: Kristine J. Steffen, PharmD PhD
Co-Authors: Wendy C. King, PhD; Gretchen E. White, MPH; Leslee Subak, MD; James E. Mitchell, MD; Anita Courcoulas, MD; David R. Flum, MD; Gladys W. Strain, PhD, RD, FTOS; David B. Sarwer, PhD; Ronette L. Kolotkin, PhD; Walter J. Pories, MD; Alison Huang, MD

10:35am **A177 – EFFECT OF PREOPERATIVE HEMOGLOBIN A1C ON BARIATRIC SURGERY OUTCOMES**
Main Presenter: Amir A. Ghaferi, MD
Co-Authors: Shareef Syed, MD; Jonathan Finks, MD; Michael H. Wood, MD; Arthur Carlin, MD; Eyad Wohaibi, MD; Kerry L. Kole, DO; Chad D. Ringley, MD

10:50am **A178 – IMPROVED PERIOPERATIVE SUPPORTIVE CARE IS ASSOCIATED WITH REDUCED READMISSION RATE AFTER BARIATRIC SURGERY**
Main Presenter: Tammam Obeid, MBBS
Co-Authors: Kimberely Steele, MD, Ph.D. , FACS; Jessica Bauer; Eva Kelly, Bachelor of Science; Michael A. Schweitzer, MD; Thomas H. Magnuson, MD

11:05am **A179 – THE STATE OF WEIGHT LOSS SURGERY PATIENT EDUCATION: AN EXAMINATION OF THE EVIDENCE**
Main Presenter: Karen D. Groller, MSN, RN-BC, CMSRN

11:20am **A180 – EFFECT OF A 12-WEEK MULTIDISCIPLINARY TREATMENT FOR FAILED BARIATRIC SURGERY**
Main Presenter: Veronica Sanchez, MD
Co-Authors: Alicia Vasquez, MA; Claudia Gómez, RD; Miguel F. Herrera, MD, PhD; Maureen Mosti, RN CBN; David Velàzquez-Fernàndez, MD, MSc, PhD

11:35am **A181 – PSYCHIATRIC DISORDERS AND WEIGHT CHANGE IN A PROSPECTIVE STUDY OF BARIATRIC SURGERY PATIENTS: A 3-YEAR FOLLOW-UP**
Main Presenter: Melissa Kalarchian, Ph.D.
Co-Authors: Wendy C. King, PhD; Michael Devlin, MD; Marsha D D. Marcus, PhD; Jia-Yuh Chen, MS; Luis A. Garcia, MD FACS MBA; Susan Z. Yanovski, MD; James E. Mitchell, MD

11:50am **A182 – USE OF AUDIENCE RESPONSE SYSTEM (ARS) TECHNOLOGY IN A POST-BARIATRIC SURGERY POPULATION**
Main Presenter: Paul A. Lorentz, MS RN RD BBA
Co-Authors: Maria Collazo-Clavell, MD; Manpreet S. Mundi, MD; Karen B. Grothe, PhD ABPP LP; Todd A. Kellogg, MD

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Master Course in Behavioral Health Abstract Sessions
Monday, November 2, 2015

Masters Course in Behavioral Health: Session I 1:30pm-5:30pm

3:15pm **A183 – PREOPERATIVE PSYCHOSOCIAL FACTORS ASSOCIATED WITH SYMPTOM PERCEPTION ONE YEAR AFTER BARIATRIC SURGERY.**
Main Presenter: Ingela Lundin L. Kvalem, PhD
Co-Authors: Irmelin Bergh, MSc; Hilde Risstad, MD; Tom Mala, Dr

3:35pm **A185 – BODY CONTOURING SURGERY FOLLOWING ROUX-EN-Y GASTRIC BYPASS IN THE LONGITUDINAL ASSESSMENT OF BARIATRIC SURGERY-2 COHORT**
Main Presenter: Kristine J. Steffen, PharmD PhD
Co-Authors: James E. Mitchell, MD; Anita P. Courcoulas, MD MPH; J. Peter Rubin, MD; Jo Ellison, PhD; Ross D. Crosby, PhD

Tuesday, November 3, 2015

Masters Course in Behavioral Health: Session II 8:00am-12:00pm

9:15am **A184 – ALCOHOL AFTER BARIATRIC SURGERY: DATA FROM A SAMPLE OF SELF-REPORTED PROBLEMATIC DRINKERS**
Main Presenter: Scott G. Engel, PhD
Co-Authors: Karen B. Grothe, PhD ABPP LP; Afton M. Koball, PhD; Kristine J. Steffen, PharmD PhD; Luis A. Garcia, MD FACS MBA; James E. Mitchell, MD

9:30am **A191 – BRIEF FOUR SESSION CBT GROUP INCREASES KNOWLEDGE AND COPING SKILLS IN A HIGH-RISK BARIATRIC SURGERY POPULATION**
Main Presenter: Megan Lavery, Psy.D.
Co-Authors: Leslie J. Heinberg, PhD; Kasey Goodpaster, Ph.D.; Julie Merrell Rish, PhD; Kathleen R. Ashton, PhD

10:00am **A186 – GRAZING EATING AMONG BARIATRIC SURGERY CANDIDATES: PREVALENCE AND PSYCHOSOCIAL CORRELATES**
Main Presenter: Kasey Goodpaster, Ph.D.
Co-Authors: Ryan J. Marek, MA; Kathleen R. Ashton, PhD; Megan Lavery, Psy.D.; Julie Merrell Rish, PhD; Leslie J. Heinberg, PhD

10:15am **A187 – PERCEIVED FOOD TRIGGERS RELATED TO CHANGE IN FREQUENCY OF SNACKING ONE YEAR AFTER BARIATRIC SURGERY**
Main Presenter: Irmelin Bergh, MSc
Co-Authors: Hilde Risstad, MD; Falko F. Sniehotta, PhD; Ingela Lundin L. Kvalem, PhD

10:30am **A188 – DEPRESSION, EATING BEHAVIORS, SELF-ESTEEM AND EARLY BODY IMAGE CONCERNS AFTER BARIATRIC SURGERY.**
Main Presenter: Julie M. Merrell Rish, PhD
Co-Authors: Ashleigh A. Pona, B.S.; Megan Lavery, Psy.D.; Leslie J. Heinberg, PhD; Kathleen R. Ashton, PhD

Masters Course in Behavioral Health: Session III 1:30pm-5:30pm

2:45pm **A189 – PSYCHOLOGICAL FACTORS, HEALTHCARE DISPARITIES, AND WEIGHT LOSS SURGERY**
Main Presenter: Kathleen R. Ashton, PhD
Co-Authors: Ryan J. Marek, MA; Julie M. Merrell Rish, PhD; Megan Lavery, Psy.D.; Leslie J. Heinberg, PhD

3:15pm **A190 – A PILOT RANDOMIZED CONTROLLED TRIAL OF TELEPHONE-BASED COGNITIVE BEHAVIORAL THERAPY FOR PREOPERATIVE BARIATRIC SURGERY PATIENTS**
Main Presenter: Sanjeev Sockalingam, MD
Co-Authors: Stephanie E. Cassin, PhD; Chau Du, M.Sc.; Susan Wnuk, PhD; Raed Hawa, MD, FRCPC; Timothy D. Jackson, MD; Sagar Parikh, MD

3:35am **A192 – IMPACT OF INTEGRATING DEDICATED PSYCHOLOGICAL SUPPORT ON THE ATTRITION RATE OF A BARIATRIC SURGERY PREOPERATIVE PROGRAM**
Main Presenter: Tanya L. Kindel, MA
Co-Authors: Chris Christensen, RN; Stanley Zagorski, Jr, MD; D'Arcy Duke, MD

3:50am **A193 – A PILOT STUDY TO ASSESS FEASIBILITY, ACCEPTABILITY, AND EFFECTIVENESS OF A REMOTELY-DELIVERED INTERVENTION TO ADDRESS WEIGHT REGAIN AFTER BARIATRIC SURGERY**
Main Presenter: Lauren E. Bradley, M.S.
Co-Authors: Evan Forman, PhD; Stephanie G. Kerrigan, MS; Stephanie P. Goldstein, BS; Meghan L. Butryn, PhD; Graham Thomas, PhD; James D. Herbert, Ph.D.; David B. Sarwer, PhD

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Oral Poster Presentations

Friday, November 6, 2015

TOP 15 POSTERS **3:45pm–5:15pm**

3:45pm **A5001 – TIME-TO-EVENT ANALYSIS FOR REOPERATION OF INTERNAL HERNIATION AFTER DOUBLE LOOP LINEAR LAPAROSCOPIC GASTRIC BYPASS: AN EIGHT YEARS FOLLOW-UP STUDY OF 4839 ANTECOLIC GASTRIC BYPASS PROCEDURES AT A SINGLE INSTITUTION**
Main Presenter: Jens Fromholt JF. Larsen, MD, Ph.D.
Co-Authors: Thorbjorn Sommer, MD, PhD; Jens Peter Kroustrup, MD

3:50pm **A5002 – PREOPERATIVE ENDOSCOPIC AND RADIOLOGIC EVALUATION OF BARIATRIC PATIENTS: WHAT DO THEY ADD?**
Main Presenter: Iman Ghaderi, MD MSc
Co-Author: Julia Samame, MD; Hany M. Takla, MD; Rose M. Ibrahim, MD; Carlos A. Galvani, MD

3:55pm **A5003 – READMISSION FOLLOWING SLEEVE GASTRECTOMY VERSUS ROUX-EN-Y GASTRIC BYPASS**
Main Presenter: Megan Sippey, MD
Co-Authors: Kevin R. Kasten, MD; William HH. Chapman, III, MD; Walter J. Pories, MD; Konstantinos Spaniolas, MD

4:00pm **A5004 – A CHALLENGE BETWEEN TRAINEE EDUCATION AND PATIENT SAFETY: DOES FELLOW PARTICIPATION IMPACT POSTOPERATIVE OUTCOMES FOLLOWING BARIATRIC SURGERY?**
Main Presenter: Ali Aminian, MD
Co-Authors: Rizwan Chaudhry, MD; Zhamak Khorgami, MD; Amin Andalib, MD, MS; Toms Augustin, MD MPH; Matthew D. Kroh, MD; Stacy A. Brethauer, MD; Philip R. Schauer, MD

4:05pm **A5005 – INTRAGASTRIC BALLOON THERAPY FOR OBESE AND OVERWEIGHT PATIENTS: RESULTS IN 200 PATIENTS**
Main Presenter: Marcos A. Berry , MD
Co-Authors: Lionel Urrutia, MD; Patricio Lamoza, MD; Federico Parra, MD; Daniela Ghiardo, RN; Giselle Muñoz, MD

4:10pm **A5006 – A DOUBLE-BLIND SHAM/DEFLATION STUDY EVALUATING REWARD AND SOMATOSENSORY BRAIN ACTIVATION AFTER MILKSHAKE TASTE IN SUCCESSFUL LAPAROSCOPIC ADJUSTABLE GASTRIC BAND PATIENTS**
Main Presenter: Andrea M. Stone, BS
Co-Authors: Katherine Gershfeld; Janet Ng, PhD; Gregory A. Book, MS; Sally N. Strange, PhD, RN, CBN; Pavlos K. Papasavas, MD; Darren S. Tishler, MD; Godfrey Pearlson, MD

4:15pm **A5007 – THREE YEAR WEIGHT LOSS OUTCOMES WITH ROUX-EN-Y GASTRIC BYPASS IS SUPERIOR TO SLEEVE GASTRECTOMY IN PATIENTS 65 YEARS AND OLDER**
Main Presenter: Robert A. Casillas, MD
Co-Authors: Benjamin Kim, MD; Scott S. Um, MD; Jorge L. Zelada Getty, MD; Karen J. Coleman, PhD

4:20pm **A5008 – IN THE MEGA-OBESE WEIGHT LOSS, BMI AND RESOLUTION OF WEIGHT-RELATED MEDICAL PROBLEMS AFTER BILIOPANCREATIC**

BYPASS/DUODENAL SWITCH VARY BY RACE: AN ANALYSIS OF 1,673 BOLD DATABASE PATIENTS
Main Presenter: Paul A. Boulos, D.O
Co-Author: Gus J. Slotman, MD;

4:25pm **A5009 – LAPAROSCOPIC SLEEVE GASTRECTOMY AFTER FAILED GASTRIC BANDING: IS IT REALLY EFFECTIVE?**
Main Presenter: Sergio Carandina, MD
Co-Author: Manuela Bossi, MD; Malek Tabbara; Claude Polliand, MD; Laurent Genser, MD; Christophe Barrat, MD, PhD

4:30pm **A5010 - PREGNANCY FOLLOWING BARIATRIC SURGERY: THE EFFECT OF TIME-TO-CONCEPTION ON MATERNAL WEIGHT GAIN AND NUTRITIONAL STATUS**
Main Presenter: Patricia Yau, BA
Co-Authors: Patricia C. Chui, MD PhD; Manish O. Parikh, MD; John K. Saunders, MD; Tara Zablocki, RN, FNP-BC, MPH; Akuezunkpa O. Ude Welcome, MD

4:35pm **A5011 - PREDICTORS OF INADEQUATE EXCESS WEIGHT LOSS 12-MONTHS AFTER LAPAROSCOPIC ROUX EN-Y GASTRIC BYPASS FOR MORBID OBESITY**
Main Presenter: Waleed Al-Khyatt, PhD, MRCS
Co-Authors: Rebecca Ryall, MBBCh; Paul Leeder, MBChB, MD, FRCS; Javed Ahmed, MBBS FRCSI; Sherif Awad, PhD, FRCS

4:40pm **A5012 - GASTRIC BYPASS SURGERY REGULATES GENE EXPRESSION OF PROMOTING FACTORS OF DIABETIC NEPHROPATHY IN DIABETIC FATTY RATS**
Main Presenter: Ali Aminian, MD
Co-Authors: Anny Mulya, PhD; Sankar D. Navaneethan, MD, MD, MPH; Philip R. Schauer, MD; John P. Kirwan, PhD; Stacy A. Brethauer, MD

4:45pm **A5013 - DOES PREOPERATIVE RESTING ENERGY EXPENDITURE PREDICT WEIGHT LOSS AFTER BARIATRIC SURGERY?**
Main Presenter: Dimitrios Stefanidis, MD
Co-Authors: Mitchell Lynn, Jr., RN; Timothy Kuwada, MD; Keith Gersin, MD

4:50pm **A5014 - THE EFFECTS OF BEST PRACTICE MODELS ON 30-DAY READMISSION RATES AT A COMPREHENSIVE CENTER PERFORMING LAPAROSCOPIC ADJUSTABLE GASTRIC BANDING, LAPAROSCOPIC SLEEVE GASTRECTOMY AND ROUX-EN-Y GASTRIC BYPASS**
Main Presenter: Charmaine V. Gentles, ANP-BC, RNFA
Co-Authors: Larry E. Gellman, MD; Dominick Gadaleta, MD

4:55pm **A5015 - THE ROLE OF CONTROLLABLE ENVIRONMENTAL VARIABLES IN WEIGHT LOSS SUCCESS AFTER BARIATRIC SURGERY**
Main Presenter: Carly A. Roukos, MS
Co-Authors: Michal A. Strahilevitz, PhD; Colleen M. Cook; Brian Wansink, PhD; Debra Safer, MD

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Posters of Distinction Oral Presentations
Located In Poster Theater/Exhibit Hall

Wednesday, November 4, 2015 12:15pm-1:15pm

A5016 - SINGLE-STAGE VS. TWO-STAGE LAPAROSCOPIC SLEEVE GASTRECTOMY AFTER FAILURE OF LAPAROSCOPIC GASTRIC BAND. A META-ANALYSIS REVIEW

Main Presenter: Antonio Gangemi

Co-Authors: Hazbar Khalaf, BS in Biological Sciences; Krupa Patel, BS Neuroscience in progress; Enrique Elli, MD

A5018 - FAST TRACK BARIATRIC SURGERY: SAFETY OF DISCHARGE ON THE FIRST POSTOPERATIVE DAY AFTER LAPAROSCOPIC GASTRIC BYPASS

Main Presenter: Zhamak Khorgami, MD

Co-Authors: Amin Andalib; Ricard Corcelles, MD PhD; Ali Aminian, MD; Philip R. Schauer, MD; Stacy A. Brethauer, MD

A5019 - LENGTH MATTERS: ADOLESCENTS WITH LAPAROSCOPIC ADJUSTABLE GASTRIC BANDING AT 5 YEARS AND BEYOND

Main Presenter: Christine A. Schad, MD

Co-Authors: Brian P. Fallon, BA; Jeffrey L. Zitsman, MD

A5020 - SINGLE-ANASTOMOSIS DUODENAL-JEJUNAL BYPASS WITH SLEEVE GASTRECTOMY (SADJB-SG) VERSUS RY GASTRIC BYPASS: MIXED MEAL STUDY

Main Presenter: Wei-Jei Lee, MD PhD

Co-Authors: P. James Zachariah, MS, FACS.; Jun-Juin Tsou, CBN; Yi-Chih Lee, PHD; Jung-Chien Chen, MD; Kong-Han Ser, MD

A5021 - A 2-WEEK LIQUID HIGH PROTEIN DIETARY INTERVENTION (LHPDI) REDUCES ENDOTOXEMIA, AND IMMUNE AND INFLAMMATORY RESPONSES IN MORBIDLY OBESE DIABETIC PATIENTS

Main Presenter - Scott Monte, PharmD

Co-Author: Joseph A. Caruana, MD

A5022 - PROXIMAL GASTRECTOMY WITH ESOPHAGOJEJUNOSTOMY FOR CHRONIC GASTROPERITONEAL FISTULA FOLLOWING SLEEVE GASTRECTOMY AND REVISIONAL GASTRIC BYPASS

Main Presenter: Raul J. Rosenthal, MD

Co-Authors: David Nguyen, MD; Joseph Melendez, MD; Emanuele Lo Menzo, MD PhD; Alex Ordonez, MD; Samuel Szomstein, MD FACS FASMB

A5023 - PROVIDER PREDICTION OF SUCCESS AFTER BARIATRIC SURGERY

Main Presenter: Stephanie Oceguera, MD

Co-Authors: Lisa L. Hamilton, MD; Du Nguyen, MD; Steven J. Heneghan, MD

A5024 - ROUX-EN-Y GASTRIC BYPASS VERSUS SLEEVE GASTRECTOMY WITH JEJUNAL BYPASS FOR THE TREATMENT OF TYPE 2 DIABETES. RESULTS AT 12 MONTHS OF FOLLOW-UP

Main Presenter: Matias Sepulveda, MD:

Co-Authors: Munir J. Alamo, Juan, MD; Jorge Saba, MD; Cristian Astorga, MD; Hernan Guzman, MD; Leopoldo Peñ, student

A5025 - 3D CT VOLUMETRIC ANALYSIS OF GASTRIC SLEEVE ON POST OPERATIVE DAY 1 (POD 1) AND AT 1-YEAR POST-OP (PO) AFTER A STANDARDIZED LAPAROSCOPIC SLEEVE GASTRECTOMY (LSG): DOES IT HAVE ANY CORRELATION WITH PERCENT EXCESS WEIGHT LOSS (%EWL)?

Main Presenter: Sandeep Malhotra, MBBS FACS

Co-Authors: Mriganka S. Sharma, MBBS, MS; Ankita Mishra, MBBS; Tarun Piplani, MBBS, DNB; Manish K. Singh, M.Sc. Biostatistics; Dharmender Sharma, MBBS, MS

A5027 - CHARACTERISTICS OF ADOLESCENTS WITH A POOR MENTAL HEALTH OUTCOME AFTER BARIATRIC SURGERY

Main Presenter: Kajsa Jarvholm, PsyD

Co-Author: Jan Karlsson, Dr; Markku Peltonen, PhD; Claude Marcus, MD, PhD; Torsten Olbers, MD, PhD; Per Johnsson, PhD; Jovanna Dahlgren, MD, PhD; Carl-Erik Flodmark, MD. Ph.D.; Eva Gronowitz, RN, PhD

A5028 - THROMBOPHYLAXIS IN PATIENTS UNDERGOING BARIATRIC SURGERY

Main Presenter: Maureen T. Quigley, MS, APRN

Co-Author: Monic Roengvoraphoj, MD; Gina Adrales, MD, MPH

A5029 - DESCRIPTION OF REVISIONAL BARIATRIC SURGERY OPERATIONS PERFORMED IN A DIVERSE POPULATION OF PATIENTS FROM A LARGE INTEGRATED HEALTH CARE SYSTEM

Main Presenter: Karen J. Coleman, PhD

Co-Authors: Robert A. Casillas, MD; Katie A. Chapmon, MS, RD; Philip L. Chin, MD; Peter N. Fedorka, MD; Jorge L. Zelada Getty, MD; Fadi Hendee, MD; Benjamin Kim, MD; Mary Jane R. Mancuso, NP; Edward C. Mun, MD; Laura Sirikuldvadhana, MPH; Scott S. Um, MD; Jialuo Liu, MS; Robert Zane, MD

A5180 - FACTORS INFLUENCING WITHDRAWAL FROM PREOPERATIVE BARIATRIC SURGERY PROCESS

Main Presenter: Kaitlyn E. Billington, NP

Co-Author: Subhash U. Kini, MD

Thursday, November 5, 2015 12:15pm-1:15pm

A5031 - BARIATRIC SURGERY IN MORBIDLY OBESE PATIENTS INFECTED WITH THE HUMAN IMMUNODEFICIENCY VIRUS

Main Presenter: Raul J. Rosenthal, MD

Co-Author: Abraham Abdemur, MD; Federico Perez Quirante, MD; Lisandro Montorfano, Medical Doctor (MD); Abraham Betancourt, MD; Emanuele Lo Menzo, MD PhD; Samuel Szomstein, MD FACS FASMB

A5033 - LONGITUDINAL ASSESSMENT OF SUBSTANCE USE AND MISUSE AMONG ADULTS FOLLOWING ROUX-EN Y GASTRIC BYPASS AND LAPAROSCOPIC ADJUSTABLE GASTRIC BANDING: 7 YEAR FOLLOW-UP

Main Presenter: Wendy C. King, PhD

Co-Author: Jia-Yuh Chen, MS; Anita P. Courcoulas, MD MPH; Gregory F. Dakin, MD; Scott G. Engel, PhD; David R. Flum, MD, MPH, FACS; Marcelo W. Hinojosa, MD; Melissa Kalarchian, Ph.D.; Samer G. Mattar, MD; James E. Mitchell, MD; Alfons Pomp, MD; Walter J. Pories, MD; Kristine J. Steffen, PharmD PhD; Bruce M. Wolfe, MD; Susan Z. Yanovski, MD

A5035 - WEIGHT LOSS AFTER REVISION FROM LAPAROSCOPIC ROUX EN- Y GASTRIC BYPASS TO DUODENAL SWITCH

Main Presenter: Amit AS. Surve, MD

Co-Author: Daniel R. Cottam, MD; Christina Richards, MD; Hinali M. Zaveri, MD; Walter Medlin, MD; Samuel Cottam, CNA

A5036 - LAPAROSCOPIC DUODENAL SWITCH: ONE OR TWO LOOPS?

Main Presenter: Amador Garcia Ruiz, MD

Co-Authors: Andrés Sánchez-Pernaute, MD, PhD; Anna Casajoana Badia, MD; Miguel Angel Rubio-Herrera, MD, PhD; Jordi Pujol Gebelli, MD, PhD; Antonio Jose Torres, MD

A5038 - LAPAROSCOPIC REMOVAL OF ERODED GASTRIC BAND

Main Presenter - Pei-Wen Lim, MD
Co-Author: John J. Kelly, MD

A5039 - DISCREPANCIES IN THE RELATIONSHIP OF BMI AND TRADITIONAL CARDIOVASCULAR RISK FACTORS IN SUBJECTS WITH DIFFERENT LEVELS OF OBESITY

Main Presenter: Stefanie van Mil, MD
Co-Author - Astrid van Huisstede, MD; Boudewijn Klop, MD, PhD; Gert-Jan M. van de Geijn, PhD.; Gert Jan Braunstahl, MD PhD; Erwin Birnie, PhD; Guido HH. Mannaerts, MD PhD; Laser U. Biter, MD; Manuel Castro Cabezas, MD, PhD

A5040 - PRIMARY REPAIR OF VENTRAL HERNIA DURING INITIAL LAPAROSCOPIC BARIATRIC SURGERY RESULTS IN VERY LOW LONG TERM RECURRENCE RATES

Main Presenter: Piotr Krecioch, MD
Co-Authors: Thomas Shin, MD; Marie Hunsinger, RN; Matthew E. Plank, PA-C; James Dove, BA; Marcus Fluck, BS; Anthony T. Petrick, MD; Jon D. Gabrielsen, MD

A5041 - BONE MINERAL DENSITY IN WOMEN 12 MONTHS AFTER BARIATRIC SURGERY: COMPARISON BETWEEN LAPAROSCOPIC SLEEVE GASTRECTOMY, GASTRIC BYPASS AND SLEEVE GASTRECTOMY WITH JEJUNAL BYPASS.

Main Presenter - YUDITH PREISS, MD, Msc
Co-Authors: Matias Sepulveda, MD; Ximena Prat, MD; Andrea Morales, MD

A5042 - IS THERE ANY RELEVANT ADVANTAGE USING A RING AMONG RYGBP PATIENTS?

Main Presenter: Silvia L. Faria, MSc, RD
Co-Authors: Orlando P. Faria, MD; Mariane M. Cardeal, MD; Larissa Berber, Treinee

A5026 - PREDICTING T2DM REMISSION AFTER LAPAROSCOPIC SLEEVE GASTRECTOMY: A COMPARISON OF Dia Rem and ABCD SCORING SYSTEM

Main Presenter: Wei-Jei Lee, MD PhD
Co-Authors: Jun-Juin Tsou, CBN; Pulimuttil James Zachariah, MS, FACS.; Abdullah Almulaifi, M.D; Shu-Chu Chen, RN; Jung-Chien Chen, MD; Kong-Han Ser, MD

A5044 - REVISIONAL BARIATRIC SURGERY: CONVERSION FROM LSG TO RYGB WITH RESULTS AFTER 3 YEARS OF FOLLOW UP

Main Presenter - Julian J. Hernandez, MD
Co-Author - Camilo Boza, MD; Ricardo Funke, MD; Fernando Pimentel, MD; Nicolas Quezada, MD

A5045 - GALLSTONES IN OBESE PATIENTS UNDERGOING BARIATRIC SURGERY: STUDY AND POSTOPERATIVE MONITORING

Main Presenter: Juan Pablo P. Lasnibat, MD
Co-Authors: Luis Gutierrez, MD; Juan Carlos C. Molina, MD; Italo Braghetto, MD

A5017 - IMPROVEMENTS IN PSORIASIS AND PSORIATIC ARTHRITIS WITH SURGICAL WEIGHT LOSS

Main Presenter: Monica Sethi
Co-Author: Christine J. Ren-Fielding, MD; Shimwoo Lee, BA; Bradley F. Schwack, MD; Marina S. Kurian, MD; George A. Fielding, MD; Soumya Reddy, MD

PAPER SESSIONS

Wednesday, November 4, 2014

Paper Session I: TOP PAPERS AND VIDEOS 10:15am – 12:00pm

A101

PRIMARY CARE PHYSICIAN APPROACHES TO SEVERE OBESITY TREATMENT AND BARIATRIC SURGERY: A QUALITATIVE STUDY

Luke Funk MD, MPH[1], Madison, WI; Sally Jolles MA[1;] Caprice Greenberg MD, MPH[1], Madison, Wisconsin; Corrine Voils PhD[2], Durham, NC
University of Wisconsin[1] Duke University Medical Center[2]

Background: Bariatric surgery is the most cost-effective treatment for severe obesity, yet less than 1% of U.S. adults undergo bariatric surgery annually. Reasons for low utilization are unclear although previous investigators have found that the most powerful predictor of whether a patient would consider bariatric surgery was if the primary care physician (PCP) recommended it. To better understand how PCPs prioritize the care they provide to their severely obese patients – who often have multiple comorbidities - we conducted focus groups with PCPs in Wisconsin. Specifically, we investigated how PCPs approach bariatric surgery as a treatment option and explored the challenges they encounter while providing care. **Methods:** We conducted three 90-minute focus groups with PCPs in a rural setting (Mauston), mid-sized city (Madison), and large city (Milwaukee) in Wisconsin. PCPs were eligible to participate if they managed adult patients (>50% of their practice) and had seen at least five severely obese patients (BMI >35 or higher) in their clinic over the past 6 months. During the focus groups, participants were given a clinical vignette of a severely obese patient with multiple comorbidities and were asked a variety of questions about how they would prioritize treatment. All questions were guided by a focus group script, and the moderator used open-ended follow-up questions to pursue emerging themes. Participants completed a demographic questionnaire prior to completion of the focus group. Sessions were audio-recorded and transcribed. Data were analyzed using a directed approach to content analysis, in which emergent themes were identified and finalized through a process of consensus among three coders. **Results**: Participants in the three focus groups (n=16) had a mean age of 46 (SD 11), 50% were female, and 94% were white. We identified four general approaches that PCPs use when prioritizing treatment for severely obese patients with multiple comorbidities: 1) Treat the disease that is the "easiest" to address, which is often hypertension or diabetes; 2) Treat the disease that is perceived as the most dangerous; 3) Let the patient set the agenda; 4) Address obesity first because it is the "common denominator" underlying many of the comorbid conditions. Challenges to implementing the plan included patient characteristics (low socioeconomic status, prior weight loss failures, being in denial about their obesity), provider factors (feeling ineffective in their ability to help patients lose weight), and systemic factors, particularly uncertainty regarding insurance coverage for obesity-related services. PCPs rarely – if ever – brought up the idea of bariatric surgery with their patients. This hesitancy stemmed from five main concerns: 1) Wanting to "do no harm"; 2) Questioning the long-term effectiveness of bariatric surgery; 3) Having limited knowledge about bariatric surgery; 4) Not wanting to recommend bariatric surgery "too early"; 5) Not knowing if the patient's insurance would cover it. Once the PCP and patient agreed to pursue bariatric surgery, challenges to executing the plan during the pre-operative, operative and post-operative phases included meeting the preoperative requirements, living far from a bariatric surgery program, and the need for PCPs to be involved in post-operative care. **Conclusions:** PCP approaches to prioritizing care are pragmatic and mostly derived from previous experiences with patients. Three of the four prioritization approaches typically place the treatment emphasis on health conditions other than obesity. The five main concerns that PCPs have about bariatric surgery referral can be effectively addressed by provider

and patient education, research, policy change, and publicity to highlight the literature regarding safety and effectiveness of bariatric surgery. Given that obesity often underlies many patient comorbidities, future research should focus on providing effective weight management options for PCPs in clinic and health system re-design that supports comprehensive weight management treatment. *This research was conducted as part of a 2014 ASMBS Research Grant award to Dr. Funk

A102

PROXIMAL VERSUS DISTAL GASTRIC BYPASS IN PATIENTS WITH BODY MASS INDEX 50 TO 60: A DOUBLE-BLIND, RANDOMIZED CLINICAL TRIAL

Hilde Risstad MD[1], Oslo, N; Marius Svanevik MD[2], Tonsberg, Vestfold, Norway; Jon A. Kristinsson MD, PhD[1], Oslo, Oslo; Jøran Hjelmesæth MD, PhD[2], Tønsberg, Norway; Erlend T. Aasheim MD, PhD, MPhil[1], Oslo, Norway; Dag Hofsø PhD[2], Tønsberg, Vestfold; Torgeir T. Søvik MD[1], Oslo, Oslo; Tor-Ivar Karlsen PhD[2], Grimstad, N/A; Morten W. Fagerland PhD[1], Oslo, Oslo; Rune Sandbu MD PhD[2], Tonsberg, Norway; Tom Mala[1]
Oslo University Hospital[1] Vestfold Hospital Trust[2]

Background: Patients with a body mass index (BMI, kg/m2) of 50 or more experience substantial weight loss, but often remain morbidly obese after proximal Roux'en Y gastric bypass (RYGB). We tested whether a distal RYGB improves patient outcomes in a double-blind randomized clinical trial. **Methods:** Patients aged 20 to 60 years with a BMI of 50 to 60 kg/m2 were included from 2 public tertiary care obesity centers in Norway and randomly assigned to proximal RYGB (150 cm alimentary limb) or distal RYGB (common channel 150 cm). In both procedures the biliopancreatic limb was 50 cm and the gastric pouch 25 ml. Follow-up visits were made at 6 weeks, 6 months, 1 year and 2 years after surgery. Patients and follow-up personnel were blinded to type of surgery which was not registered in the medical records, but available for emergencies. All patients were prescribed multivitamins- and minerals, calcium and vitamin D, iron and vitamin B-12. Supplementation was adjusted during follow-up according to protocol. The primary study end point is change in BMI from baseline to 2 years. Secondary end points include changes in markers of cardio-metabolic risk and nutritional status. We use paired samples T test to compare changes within groups and linear regression of the 2-year measurements on treatment and baseline measurement to compare changes between the groups. A 2-sided P value of .05 is considered statistically significant. **Results:** A total of 113 patients were included and operated with either proximal (n= 57) or distal (n= 56) RYGB, 109 (96%) completed the 2-year follow-up. Baseline characteristics were not significantly different between the groups; mean (SD) age was 39.7 (8.8) years, 65% were women, mean BMI was 53.5 (2.9) kg/m2 and mean body weight was 158.8 (18.6) kg. One patient with distal RYGB died from deterioration of liver cirrhosis 9 months after surgery. At 2 years, the mean (95% CI) BMI reduction was 18.6 (17.0 to 20.3) kg/m2 after proximal and 18.1 (17.1 to 19.1) kg/m2 after distal RYGB, mean between-group difference was 0.7 (-1.2 to 2.6) kg/m2, P= .47. The mean (95% CI) fasting total cholesterol decreased from 5.1 (4.9 to 5.4) mmol/L to 4.3 (4.0 to 4.6) mmol/L after proximal RYGB and from 5.3 (5.0 to 5.5) mmol/L to 3.5 (3.3 to 3.7) mmol/L after distal RYGB, mean between-group difference was -0.8 (-1.1 to -0.5), P< .001. Low-density lipoprotein cholesterol decreased from 3.1 (2.9 to 3.4) mmol/L to 2.4 (2.2 to 2.6) mmol/L and from 3.3 (3.1 to 3.6) mmol/L to 1.7 (1.6 to 1.9) mmol/L respectively, mean between group difference was -0.7 (-0.9 to -0.4) mmol/L, P< .001. Changes in fasting high-density lipoprotein cholesterol, triglycerides, glucose, glycated hemoglobin A1c and blood pressure did not differ between the groups. The mean (95% CI) serum concentration of vitamin D changed from 47.0 (41.6 to 52.4) nmol/L to 57.8 (51.9 to 63.7) nmol/L after proximal gastric bypass and from 46.4 (41.7 to 51.1) nmol/L to 48.9 (42.8 to 55.1) nmol/L after distal gastric bypass, the mean between-group difference was -8.9 (-17.0 to -0.8) nmol/L, P= .031. Changes in vitamin A, thiamin, folic acid, vitamin B-12, hemoglobin and albumin were similar across the groups. **Conclusion:** In our preliminary analyses of study outcomes, we found similar reductions in BMI 2 years after

proximal and distal RYGB. Distal RYGB was associated with larger reductions in total and low-density lipoprotein cholesterol, while changes in other markers of cardio-metabolic risk were not significantly different between the groups.

A103

SINGLE CENTER EXPERIENCE WITH LAPAROSCOPIC ADJUSTABLE GASTRIC BANDING (LAGB): BANDING LIFESPAN AND WEIGHT LOSS AT TEN YEARS OF FOLLOW-UP.

Sergio Carandina MD[1], Paris, France; Andrea Lazzati MD[2], Créteil, France; Manuela Bossi MD[1], Bondy, France; Claude Polliand MD[1], Bondy, France; Daniel Azoulay MD[2], Créteil, Ile de France; Christophe Barrat MD, PhD[1], Paris, France
Department of Digestive and Metabolic Su[1]
Departement of Digestive Surgery Centre[2]

Introduction The adjustable gastric banding (AGB) has been for a long time the most performed bariatric procedure in France. During the last years the number of LAGB placed is gradually decreasing while the number of ablation is increasing. We present our results of adjustable gastric band with a minimum follow-up of 10 years by focusing the attention to the LAGB lifespan and weight loss. **Methods** This is a retrospective review of our prospectively collected data of obese patients who had a LAGB between January 1998 and January 2005. LAGB lifespan was assessed using Kaplan-Meier curves. Weight loss results were expressed as the change in body mass index (BMI) and percentage of excess weight loss (%EWL). In our study, failure of banding was defined as %EWL <25% or AGB removal. **Results** During the period considered, 301 patients underwent to a LAGB. The mean age was 39 years (20-61) and the average preoperative weight and BMI was respectively 122 kg (68-226) and 44.6 kg/m² (36-53). The percentage of patients who completed the follow-up at 5, 10 and 15 postoperative years (poy) was 85%, 77.2% and 75.8% respectively. The banding was removed in the 28.2%, 35% and 36.4% of patients respectively at 5, 10 and 15-poy. In the 15.9% of patients we recorded a port complication. A conversion to other procedures was performed in the 22.9% of patients. The mean preoperative body mass index (BMI) dropped from 44.6 kg/m² to 36.7 kg/m², 36.3 kg/m², and 34.7 kg/m² respectively at 5, 10 and 15-poy. The mean percentage of excess weight loss (%EWL) at 5, 10 and 15-poy was 39.7%, 39.5%, and 36.1% respectively. The LAGB failure rate was 45.8% and 48.5% at 5 and 10-poy. **Conclusion** Despite the encouraging short-term results, only one third of LAGB patients maintains an acceptable weight loss at 10-poy. With a long-term failure rate of about 50%, the sustainability of LAGB in the treatment of a chronic disease such as obesity, it is seriously questioned.

A104

PREDICTORS OF WEIGHT REGAIN IN PATIENTS WHO UNDERWENT ROUX-EN Y GASTRIC BYPASS SURGERY (RYGB)

Prapimporn C Shantavasinkul MD[1], Durham, NC, United States; Philip Omotosho MD[2;] Leonor Corsino MD[3], Durham, NC; Dana Portenier MD[2], Durham, NC; Alfonso Torquati MD[2], Durham, NC
Division of Nutrition and Biochemical Medicine, Department of Medicine, Faculty of Medicine, Ramathibodi Hospital, Mahidol University, Bangkok, Thailand[1] Metabolic and Weight Loss Surgery, Department of Surgery, Duke University Medical Center, Durham, NC, USA[2] Division of Endocrinology, Metabolism, and Nutrition, Duke University Medical Center, Durham, NC, USA.[3]

Background: Roux-en Y gastric bypass (RYGB) is a highly effective treatment for obesity and results in long-term weight loss and resolution of co-morbidities. However, weight regain may occur as soon as 1-2 years after surgery. This retrospective study aimed to investigate the prevalence of weight regain and possible pre-operative predictors of this phenomenon following RYGB.
Methods: A total of 1,426 obese patients (15.8% male), who underwent RYGB during January 2000 to 2012 and had at least a 2-year follow-up were reviewed. We included only patients who were initially successful, having achieved at least 50% excess weight lost (EWL) at 1 year postoperatively. Then they were categorized into either the weight regain group

(WR) or sustained weight loss (SWL) group, based upon whether their weight regain was ≥ 15% of their 1-year weight.
Results: Weight regain was observed in 244 patients (17.1%). Preoperative body mass index (BMI) was similar between groups (WR 47.7±6.9 kg/m^2 vs SWL 47.7+6.8 kg/m^2, P 0.97). However, current BMI was significantly higher (WR 37.2±6.3 kg/m^2 vs SWL 30.7±5.4 kg/m^2, p<0.001) and %EWL was lower in WR (WR 47.4±22.5% vs SWL 77.0±20.5%, p<0.001). Time since RYGB was significantly longer in WR (WR 5.9±2.4 years vs SWL 3.3±1.8 years, p<0.001, range 2-12 years). Interestingly, patients with WR were significantly younger (WR; 42.3±9.8years vs SWL; 45.7±10.8years, P<0.001), had less number of co-morbidities (WR; 0.8±0.8 vs SWL; 1.1±0.9, p<0.001) and were less likely to have T2DM with insulin dependence preoperatively (% of patients with insulin-dependent T2DM in SWL 8.9% vs 4.5% in WR, p<0.05). Multivariate logistic regression revealed that younger age and longer duration after RYGB were the significant predictors of weight regain.
Conclusions: Although RYGB is a highly effective therapy and improves multiple co-morbidities, weight regain is not uncommon. The present study confirmed that a longer interval following RYGB was associated with weight regain. Surprisingly, older patients, multiple comorbidities, pre-operative insulin dependent T2DM were associated with sustained weight loss. The findings of this study underscore the complexity of the mechanisms of weight loss and regain following RYGB. In patients with T2DM, these mechanisms might be associated with improvement in insulin resistance observed after RYGB.

A156 - VIDEO
OUT OF SIGHT, BUT NOT OUT OF MIND: EXCLUDED STOMACH PATHOLOGY AFTER ROUX-EN-Y GASTRIC BYPASS
Andrew Van Osdol MD[1], La Crosse, WI; Matthew Baker MD[2], La Crosse, WI, USA; Shanu Kothari MD, FACS[2], La Crosse, WI, United States
Gundersen Medical Foundation[1] Gundersen Health System[2]

Background: Pathology of the excluded stomach after Roux-en-Y gastric bypass (RYGB) is rare; moreover, it is often difficult to diagnose due to limited access to the excluded stomach, and presents late in the disease course. Accordingly, it is important to maintain a broad differential diagnosis in any patient with abdominal pathology and a previous RYGB. We present the management of two patients who presented with pathology of the excluded stomach.
Case Summary: Case 1 was a 59-year-old male who presented 12 years after RYGB with sudden onset abdominal pain. He denied nausea, emesis, or changes in bowel function. Physical exam was significant for abdominal tenderness without peritonitis. Computed tomography (CT) imaging demonstrated fluid and air around the duodenum in the sub-hepatic space. The patient underwent diagnostic laparoscopy with adhesiolysis and a perforated duodenal ulcer was identified. Because the omentum would not easily reach the perforated area, it was successfully repaired with a modified Graham patch utilizing the falciform ligament. Postoperatively, he was treated with antibiotics and discharged home on postoperative day 2. Case 2 was a 71-year-old female who had undergone open RYGB at another hospital 30 years prior to presenting to our emergency department. She presented with abdominal pain and nausea without emesis. CT imaging demonstrated significantly dilated proximal colon and likely an obstruction in the mid transverse colon. Colonoscopy was performed which showed edema and possible torsion of the mid transverse colon but no intraluminal mass. Decompression was performed with immediate resolution of symptoms; however, symptoms returned on post-procedure day 3. She was taken to the operating room for laparoscopic exploration revealing dense adhesions between the excluded stomach and transverse colon. On-table transgastric endscopy of the excluded stomach and duodenum showed antral narrowing but normal mucosa. Endoscopic biopsies returned as normal gastric mucosa after frozen section analysis. Antral serosal biopsies were taken and sent for pathologic analysis, which indicated gastric signet ring cell

adenocarcinoma. The patient was transferred to her home institution and died 9 months later. **Conclusions:** Limited access to the excluded stomach after RYGB can present a challenge in identifying and managing pathology. A high index of suspicion is needed to avoid the devastating consequences of delayed diagnosis.

Paper Session II: TOP PAPERS AND VIDEOS, cont. 1:30pm -3:30pm

A105

INTRAGASTRIC BALLOON: A BRAZILIAN MULTICENTRIC STUDY OF 3545 CASES

Bruno Sander MD[1], Belo Horizonte, Minas Gerais, Brazil; MANOEL GALVAO NETO MD[2], SAO PAULO, SAO PAULO; Ricardo Fittipaldi-Fernandez MD[3], Rio de Janeiro, RJ; Giorgio Baretta PhD[4], CURITIBA, PARANA, USA; Jimi Scarparo MD[5], Sao Paulo, SP; Cristina Diestel PhD[3], Rio de Janeiro, RJ
Clínica Sander[1] Gastro Obeso Center[2] Endogastro Med Service[3] EndoBatel Endoscopy Service[4] Clínica Balão BIB[5]

Introduction: The intragastric balloon has been used for more than 10 years in Brazil as an endoscopic method for assisting weight loss, and alongside multidisciplinary team support, the results have been satisfactory.
Objective: To assess the efficacy and complications of the weight loss with IGB in patients seen at the 3 private centers.
Methods: A total of 3545 patients with IGB implanted from 2009 to 2014 were analyzed from a prospective fed databank. A liquid filled IGB with a volume in-between 620 to 700 ml was used. Initial BMI started at 27 kg/m2 (as approved by Brazilian health authorities) and were followed up by a multidisciplinary team during implant. IGB maximum period implant was 08 months. Statistical analysiswas performed according to sex and degree of excess weight (overweight and grade I, II and III). Data were analyzed using Student t-test, and andTukey post-test. The level of significance was set at $p<0.05$.
Results: 205 patients (5,78%) were excluded from the analysis: 110 (3.1%) due to early removal, 39 (1.1%) due fail on weight loss or weight gain, 56 (2.2%) due to incomplete data. There were also spontaneous hyperinflation on 0.34% (n=12) and balloon spontaneous deflation or leakage in 0,62% (n=22). Incidence of complications not leading to removal were 5,95% Complications other happened as fungal contamination in in 4,54% (n=161); WernickKorsakoff syndrome 0,05% (n=2) and pregnancy during implant period on 0.39% (n=14). The incidence of complications with IGB removal was 0,028% (n=1): gastric perforation and upper digestive bleeding. On the 3340 remaining patients, 2271 (68%) were women and 1069 (32%) were men. Mean age was 35.72 years. The patients showed a significant weight loss, with a significantly lower final BMI (28.58±7,14 kg/m2; range: 18.69-37) than the initial BMI (34.83±5.13 kg/m2; range: 27-76.12) Percent EWL was higher in the overweight group (142,69%EWL), followed by obesities grades I (78.72%), II (61.51%) and III (47.13%) sequentially.
Conclusion: The intragastric balloon has been established as an valid endoscopic therapeutic option for weight loss, especially in patients with overweight and obesity grades I and II.
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obesity. Surg Obes Relat Dis. 2013;9:290–5. [PubMed] 5. Giuricin M, Nagliati C, Palmisano S, Simeth C, Urban F, Buri L, et al. Short-and long-term efficacy of intragastric air-filled balloon (Heliosphere® BAG) among obese patients. Obes Surg. 2012;22:1686–9. [PubMed]

A106

BARIATRIC SURGERY REDUCES NATIONAL HEALTHCARE UTILIZATION IN THE LONG-TERM

John Morton MD[1], Stanford, CA; Stacy Brethauer MD[2], Cleveland, OH, USA; Jaime Ponce MD[3], Chattanooga, TN, USA; Raul Rosenthal MD[4], Weston, Fl; Ninh Nguyen MD[5], Orange, CA, USA
Stanford School of Medicine[1] Cleveland Clinic[2] Hamilton Medical Center[3] Cleveland Clinic Florida[4] University of California, Irvine[5]

Background: Clinical effectiveness of bariatric surgery in treatment of morbid obesity and associated comorbidities has been proven in many studies. Access and coverage remain key barriers to this therapy. Few longitudinal studies have been done on recoupment of the cost of surgery and productivity benefit.
Methods: We used the Truven Health Analytics Commercial Claims (MarketScan) database incorporating at least 15 million enrollees annually to identify beneficiaries who underwent laparoscopic Roux-en-Y gastric bypass (RYGB) in 2008. We required individuals to have continuous enrolment 4 years pre-surgery and 4 years post-surgery. Cases with malignancy, colon disease, HIV, ESRD and pregnancy were excluded. A cohort of non-surgical beneficiaries were identified and matched to bariatric cases on age (± 1 year), sex, geographic region, presence of diabetes, hypertension, hyperlipidemia and morbid obesity in the year prior to surgery. Expected post surgery costs were modeled based on the costs of the non-surgical cohort. A comparison of the expected and actual costs was used to determine the cost benefit of surgery.
Results: A total of 823 RYGB cases were identified. 786 were matched to the non-surgical cohort. The mean cost of surgery was $25,238. In the first year post surgery, the expected costs were $10,651 whereas the actual costs were $9,529 (12% reduction. Likewise, in the 2nd, 3rd and 4th years, the actual costs were lower than expected by 28%, 37%, and 35%, respectively. Cumulatively, about 38% of the costs of surgery ($7,592) were saved in the 4 years after surgery. In the diabetic subpopulation, the actual costs were 23%, 49%, 61%, 69% lower in the first four years post surgery, respectively. Cumulatively, 78% of the surgery costs ($22,609) were saved.
Conclusion: Based on this rigorously matched analysis, about 40% of the surgery costs were saved in the first 4 years after bariatric surgery. In the diabetic subpopulation, the savings was nearly 80%. Further long term follow up research is needed to better quantify the economic benefit of bariatric surgery. Clinical, economic and quality of life outcomes associated with bariatric surgery make it a sustainable and necessary therapy.

A107

SHORT-TERM OUTCOMES FOLLOWING CONVERSION OF ADJUSTABLE GASTRIC BANDING

Steven Poplawski MD[1], Ypsilanti, MI; Paul Kemmeter MD, FACS[2], Grand Rapids, MI, USA; Arthur Carlin MD[3], Detroit, MI; Matthew Weiner MD[4], Commerce, MI, USA; Oliver Varban MD, FACS[5], Ann Arbor, MI, United States; Amir Ghaferi MD[5], Ann Arbor, MI; Ruth Cassidy MS[5], Ann Arbor, MI; Jonathan Finks MD[6], 1500 E Medical Center Drv, MI, USA
Barix Clinics[1] Grand Health Partners[2] Henry Ford Hospital[3] Michigan Weight Management Institute[4] University of Michigan[5] University of Michigan Health System[6]

Background: The prevalence of long-term complications and adverse gastrointestinal symptoms following adjustable gastric banding (AGB), combined with disappointing weight loss, have led to a rising number of revisional procedures. Yet the outcomes of these revisional operations remain unclear. The goal of this study was to examine the safety of these procedures, comparing rates of 30-day outcomes between primary and revisional procedures.
Study Design: We analyzed data from the Michigan Bariatric Surgery Collaborative for

patients undergoing primary bariatric procedures and those undergoing conversion of a previously placed adjustable gastric band between June 2006 and September 2014. We used multivariable logistic regression to compare outcomes between revisional and primary procedures, after adjusting for patient characteristics. We excluded patients with more than one prior bariatric procedure and those whose cases were done on an urgent or emergent basis.

Results: Primary bariatric operations during the study period included 22,734 RYGB, 14,467 SG, 10,461 AGB, and 527 DS. Among 1197 patients undergoing revisional surgery after AGB, 440 (37%) were converted to gastric bypass (RYGB), 549 (46%) to sleeve gastrectomy (SG), 182 (15%) to another AGB and 26 (2%) to biliopancreatic diversion with duodenal switch (DS). Among revisional procedures, 834 (70%) were done for failed weight loss, with 363 (30%) done for complications/ adverse symptoms. In addition, 472 (39%) were done as a 2-stage procedure, while in 725 (61%) band removal and conversion were done during the same operation. Compared to patients undergoing a primary bariatric procedure, those undergoing band conversion were older (46 vs. 48 yrs., $p<0.0001$) with lower BMI (48 vs. 43, $p<0.0001$) and fewer comorbid conditions (4.5 vs. 4.1, $p<0.0001$). When compared to primary RYGB procedures, AGB-to-RYGB conversions had significantly higher adjusted rates (%) of any complication (11.1 vs. 16.3, $p=0.004$) and serious complications (3.3 vs 6.3, $p=0.0006$). A similar discrepancy in rates of any and serious complications was found when comparing primary SG to AGB-to-SG (5.8 vs 11.9, $p<0.0001$ and 1.9 vs 5.3, $p<0.0001$) and primary AGB to AGB-to-AGB (2.5 vs 8.4, $p<0.0001$ and 0.9 vs 2.6, $p=0.0388$) but were not significant when comparing primary DS to AGB-to-DS (14.9 vs 12.7, $p=0.1737$ and 6.3 vs. 7.5, $p=0.7884$). Equivalent comparisons of primary and revisional procedures revealed no differences in rates of ED visits or readmissions with AGB-to-RYGB (9.4 vs. 10.2, $p=0.5317$ and 5.4 vs. 6.8, $p=0.1702$), AGB-to-SG (7.7 vs 8.3, $p=0.6220$ and 4.2 vs 5.7, $p=0.0965$) or AGB-to-DS (16.2 vs. 6.8, $p=0.1737$) and 8.6 vs. 3.7, $p=0.3781$). When compared to primary AGB, conversion of AGB-to-AGB had significantly higher rate of readmission (2.1 vs 4.7, $p=0.0325$) but no significant difference in ED visits (3.7 vs. 3.9, $p=0.8837$).

Conclusions: When compared to primary bariatric procedures, conversions of adjustable gastric band are associated with significantly higher rates of adverse events, although this does not seem to translate to significant differences in rates of ED visits or readmissions. Further investigation into the long-term effectiveness of these revisional procedures is warranted.

A157 - VIDEO

AN ODYSSEY OF COMPLICATIONS FROM BAND, TO SLEEVE, TO BYPASS; DEFINITIVE LAPAROSCOPIC COMPLETION GASTRECTOMY WITH DISTAL ESOPHAGECTOMY AND ESOPHAGOJEJUNOSTOMY FOR PERSISTENT LEAK

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Introduction: Anastomotic leaks are uncommon yet potentially devastating complications after bariatric surgery. While the initial management includes resuscitation and sepsis control, the definitive management often requires endoscopic or surgical interventions. Surgical revision of the initial surgery may be necessary for chronic, persistent leaks. We present the definitive surgical management of a band converted to sleeve gastrectomy and resultant leak, with attempted endoluminal therapies, converted to Roux-en-Y gastric bypass with persistent leak. Ultimately successful treatment was obtained by laparoscopic completion gastrectomy with distal esophagectomy and Roux-en-Y esophagojejunostomy reconstruction.

Patients and Methods: The patient is a 45-year-old female who underwent laparoscopic adustable gastric banding. Due to her failed weight loss, she underwent band removal and conversion to a sleeve gastrectomy 4 years later,

which resulted in a leak at GE junction. She underwent attempted endoluminal treatments, including stent placement, bio-adhesive treatment, and over-the-scope-clip therapy, none of which were successful. Sleeve gastrectomy was converted to a Roux-en Y gastric bypass (RYGB) as an attempt to alleviate the distal obstruction at the incisura, and allow for closure of the leak. However, this failed and the persistent leak at the GE junction led to a gastro-pleural fistula. She underwent decortication through left thoracotomy and left lower lobe resection. She was then referred to our institution for further management of this persistent leak. After addressing nutritional deficiencies, the patient underwent laparoscopic completion gastrectomy with distal esophagectomy and Roux en Y esophagojejunostomy reconstruction, in addition to debridement of the abdominal and mediastinal abscesses.

Results: The case was performed under general anesthesia and in supine position. A total of five trocars were utilized, three 5 mm, one 12mm and one 15 mm. After dissection of dense adhesion from previous surgery and abscess with persistent leak, the Roux limb was completely mobilized and the upper-abdominal abscess cavity was debrided. After identification of the right crus, the distal esophagus was encircled with Penrose drain and the Roux limb was disconnected with a linear stapler. An upper endoscope was introduced to identify the leak. Once identified along the left side of the esophagus, the scope was able to be passed into the mediastinum and peritoneal cavities, under both endoscopic and laparoscopic vision. Previously placed over-the-scope clip was identified and retrieved. Further mobilization of the middle esophagus in the mediastinum was performed. Then, the distal esophagus was transected in clean tissues. The Roux limb was brought up to the distal esophagus for esophagojejunostomy. Esophagojejunostomy was completed with a 25mm EEA circular stapler. A linear stapler was used to close the candy cane. Medial and lateral sutures were placed at the anastomosis and these were sewn to the right and left crus respectively. Percutaneous endoscopic jejunostomy was placed into the Roux limb for feeding access. The procedure took 2 hours and 40 minutes. Estimated blood loss was 100ml. The postoperative course was uncomplicated. She was discharged home with tube feeding on the postoperative day # 5, and subsequently diet was advanced as an outpatient.

Conclusion: In this video, we have demonstrated the complex surgical revision of a leak after through the gamut of bariatric surgery: band to sleeve, failed endoluminal therapy and conversion of sleeve to RYGB. Durable success was achieved by a completion gastrectomy, distal esophagectomy with Roux-en-Y Esophagojejunostomy reconstruction.

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FACTORS RELATED TO IMPROVEMENT IN JOINT PAIN AND PHYSICAL FUNCTION FOLLOWING BARIATRIC SURGERY

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Background: Debilitating joint pain and walking limitations are common among bariatric surgery candidates. Previous studies have shown dramatic short-term improvements following bariatric surgery but have not investigated the durability or variability in response. Data from the Longitudinal Assessment of Bariatric Surgery-2 (LABS-2) showed that despite significant improvements in several measures of pain and walking capacity from pre-surgery to 3 years post-surgery, at 3 years post-surgery approximately one in five participants reported narcotic pain medication use, one-third had an objectively determined mobility deficit, and

there was large variation in several measures of pain, disability and physical function. This study aimed to identify factors associated with improvement in pain and physical function through three years of follow-up.
Methods: Among the 2458 participants in LABS-2, the 2221 (90%) with baseline and at least one follow-up assessment were included in this analysis sample. The assessments included a timed 400 meter walk at usual pace and several questionnaires, including the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) and the Short Form Health Survey (SF-36), to assess pain, related medication use, walking capacity, and potential confounders, pre- and annually post-surgery. A mobility deficit was defined as inability to complete the walk in 7 minutes, representative of a cardiorespiratory fitness level of <12 ml oxygen/kg/min. Generalized linear mixed models were used to identify factors related to stopping prescription narcotic pain medication use and remission of a mobility deficit, among those with pre-surgery narcotic pain medication use (n=353) and mobility deficit (n=1033), respectively. Linear mixed models were used to identify factors related to improved hip and knee functionality and pain among those with severe pain or disability pre-surgery (n=633 hip, n=500 knee), and improved physical function (SF-36 score) among the entire sample, controlling for baseline status. Independent variables included in all models are: sex, race, baseline age, household income, body mass index (BMI), smoking status, depressive symptoms, site, surgical procedure, and pre- to post-surgery change in depressive symptoms and percent weight change. Baseline and pre- to post-surgery change in bodily pain were also included as independent variables in models of remission of mobility deficit and change in physical function. Status (i.e., current vs. no history vs. remitted) of select comorbidities (history of stroke, ischemic heart disease, diabetes, asthma, sleep apnea, venous edema with ulceration) were also considered and retained if statistically significant ($p<.05$).
Results: Participants were 79% female, 87% white, with median age 47 years and median BMI 46 kg/m². The majority (70%) underwent Roux-en-Y gastric bypass, a quarter (25%) laparoscopic adjustable gastric band, and 5% other procedures. Three years after surgery, 54% (95%CI: 50-58) of participants with pre-surgery mobility deficit had remitted, and 46% (95%CI: 40-52) with pre-surgery prescription narcotic pain medication use had stopped. Among those with severe knee and hip pain or disability pre-surgery, average knee and hip WOMAC scores at three years were 23 (95%CI: 25-21) and 24 (95%CI: 26-22) points better, respectively. SF-36 physical function score improved by an average of 11 (95%CI: 11-12) points. Models of each outcome are shown in table 1. Older age, income below $25,000/year, higher BMI, greater bodily pain and more depressive symptoms pre-surgery were negatively related to remission or improvement of several outcomes, as were worsening bodily pain, more depressive symptoms and less weight loss following surgery. Having diabetes, ischemic heart disease, asthma and venous edema with ulceration post-surgery were also negatively related to improvements as indicated in table 1.
Conclusion: The study identified several sociodemographic characteristics and indicators of health status that are independently related to improvement in pain and physical function among adults who undergo bariatric surgery. Age and income were the only factors under investigation that were independently related to stopping narcotic medication use. Percentage of weight loss and improvement in depressive symptoms were independently related to all other outcomes.

A110

COVERING BARIATRIC SURGERY HAS MINIMAL EFFECT ON INSURANCE PREMIUM COSTS WITHIN THE AFFORDABLE CARE ACT

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Background: Currently, of the 51 State Health Exchanges operating under the Affordable Care Act, only 23 include bariatric surgery coverage. In contrast, Medicare and the vast

majority of Medicaid, federal and state employee plans provide coverage for bariatric surgery. The lack of coverage in the 28 State Exchanges has a discriminatory and detrimental impact on millions of Americans participating in State Exchanges that do not provide bariatric surgery coverage. We examined three State Exchanges in which a portion of their plans provided coverage for bariatric surgery to determine if bariatric surgery coverage significantly impacts premium costs.
Methods: Data was obtained from Avalere PlanScape®, which performed an analysis of the 2015 State Exchange plan features using information from Centers for Medicare & Medicaid Services' (CMS) Plan Attributes and Benefits and Cost Sharing public use files (PUF). Only three states (Oklahoma, Oregon, and Virginia) in the analysis have one or more rating regions in which a portion of the plans cover bariatric surgery. Narrowing the analysis to each geographic rating region allows for a more direct comparison of the effect of bariatric surgery coverage on premiums and cost sharing.
Results: In Oklahoma, the average monthly premiums for each metal level are higher for plans covering bariatric surgery: Bronze +$45, Silver +$1, Gold +$42. The average difference in premiums was $29.33. In Oregon, the average monthly premiums for each metal level are higher for plans covering bariatric surgery: Bronze +$32, Silver +$18, Gold +$24. The average difference in premiums was $24.67. However, in Virginia, the average monthly premiums are lower for each metal level for plans covering bariatric surgery: Bronze -$19, Silver -$2, Gold -$21. The average difference in premiums was $14. Monthly premiums for plans covering bariatric surgery range from 6% lower to 15% higher than premiums for plans not covering bariatric surgery in the same geographic rating region.
Conclusions: Across all three states in the sample, the average monthly premiums do not differ substantially on the basis of whether the State Exchange plans cover bariatric surgery. Premium costs in plans that do not cover bariatric surgery were found to be both lower and higher than plans that cover bariatric surgery.

Paper Session III: COMPARATIVE/RESEARCH 4:15pm-6:00pm

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RECENT NATIONAL TRENDS IN THE SURGICAL TREATMENT OF OBESITY: SLEEVE GASTRECTOMY DOMINATES

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Background: Surgical treatment of obesity has evolved over the last two decades. The most recent change is acceptance of sleeve gastrectomy (SG) as a primary bariatric procedure. As the number of SG has increased, Roux-en-Y gastric bypass (RYGB) and adjustable gastric banding (AGB) procedures have decreased and this shift has implications for bariatric surgery training and outcomes. This study aimed to analyze changes in utilization of bariatric procedures and patient characteristics in the US since 2010.
Method: The American College of Surgeons National Surgical Quality Improvement Program (NSQIP) Database was analyzed to identify patients aged ≥ 18 years with BMI ≥ 35 kg/m^2 who underwent primary bariatric surgery from 2010 to 2013. Frequency of surgical procedures and key patient characteristics during these 4 years were analyzed.
Results: 71,971 patients (age: 44.7 ± 11.7 year, BMI: 46.3 ± 8.0 kg/m^2, 78.1% female) were studied. In 2010, RYGB, SG, and AGB comprised 58.4%, 9.3%, and 28.8% of the procedures in 2010 which changed to 43.8%, 49%, and 6% in 2013, respectively. There was

no significant change in age or gender during the study period. The age of patients with SG did not change over the time but the proportion of females undergoing SG increased from 73.2% to 79.2% ($p<0.001$). BMI of patients with RYGB slightly increased ($p<0.001$) while BMI of SG patients decreased significantly (47.8 to 45.9 kg/m^2, $p<0.001$). The proportion of patients with BMI>50 kg/m^2 decreased among SG patients (32% to 23.6%, $p=0.001$) but increased in RYGB (27.4% to 28.8%, $p=0.001$). While the overall diabetes rate was stale over the time period of the study (average 27.5%), the proportion of diabetic patients increased slightly among RYGB group (30.4% to 33.3%, $p<0.001$) and decreased in SG patients (26.6% to 22.5%, $p=0.001$). The proportion of patients with hypertension (requiring medication) remained stable in RYGB and decreased in SG (56.2% to 48.4%, $p<0.001$).

Conclusion: From 2010 to 2013 SG became the most common bariatric procedure in the US overtaking both RYGB and AGB. There was a shift of more female patients and those with lower BMI to SG. The percentage of patients with diabetes or hypertension increased or remained stable in patients who had RYGB but decreased in patients who had SG.

A112

COMPARATIVE RESOLUTION OF COMORBID CONDITIONS AFTER DIFFERENT BARIATRIC OPERATIONS. A PROPENSITY MATCHED STUDY OF PATIENTS UNDERGOING BARIATRIC SURGERY IN THE UNITED STATES

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Background: Obesity may be successfully treated by different primary bariatric operations including the laparoscopic adjustable gastric banding (LAGB), the sleeve gastrectomy (SG), the Roux-en-Y gastric bypass (RYGB), and the biliopancreatic diversion with duodenal switch (BPD/DS). There is no good data to optimize a bariatric operation for a particular patient. Comparative resolution of baseline comorbidities after common bariatric operations may provide such guidance. The intent of this study is to report resolution of baseline comorbid conditions and complications after matching cohorts using propensity matched analysis.

Methods: Data from BOLD from June 2007 to September 2011 was obtained with ASMBS approval for patients consented for research, > 18 years old, undergoing the above operations with no previous bariatric operation or revision. Weight loss and resolution of comorbidity (use of no medications or device for treatment) were reported at 1-year and adverse and serious adverse events at 30 days and 1-year. Baseline characteristics were adjusted using propensity scores with inverse probability weighting. Multivariate linear and logistic regressions estimated differences and odds ratios respectively for each pairwise surgical procedure comparison. Bonferroni test was used to correct for multiple pairwise comparisons.

Results: Among 130,796 subjects, there were LAGB (57,094), SG (5942), RYGB (66,324) and DS (1436). Patients undergoing higher complexity operations had higher baseline BMI and comorbidities. Using LAGB as control, adjusted weight loss at 1-year was higher for the more complex operations (OR for SG, 6.35; RYGB, 8.63; and DS, 12.65). Serious adverse events were 3.2, 4.9, and 17 times higher for SG, RYGB and DS, respectively. However, 1-year mortality after SG, RYGB and DS were not significantly different. Resolution of hypertension (HTN) and Diabetes (DM) was better after the DS than after RYGB (OR 1.36 and 1.47), not different for sleep apnea (OSAS) and lower (0.78) for reflux (GERD).

Conclusion: The RYGB was best for GERD resolution and the DS for weight loss and DM and HTN resolution. The adjusted 1-year mortality for DS, RYGB and SG were similar despite higher adverse events.

A113

THE IMPACT OF CARE COACHING ON HOSPITAL LENGTH OF STAY,

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READMISSION RATES AND OVERALL PATIENT SATISFACTION POST-BARIATRIC SURGERY.

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BACKGROUND: Introduction of the Patient Protection and Affordable Care Act has mandated a change in the way we deliver healthcare. It represents a paradigm shift from a volume-based to a value-based health care delivery model wherein improving the patient experience of care, one of three key features, is linked to reimbursement. Bariatric surgery is well established as an effective means of treating obesity. While improvements in surgical technique have resulted in mortality rates similar to that of cholecystectomies, 30-day readmission rates have not followed similar trends. To address factors related to both hospital length of stay and readmissions, the Bariatric Care Coaching Program was developed and implemented on July 1 2014. It was created in response to a perceived need for better communication with patients upon discharge from hospital, and prior to being seen at their first post-op visit. The lack of communication was apparent based on the number of patient phone calls to clinic, readmissions to hospital, or in discussion with patients at their first post-op visit. Therefore the aim of this study was to evaluate the impact of the Care Coaching Program on hospital length of stay, readmission rates and overall patient satisfaction.
METHODS: From January to December 2014 all patients who had primary bariatric surgery (i.e. gastric bypass [RYGB], gastric band [GB] or gastric sleeve [GS]) were included in the study. The control group included patients who underwent surgery from January 1 to June 30, 2014, before implementation of the Care Coaching Program. The experimental group was comprised of patients who received care coaching from July 1 to December 31 2014. Baseline demographic information, immediate post-operative complications impacted by care coaching (i.e. nausea/vomiting, dehydration, pain, infection, oxygen requirements), hospital length of stay, number of phone calls to the clinic after discharge, and hospital readmissions rates prior to the first post-op clinic visit were collected from the medical record. Patient satisfaction scores, calculated from responses of patients in this study, were collected from the Hospital Consumer Assessment of Healthcare Providers and Systems Survey mailed to patients within 2 weeks of discharge. Wilcoxon rank sum tests or Student's t-tests and chi-square or Fisher's exact tests were used for continuous and categorical variables, respectively.
RESULTS: A total of 306 patients who underwent a primary bariatric procedure between January 1 and December 31 2014 were included in the study. The majority of patients were female (77.45%) and mean age was 45.34 $\pm$ 10.52 years. One hundred and seventeen patients had RYGB (38.24%), 177 underwent SG (57.84%) and 12 patients had a GB (3.92%). Comparison between patients exposed to care coaching (experimental group) and those that did not (control group) demonstrated no differences in gender (female: 77.71% and 77.18%; male: 22.29% and 22.82% [p=0.89]), age (44.92 $\pm$ 10.34 yrs and 45.79 $\pm$ 10.72 yrs. [p=0.47]) pre-operative BMI (48.27$\pm$ 8.09 kg/m^2 and 48.77$\pm$ 8.27 kg/m^2 [p=0.58]) or type of surgery performed (RYGB: 38.85% and 37.58%; SG: 56.69% and 59.06%; GB: 4.46% and 3.36% [p=0.88]). Comparison of immediate post-operative complications between the care coached and control groups demonstrated a statistically significant difference in the proportion of patients with intractable nausea/vomiting in the control group (18.12% versus 10.19% [p=0.04]). However the proportion of patients with intractable pain (14.01% and 21.48% [p=0.08]), dehydration (18.47% and 18.79% [p=0.92]), increased oxygen requirements (8.285 and 14.09% [p=0.10]), and urinary tract or superficial site infections (UTI: 0% and 0.67%; SSI: 0% and 1.34% [p=0.11]) were similar between the care coached and control groups. Finally, there was

no difference in the length of stay (2.27 ± 0.99 days and 2.46 ± 1.26 days [p=0.14]), number of patients readmitted to hospital, prior to their first clinic visit (3.82% and 4.70% [p=0.78]), or the proportion of patients who called the clinic between their discharge date and prior to their first clinic visit (41.40% and 36.6% [p=0.07832]) between the care coached and control groups. Interestingly, comparison of HCAHPS scores from January to June 2014 (control group) and July to December 2014 (care coached group) demonstrated an improvement in patients' understanding of discharge information (99th versus 64th percentile), likelihood of recommending the hospital (83rd versus 71st percentile), and overall hospital rating (91st versus 81st percentile) in the care coached versus control group.

CONCLUSION: The Bariatric Care Coaching Program was developed in response to a need for better communication between patients and caregivers. In our initial experience care coaching had the greatest impact on patient satisfaction and on patient reporting less intractable nausea and vomiting before their first post-op visit. However it did not have a significant effect on length of stay or early readmissions. Care coaching in our experience has been an important new adjunct to the care of our bariatric inpatients but further studies need to be done to evaluate how to use this program to reduce length of stay and readmission rates.

A114

SURGICAL SKILL AND BARIATRIC SURGERY: DOES SKILL IN ONE PROCEDURE PREDICT OUTCOMES FOR ANOTHER?

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Objective: To explore whether video ratings of a surgeon's technical skill with laparoscopic gastric bypass can predict outcomes with laparoscopic sleeve gastrectomy.

Background: Recent data establishes a strong link between peer video ratings of surgical skill and clinical outcomes with laparoscopic gastric bypass. Whether skill for one bariatric procedure can predict outcomes for another, related procedure is unknown.

Methods: We studied surgeons from the Michigan Bariatric Surgery Collaborative (MBSC) who participated in a technical skills rating initiative. Twenty surgeons submitted videos of a standard laparoscopic gastric bypass procedure, which was blindly rated by 10 or more peers using a modified version of the Objective Structured Assessment of Technical Skills (OSATS). Surgeons were divided into quartiles for skill in performing gastric bypass and their outcomes within 30 days after sleeve gastrectomy were compared. Multivariate logistic regression analysis was utilized to adjust for patient risk factors.

Results: Surgeons with skill ratings in the top (n=5), middle (n=10, middle two combined), and bottom (n=5) quartiles for laparoscopic gastric bypass had similar rates of surgical and medical complications following laparoscopic sleeve gastrectomy (top 5.7%, middle 6.4%, bottom 5.5%, p=0.13) (Figure 1). Furthermore, surgeon skill ratings did not correlate with other clinical outcomes including reoperation, readmission and emergency department visits. Top rated surgeons had significantly faster operating room times for sleeve gastrectomy (top 76 min, middle 90 min, bottom 88 min; p<0.001) and a higher annual volume of bariatric cases per year (top 240, middle 147, bottom 105; p=0.001).

Conclusions: Video ratings of surgical skill with laparoscopic gastric bypass do not predict outcomes with laparoscopic sleeve gastrectomy. Peer ratings of surgical skill with one procedure may not apply to other related procedures and each operation may require independent evaluation of surgical technical proficiency.

A115

COMPARATIVE STUDY OF EPIGENETICS IN ADIPOSE TISSUE AND LIVER FROM DIABETIC AND NON-DIABETIC OBESE PATIENTS: A DIFFERENTIAL DNA METHYLATION ANALYSIS IN A MEXICAN MESTIZO

ASMBS

POPULATION.

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Introduction. Obesity is considered a major risk factor for developing type 2 diabetes mellitus (T2DM). Both obesity and T2DM are complex diseases, whose etiology is influenced by the interaction of genetic and environmental factors. Adipose tissue is considered an active endocrine organ that secretes several humoral factors (adipokines). Recent studies have shown that obesity leads a chronic local inflammation inducing the production of proinflammatory cytokines and contributing to the low-level systemic inflammation, which has been linked to the develop of insulin resistance in other tissues (e.g. liver) and metabolic syndrome-associated chronic pathologies. However, only a proportion of obese patients develop T2DM and despite the large genetic studies on diabetes and obesity, the molecular mechanism to explain the differences between obese diabetic patients and those that do not develop TD2M, is still unclear. Recent reports point to the role of epigenetic mechanisms in the development of metabolic disorders, especially the methylation of DNA, which plays an important role in the regulation of gene expression and chromatin architecture. It has been reported an alteration either in the global DNA methylation in whole blood of diabetic patients or in specific genes related to glucose metabolism (*GLUT4* and *INS*). However there are few data exploring the epigenetic status of tissues directly involved in the development of metabolic diseases.
Material and Methods. In 50 obese patients submitted to bariatric surgery (24 with T2DM and 26 without), a total of 108 tissue samples were obtained during surgery: Visceral fat (n=18), subcutaneous fat (n=30), liver (n=16) and peripheral blood (n=44). All patients were Mexicans, with similar baseline characteristics between groups. (Table 1). Global profiles of DNA methylation were analyzed using Illumina Infinium HumanMethylation27 BeadChip, this microarray interrogates 14 000 genes in the same experiment. To obtain enriched biological and molecular terms we used the DAVID open access database tools. The primary objective was to identify whether alterations in DNA methylation profiles in adipose tissues, liver and peripheral blood, are associated with the etiopathogenesis of T2DM in obese individuals.
Results. Similar initial demographic, antromometric and clinical characteristics between groups were observed (Table 1). Analysis of methylation profiles in liver, visceral, subcutaneous fat tissue and peripheral blood showed several loci with differential methylation between obese non-T2DM and obese-T2DM. Comparative analysis of the DNA methylation patterns showed a very high correlation between visceral and subcutaneous adipose tissues. With the differential methylation pattern we can classify the obese with and without T2DM. The major differences in DNA methylation were found in visceral adipose tissue (Fig 1A-D), highlighting the crucial role of visceral obesity in the development of T2DM. Gene-annotation enrichment analysis by DAVID, displayed the major metabolic pathways involved in the T2DM development, such as insulin, lipid metabolism, regulation of cellular cycle, response to wounding (*LEP, CPT1B, IRS1, ADIPOQ, among others*). Fifteen differential methylation loci showed a correlation among the three tissues with peripheral blood, making them potential noninvasive biomarker candidates for T2DM. Secondarily other genes that were not previously associated with obese-T2DM patients were identified.
Conclusion In this work we identified a group of genes which DNA methylation was altered in T2DM obese patients, suggesting that epigenetic alterations in tissue could play an important role in the ethiopathogenesis of this disease. Other epigenetic associations between obesity and diabetes have been observed, situation that could

lead to new insights within the field of genetics, basic science and medicine.

A116

DIET-INDUCED THERMOGENESIS IN PATIENTS WITH POSTOPERATIVE RYGBP WEIGHT REGAIN

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Introduction: According to the National Health and Nutrition Examination Survey 2009-2010, 78 million American adults are obese. Bariatric surgery can provide for a sustained long-term weight loss and the metabolic change caused by the surgery seems to be the main cause of this loss. Cross-sectional, prospective and experimental studies, carried out during the post-operative period of Roux-en-Y Gastric Bypass surgery (RYGBP) have shown an increase of over 200% in energy expenditure after meals (Diet-induced Thermogenesis (DIT), a specific component of energy expenditure) when compared with obese patients. However, despite this metabolic improvement, 20-50% of the patients can suffer weight regain about 2 years after surgery. So one question whether such metabolic benefits remain active following post-operative weight regain, or if the disappearance or decrease of these metabolic benefits may be related with this weight regain.

Objective: To evaluate whether there are DIT differences between patients with preoperative (preop) obesity and those who achieved and maintained healthy weight in the late postoperative (postop) and those who regained weight, also in the late postop period of RYGBP.

Methods: This was a cross-sectional study that evaluated three different groups, all female: 1) Clinically severe obese patients (BMI greater than 40 kg/m^2, with or without co-morbidities and greater than 35 kg/m^2 with co-morbidities) (OB group); 2)Postop RYGBP patients who underwent surgery at least 2 years previously and have healthy weight (at least 50% loss of excess weight) (HW group); 3) Patients who suffered weight regain after RYGBP (at least 10% above the minimum weight after surgery and less than 50% loss of preop excess weight) (WR group). The patients belonged to a private practice. The three groups were given an indirect calorimetry examination to measure their resting metabolic rate (RMR), respiratory quotient (RQ) and DIT. The patients collected urine during 24 hours for urinary nitrogen analysis, in order to analyse the RQ . Immediately after the RMR measurement, patients received a mixed meal (270 kcal, with 62% carbohydrate, 12% protein and 26% lipid). Ten minutes after beginning this food intake, postprandial (PP) energy expenditure measurements were taken in the following sequences (in minutes): 10-20, 20-30, 30-40, 60-70, 70-80, 80-90, 110-120, 120- 130, 130-140, 160-170 and 170-180. In this way, a PP-time period of 3 hours was accompanied and it reflected patient´s diet inducet thermogenesis (DIT). The DIT was calculated for each time interval, based on the following equation: DIT = PP Metabolic rate (MR) time interval - RMR. The average of areas under the curve (AUC) between the three groups and the time measurements at baseline were compared using the analysis of variance test (ANOVA). Longitudinal changes between groups were tested using a mixed-effects model analysis of variance for repeated measures. When the overall p-value was less than 0.05, a Bonferroni correction was used. The AUC was calculated by trapezoidal rule, considering a value of $p < 0.05$ as being significant. This research was registered in the clinical trials (NCT 02422212).

Results: A total of 45 patients participated in the research. Of these, 13 belonged to the OB group, 21 to the HW group and 11 to the WR group. The mean age of the participants was 38.72 ± 7.01 years, 37.00 ± 6.98 years and 37.88 ± 6.39 years, respectively. The RQ values increased significantly in the three groups from baseline to the end of the 3-hour postprandial (PP) period. The DIT adjusted for body weight was not significant in the OB group at any PP moment compared to the basal moment. In the healthy and weight regain groups, this increase was significant until the end of the 3-hour period. The average values of the AUC for RQ and RMR in absolute terms did not differ between groups ($p = 0.3111$ and $p = 0.1131$,

respectively). But, the mean AUC values for DIT adjusted for body weight differed between the groups, in that the average AUC value was significantly greater in the HW group than in the WR and the OB groups ($p < 0.0001$ for both). The mean AUC value for DIT adjusted for body weight in the WR group was not significantly different from the OB group ($p = 0.6369$).
Conclusion: DIT appears to be increased in patients with adequate weight loss after RYGBP. The WR group showed similar DIT values to those of the OB group. The RQ values did not differ between groups. Prospective studies are needed to determine if the decreased DIT values in weight regain function as a cause or consequence of weight regain after RYGBP.

A117
WEIGHT REGAIN IN ROUX-EN-Y GASTRIC BYPASS LATE POSTOPERATIVE – GUT HORMONES ROLE

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Background: Bariatric surgery is the main treatment for severe obesity, given its favorable results in terms of effective and sustained weight loss over time and control of comorbidities. The Roux-en-Y gastric bypass (RYGP) is considered the gold standard operation. However, a major concern in the late surgical follow-up is the recurrence of obesity, sometimes with substantial weight regain. There is great importance to analyze the rule of gut hormones in patients with weight regain after RYGP. The objective is to evaluate the influence of secretion of gut hormones and adipokines in late postoperative period of severe obese patients undergone RYGP, comparing postprandial secretion of ghrelin, GIP, GLP-1 and leptin between patients with late follow-up weight regain and patients with a favorable late weight control.
Methods: Twenty-four patients with postoperative follow-up from 27 to 59 months were selected and divided into 2 groups according to evolution in terms of sustained weight lost: Group A (14 patients) represented by satisfactory outcome, with percentage of Excess Weight Loss (% EWL) higher than 50% at minimum postoperative weight and sustained weight loss more than 50% of weight lost and group B (10 patients) with unsatisfactory results, represented by significant weight regain after initial achieving of weight loss success criteria, maintaining less than 50% of the weight lost, expressed as the current / the maximum %EWL ratio less than or equal to 50%. Gastrointestinal hormonal secretion was assessed by measurement of basal serum levels of ghrelin, GIP, GLP-1 and leptin, in fasting and 30, 60, 90 and 120 minutes after a standard meal
Results: There was no difference in ghrelin secretion profile, even in baseline values. There was difference in the secretion of GIP profile, with higher percentage increase in 30 minutes in group A (330%) comparing group B (192.2%) ($p = 0.01$). There was difference in the secretion of GLP-1 profile, with higher increase in absolute ($p = 0.03$) and percentual values after 30 minutes in group A (124%) comparing Group B (46.5%) ($p = 0.01$). There was significant difference between baseline values of leptin, with higher levels in group B ($p = 0.02$).
Conclusions: The secretion profile of gastrointestinal hormones in patients with weight regain after RYGP is different from patients with satisfactory post-operative weight outcome. After meal stimulation, reduced levels of GIP and GLP-1 may indicate influence of intestinal hormonal secretion in the process of weigh regain. Profile secretion of ghrelin was similar, and leptin increased indicates a higher fat accumulation in the weight regained group.

Paper Session IV: OUTCOMES **4:15pm-6:00pm**

A118
DO FINDINGS ON ROUTINE PREOPERATIVE EGD ALTER OUR MANAGEMENT OF BARIATRIC SURGERY PATIENTS?

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Background: Bariatric surgery has now become increasingly common, yet there is currently no consensus as to the role of preoperative upper endoscopy (EGD) in its planning and management. Some advocate routine endoscopy in all preoperative patients, while others use it selectively. In theory, abnormal endoscopic findings may necessitate a bariatric procedure different from the original planned procedure. The frequency in which this occurs is not well known. Our goal was to determine the rate at which an abnormal finding on preoperative EGD causes a change in the subsequent planned bariatric procedure.
Methods: A retrospective chart review was performed of all consecutive patients who had undergone a primary bariatric procedure (sleeve gastrectomy (VSG), gastric bypass (GBP), or biliopancreatic diversion/duodenal switch (BPDDS)) with mandatory preoperative endoscopy in a single institution between 2009 and 2013. Normal and abnormal EGD findings such as tumor/polyps, Barrett's disease, severe esophagitis, hiatal hernia, and significant bile reflux as well as others were identified. Of these patients, the endpoints were the portion of patients who proceeded with the original procedure, those who underwent a procedure different from the one originally planned, and the proportion of those which were changed because of abnormal findings on EGD.
Results: A total of 1571 patients were included in the study. Of these, 1490 (94.8%) proceeded with the original planned procedure post EGD, whereas 81 (5.2%) changed to a different procedure. 34 (2.2%) of these were changed due to patient preference and not related to EGD results. The remaining 47 (3.0%) had their procedure changed due to findings of severe reflux/hiatal hernia/esophagitis (16 = 34%), Barrett's (4 = 8%), gastric polyps/tumor (20 = 43%), and other (7 = 15%). The most common procedure to change to was GBP (24 = 51%) and GBP with subtotal gastrectomy of remnant (15 = 32%). 2 patients (4%) who had reflux symptoms with planned GBP and normal EGD were changed to VSG.
Conclusions: In this study of nearly 1600 patients, 3% of the originally planned primary bariatric procedures were changed due to abnormal preoperative EGD findings. The significance of changing to a more appropriate procedure in response to these findings in this percentage of patients is not well understood and requires further investigation, such as a comparison of the cost of routine EGDs that did not result in change versus the cost associated with the consequences of choosing an inappropriate procedure.

A119

EFFECT OF PREOPERATIVE WEIGHT LOSS ON OUTCOMES WITH BARIATRIC SURGERY

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Henry Ford Hospital[1] Michigan Weight Management Institute[2] Spectrum Health[3] Grand Health Partners[4] University of Michigan[5] University of Michigan Health System[6]

Background: Preoperative weight loss prior to bariatric surgery is mandated by some payors and advocated by some surgeons as a means of reducing complications and improving long-term outcomes. However, the effectiveness of that approach has not been well established. The goal of this study was to compare rates of 30-day adverse events, as well as 1-year weight loss and comorbidity remission between those who lost weight prior to surgery and those who did not. **Study Design:** We analyzed data from the Michigan Bariatric Surgery Collaborative for patients undergoing laparoscopic bariatric procedures between June 2006 and January, 2015. Preoperative weight loss was defined as weight change between program start and the weight closest to the time of surgery. We used multivariable logistic regression to compare outcomes among 3 categories of preoperative

weight loss: weight gain > 5% body weight (WG); weight loss/gain <=5% (NoCHG, Ref); and weight loss > 5% (WL). **Results:** By procedure, the number of patients in each respective weight loss category was 853(4%), 16,047 (74%), and 4,703 (22%) for gastric bypass (RYGB); 612 (4%), 11,779 (73%), and 3,654 (23%) for sleeve gastrectomy (SG), and 362 (3%), 8,896 (85%), and 1,230 (12%) for adjustable gastric banding (AGB). Patients in the WL group were older (44, 46, 48 yrs, p<0.0001), more likely to be male (19%, 21%, 28%, p<0.0001) and had a higher initial mean BMI (45, 47, 50, p<0.0001) and greater mean number of comorbidities (4.5, 4.4, 4.8, p<0.0001). At 30 days postoperatively, patients in the WL group experienced a significantly lower adjusted rate (%) of any complication but no difference in serious complications with RYGB (12.6, 11.3, 10.1, p=0.014 and 3.2, 3.3, 3.1, p=0.547). There were no significant differences in rates (%) of any or serious complications for patients in the WL group after SG (7.1, 5.8, 5.6, p=0.689 and 2.6, 1.8, 1.9, p=0.974) or AGB (3.5, 2.5, 2.3, p=0.582 and 1.6, 0.9, 1.1, p=0.414). Rates of one-year follow up were 30%, 31% and 36% respectively. When measured using the weight at program start, patients in the WL group had significantly higher adjusted excess weight loss (%) 1 year after RYGB (61, 68, 72, p<0.0001), SG (48, 58, 63, p<0.0001) and AGB (28, 38, 45, p<0.0001). There were no significant differences in adjusted rates (%) of diabetes remission for patients in the WL group when evaluating for discontinuation of oral hypoglycemic medications or insulin after RYGB (73, 77, 75, p=0.248; and 53, 63, 65, p=0.450), SG (77, 72, 72, p=0.877 and 28, 54, 44, p=0.115) or AGB (21, 41, 44, p=0.466 and 19, 28, 37, p=0.173). However, patients in the WL group had significantly higher rates (%) of hypertension remission for all procedures: RYGB (46, 46, 51, p=0.035), SG (35, 41, 46, p=0.046) and AGB (17, 18, 24, p=0.029). **Conclusions:** Preoperative weight loss was associated with a lower adjusted rate of any complication with RYGB but otherwise did not affect rates of any or serious complication with any of the other bariatric procedures. Nor did it affect adjusted rates of diabetes remission with any procedure. However, preoperative weight loss was associated with a significant increase in excess weight loss and remission of hypertension across all procedures. Preoperative weight loss over 5% serves as a useful marker for an enhanced weight loss response to RYGB, SG and AGB.

A120

EARLY FEEDING POST BARIATRIC SURGERY REDUCES LENGTH OF STAY

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Introduction: Minimally invasive surgery can enable quicker recovery and decreased length of stays (LOS) across multiple surgical disciplines. However, even within the same minimally invasive surgery programs there can be variations in practice in the initiation of oral intake. Proponents of immediate allowance of oral intake post bariatric surgery (EF, early feeding) claim that it may decrease LOS, while those that wait till the next day (DF, delayed feeding) feel that it may decrease post operative problems like excessive nausea, vomiting, etc., leading to excess LOS and that EF and discharge may increase 30-day readmission rates. We decided to investigate the relationship of EF vs DF to LOS at our institution.
Methods: Cases from a single-center bariatric surgery program performed between January 2006 and December 2014 were retrospectively reviewed. Bariatric surgeries were pulled from the locally managed clinical quality data repository and matched with the diet orders, comorbidity, and inpatient readmission data from the electronic medical records using the Methodist Environment for Translational Enhancement and Outcomes Research (METEOR). ICD-9-CM codes were used to capture the comorbidities hypertension (HTN), diabetes (DM), coronary artery disease (CAD), and sleep apnea (SA). Length of hospital stay

(LOS) was recorded and 30-day readmission was determined using the 30-day period from discharge to another inpatient admission. Diet order details were pulled from the order flow records and recorded as either early feeding (EF, within a few hours of surgery) or delayed feeding (DF, the day after surgery or beyond). Statistical analysis was performed using Chi-square for categorical variables and t-test for continuous variables. Using 2-tailed statistics, significance was assumed if p-value was <0.05.

Results: A total of 3,120 cases of bariatric surgery were obtained from the locally managed clinical quality data repository. Laparoscopic gastric band (LGB) surgeries and revisional surgeries (n=1,195) were excluded from the analysis; 83 additional cases were excluded due to having no diet information leaving a total of 1,842 for the analysis: Laparoscopic sleeve gastrectomy (LSG), n=444,24.1%; Laparoscopic roux-en-y gastric bypass (LRYGB), n=1,397, 75.9%). Females (n=1,463, 79.4%) represented the majority of cases. Mean (SD) age was 44.6 (12.0) years and ranged from 17 to 78 years. The initial BMI was 46.3 (8.2) kg/m^2. For the comorbidities, 1,096 (59.5%) were coded as having HTN, while 636 (34.5%) had DM, 93 (5.1%) had CAD, and 699 (38.0%) had SA. The overall mean (SD) LOS was 54.2 (87.4) hours. Diet orders indicated that 974 (52.9%) patients were in the EF and 868 (47.1%) were in the DF group. No difference in sex, age, BMI and comorbidities was apparent between the EF or DF groups, all p-values >0.05. EF patients had a mean (SD) LOS of 44.6 (67.1) hours and DF patients had LOS of 65.1 (104.6) hours; mean LOS difference of 20.5 hours (p<0.001). The LOS difference between EF and DF groups remained significant when outlier cases were removed by restricting the LOS to <5 days (Table 1). The 30 day readmission rates were similar in the EF and DF groups, 45/974 (4.6%) and 42/826 (4.8%), respectively (p=NS).

Conclusion: Early feeding post bariatric surgery decreased LOS by almost a day (20.5 hours) at our institution. This phenomenon persisted throughout the years, from 2006 to 2014. The LOS difference was found in both LSG and LRYGB patients. This early discharge did not result in increased 30-day readmission rates. Early feeding post bariatric surgery may enhance recovery without increasing readmission.

A121

THE EFFECT OF PREGNANCY BEFORE OR AFTER BARIATRIC SURGERY ON WEIGHT LOSS

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Introduction: Women of childbearing age represent 31-36% of patients undergoing bariatric surgery. However, the influence of pregnancy before or after bariatric surgery on surgery outcomes is unclear. We aimed to compare the effect of pregnancy before and after bariatric surgery on overall weight loss. Methods: We included all female patients who had a successful pregnancy between 2005 and 2014. The window of inclusion was 3-year or less, either before or after surgery. Control subjects included a cohort of female patients who had not been pregnant, matched on a 2:3 ratio for age, initial Body Mass Index (BMI), type of procedure, and duration of follow-up. Results: A total of 62 patients delivered within 3 years either before or after surgery. Data were compared to a matched cohort of 92 patients who had never conceived. Mean age at surgery was 33.8 years and BMI 48.2 Kg/m^2. Laparoscopic Roux-en-Y gastric bypass (RYGB), sleeve gastrectomy (SG), and adjustable gastric banding (AGB) were performed in 75.9%, 12.9% and in 11.0%, respectively. Following an average matched follow-up period of 43.9 months, percent excess weight loss (%EWL) was 68.0±26.0% in the non-pregnant group compared to 53.0±25.0% in the pregnant group (p<0.01). The percent total body weight loss (%WL) was 24.0±11.0% in the study group compared to 31.0±12.0% in the matched cohort (p<0.01). Multivariate analysis demonstrated that pregnancy before bariatric surgery had a more negative effect on weight

loss compared to patients who had never been pregnant (odds ratio, -3.02; 95% CI, -0.58 to -5.57; p=0.005). Conclusions: Pregnancy before bariatric surgery increases the likelihood of reduced weight loss following surgery. Patients wishing to conceive should be informed that weight loss outcomes may vary depending on the timing of pregnancy relative to bariatric surgery.

A122

TASTE AND OLFACTORY CHANGES FOLLOWING LAPAROSCOPIC GASTRIC BYPASS AND SLEEVE GASTRECTOMY

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Background. Alterations in taste and smell after bariatric surgery have been observed, but few data is available. Some authors documented these changes and their role on weight loss following laparoscopic gastric bypass (LGBP) and gastric banding, without existing evidence after laparoscopic sleeve gastrectomy (LSG). Here we analyzed changes in taste/smell after LGBP and LSG, and their impact on weight loss.

Methods. Cohort study, with patients submitted to LGBP and LSG that were asked to participate in a 23-question validated survey; the questionnaire was adapted from a previously used by other authors. Questionnaires were applied at the office to patients who were at least one month postoperative. The primary objective was to determinate the differences between procedures in terms of taste and smell changes; a demographic and anthropometric analysis were also performed and compared. Secondarily, the relation between food aversion and weight loss was also obtained.

Results. In a 6 months period, 183 questionnaires were obtained. Twenty-nine were excluded from the study; 26 had incomplete surveys and 3 referred food intolerance during consultation. The analysis was based on 154 patients (104 LGBP and 50 LSG). One hundred nineteen patients were female (77.2%), being more in the LGBP group (84.6% vs. 62% for the LSG group; p=0.003). Both groups had comparable baseline characteristics for weight and BMI. The overall mean time between surgery and questionnaire was 10 ± 6.7 months, without statistical difference between groups. Weight loss (%EWL) was higher for the LGBP group (74.1 ± 19% vs. 51.2 ± 20.6% for the LSG group; p<0.001). (Table 1). Most of the patients (87.6%) experienced some taste/smell change after a mean time of 2.4 ± 2.2 and 2.1 ± 2.3 months, respectively. There were no difference between procedures (89.4% for LGBP group vs 84% for LSG), taste change (63.4% for LGBP group vs 62% for LSG) or smell change (53.8% for LGBP group vs 46% for LSG). More patients submitted to LGBP referred that food smelled different (51.9 vs. 34% for the LSG group; p=0.040). Table 2. Fat, fruits and meat were the most common products that changed in taste/smell. Higher %EWL was observed for patients presenting food aversion (73.3 ± 19.7% vs 65.8 ± 19.4% for those without aversion; p 0.046). Based on type of surgery, the LGBP group had the same trend, where a %EWL of 78.2 ± 17.3 was observed for those with aversion, vs 70.4 ± 18.6% for those without; p 0.044. The LSG group had no differences for this matter.

Conclusion. The majority of patients presented taste and olfactory changes soon after baritric surgery independently of type of procedure. Patients submitted to LGBP referred more often a different smell in food. Higher %EWL was observed in patients presenting any food aversion, especially in the LGBP group.

A123

THE BENEFIT AND COST EFFECTIVENESS OF LAPAROSCOPIC GASTRIC BYPASS STEMS LARGELY FROM RESOLUTION OF METABOLIC DISEASE, NOT JUST WEIGHT LOSS

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UCSF[1]

Background Although bariatric surgery has been shown to be cost-effective when compared to medical management, the benefit may be underestimated because previous studies have focused on the survival benefit of weight reduction, neglecting the benefit of metabolic disease resolution. The Edmonton Obesity Staging System (EOSS) incorporates metabolic disease into obesity severity and predicts mortality better than body mass index alone. We constructed a Markov model based on the EOSS to determine the cost-effectiveness of laparoscopic gastric bypass (LGB) as compared to medical management. The model calculates the survival benefit and cost effectiveness of surgery, incorporating both weight reduction and resolution of metabolic disease.
Methods Patients began in a decision tree with two strategies: laparoscopic gastric bypass or medical management of obesity. After the first two years postoperatively, patients transitioned to a Markov model to evaluate the impact of surgery or medical management on a patient's EOSS stage over their lifetime. Base-case scenarios, 30-day mortality, and complications were determined from the National Surgical Quality Improvement Program (NSQIP) dataset between 2011-2013, and additional inputs taken from current literature. Incremental cost-effectiveness ratios (ICERs) were calculated for men and women as direct medical cost per quality-adjusted life-year (QALY) gained. Sensitivity analyses for BMI, age, weight loss, and comorbidity resolution were performed.
Results Gastric bypass was superior to medical management, resulting in an overall increase in QALYs. Both men and women undergoing LRYGB had a net gain of 3 QALYs. The ICER was $7,024.01 for men and $3,583.76 for women (3% discount rate for cost and QALYs). For the base case of a 44-year-old woman with a BMI of 46kg/m^2, three life years were gained with LGB. In sensitivity analyses, the ICER was most affected by surgical and follow-up costs.
Conclusion LGB is a highly cost-effective treatment for the management of obesity, largely through its effect on the resolution of metabolic disease. It results in improved quality-adjusted survival with low associated cost and ICERs far below the accepted threshold of for intervention in the United States ($50,000/QALY gained).

A124
BLEEDING RATES ARE INCREASED WITH PREOPERATIVE LOVENOX ADMINISTRATION IN PATIENTS UNDERGOING SLEEVE GASTRECTOMY

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Introduction: Although chemical prophylaxis is important in decreasing the risk of venous thromboembolism (VTE) after bariatric surgery, it may increase the rate of postoperative bleeding. The Michigan Bariatric Surgical Consortium (MBSC) recommends preoperative chemical prophylaxis administration and reports compliance to this measure in Pay for Performance standards.
Methods: A retrospective review of patients who underwent laparoscopic sleeve gastrectomy (LSG) from August 2011 until November of 2014 was done. Three different regimens were utilized for prophylaxis on the day of surgery: Group A received lovenox 12 hours postoperatively, Group B received lovenox both preoperatively and 12 hours postoperatively, and Group C received lovenox preoperatively but not a second dose 12 hours postoperatively. Patients continued to receive lovenox every 12 hours from postoperative day 1 until discharge unless they bled. Tisseel fibrin sealant (Baxter) without buttressing was used along the gastric staple line in all cases.
Results: 781 patients underwent LSG in the indicated time period: seven in Group A (420 total patients) bled (1.7%), ten in Group B (223) bled (4.5%), while five in Group C (138) bled (3.6%) (p=0.05; A versus B and C). The packed red blood cell (PRBC) transfusion for Group A

was 2 +/- 1.1 units, Group B was 2.7 +/- 1.5 units, and Group C was 1.6 +/- 0.9 units (p=NS). One patient in Group C required laparoscopic reoperation for bleeding at the gastric staple line. VTE occurred in three patients: two in Group A (0.48%) and one in Group B or C (0.28%) (p=NS). The length of stay was significantly (p=0.0001) longer in patients who required PRBC transfusion (mean 3.5 +/- 1.1 days) versus those who did not (mean 2.2 +/- 0.5 days). No leaks or mortality occurred. **Conclusion:** The addition of preoperative lovenox administration did not significantly decrease the rate of VTE, however, it significantly increased the rate of postoperative bleeding and length of stay. Recommendations to administer preoperative chemical VTE prophylaxis should be revisited.

THURSDAY, NOVEMBER 5, 2015

Paper Session V: METABOLIC AND MALABSORPTIVE 8:00am–9:45am

A125

LONG-TERM FOLLOW-UP OF PILOT RANDOMIZED TRIAL COMPARING BARIATRIC SURGERY VS. INTENSIVE MEDICAL WEIGHT MANAGEMENT ON DIABETES REMISSION IN PATIENTS WITH TYPE 2 DIABETES AND BMI 30-35; THE ROLE OF sRAGE DIABETES BIOMARKER AS PREDICTOR OF SUCCESS.

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Introduction To provide longer-term follow-up of a previously published pilot randomized trial comparing bariatric surgery vs. intensive medical weight management (MWM) in patients with type 2 diabetes (T2DM) and BMI 30-35. Additionally, to assess whether the soluble form of RAGE (receptor for advanced glycation end-products) is an adequate diabetes biomarker that may help determine which patient population would benefit most from surgery. **Methods** Originally, 57 patients with T2DM and BMI 30-35 were randomized to surgery (bypass, sleeve or band, based on patient preference; n=29) vs. MWM (n=28). The 6 month results showed that surgery was significantly effective (previously published data). We performed an updated review of this patient cohort to evaluate weight loss and diabetes remission at 2 years. A repeated measures linear model was created to compare the change in HbA1C and BMI between the two groups. The outcomes were also compared to baseline sRAGE status using a repeated measures linear model. Patients who ultimately crossed over from MWM to surgery group (after the initial study) were included. **Results** At baseline, mean BMI was 32.6 and mean HbA1c was 7.8. At 2 years the following was noted: The surgery group continued to have significantly higher diabetes remission (50% vs. 0%), lower BMI (28.5 vs. 30.9; $p<0.0001$) and lower HbA1c (7.0 vs. 7.9; $p=0.019$) than the MWM group. In the surgical group, those with a higher baseline sRAGE had a lower post-op BMI ($p=0.037$). **Conclusion** At 2 years, bariatric surgery was very effective in patients with T2DM and BMI 30-35. Higher baseline sRAGE predicted success with surgery. However, larger studies will be required to confirm the accuracy of these observations.

A126

A NATIONWIDE SAFETY ANALYSIS OF BARIATRIC SURGERY IN NONMORBIDLY OBESE PATIENTS WITH TYPE 2 DIABETES

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Introduction: Recent randomized controlled trials (RCTs) have shown the superiority of bariatric surgery over medical therapy for achieving glycemic targets in obese patients with type 2 diabetes (T2D). However, these RCTs cannot clearly resolve the safety concerns of bariatric surgery in a subgroup of patients with T2D who are overweight and mildly obese because such studies are small trials unlikely to reveal uncommon but clinically serious complications. In addition, many of the trials have screened out low-body mass index (BMI) and high-risk patients deemed unfit for participation in the study. The aim of this study was to assess the safety profile of bariatric surgery in patients with class 1 obesity and overweight with T2D using a large national clinical database. These data are important because most patients with T2D fall into this low BMI category.
Methods: Data were retrieved from the American College of Surgeons - National Surgical Quality Improvement Program (ACS-NSQIP) dataset (2005-2013). Inclusion criteria included: adult patients aged ≥18 years, BMI ≥25 but <35 kg/m^2, who were being treated with medications for T2D and underwent elective primary bariatric surgical procedures including Roux-en-Y gastric bypass (RYGB), adjustable gastric banding (AGB), sleeve gastrectomy (SG), and duodenal switch (DS). Data of the subgroup of patients with BMI 25-30 were detailed separately, as there is a paucity of such data in the literature. Postoperative composite adverse outcome was defined as presence of any of 16 major adverse events.
Results: The mean BMI of the 1,003 patients who met the inclusion criteria was 33.5±1.6 kg/m^2. Forty- six patients had a BMI<30 kg/m^2. Forty percent were taking insulin and 60% were on oral hypoglycemic medications. The most prevalent baseline comorbidities were hypertension (77.6%) and cardiac diseases (9.1%). Surgical procedures included RYGB (57.2%), AGB (22.6%), SG (18.8%), and DS (1.3%). The mean operative time and length of hospital stay were 110.3±51.6 min and 2.0±1.7 days, respectively. Incidence of all individual complications was ≤ 0.5% in this cohort except postoperative bleeding, which was 1.6%. Thirty-day postoperative mortality and composite adverse event rates were 0.2% and 4.2%, respectively. Reoperation within 30 days after the primary procedure was necessary in 1.6% of patients (Table 1).
Conclusion: A 2-hour surgical procedure requiring a two day hospital stay that is associated with modest early morbidity (4%) and low mortality (0.2%) can lead to remission of a chronic, progressive and disabling disease. Based on these findings, bariatric surgery can be considered a relatively safe option for managing T2D in patients with mild obesity. Further large clinical studies on long-term safety and efficacy outcomes of bariatric surgery in patients with T2D and low BMI are warranted.

A127
IMPACT OF METABOLIC SURGERY FOR PATIENTS WITH BMI LESS THAN 35 KG/M2 ON HEALTH-RELATED AND EATING QUALITY OF LIFE

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Yotsuya Medical Cube[1]

Background: Bariatric surgery for morbidly obese patients has been shown to ameliorate quality of life (QOL). Little data are available in non-morbidly obese patients undergoing metabolic surgery. Aims: We investigate the impact of metabolic surgery for diabetic patients with BMI less than 35 kg/m2 on health-related and eating QOL.
Methods: Consecutive 51 diabetic patients (F/M=24/27, age 46.5±8.1 years) with BMI less than 35 kg/m2 who underwent laparoscopic sleeve gastrectomy with duodenojejunal bypass (LSG-DJB) and were followed up at least 1 year were enrolled. The preoperative body weight and BMI were 89.1±11.9 kg and 31.7±2.2 kg/m2, respectively. Fasting glucose and HbA1c were 203±71 mg/dL and 9.0±1.5%, respectively. Duration of diabetes was 9.0±6.1 years. 38 patients (76%) were treated with oral agents and 28 patients (56%) were treated with insulin. The health-related (HR) QOL was measured by the

Short-Form Health Survey (SF-36) before and 1 year after surgery. Questionnaires regarding food satisfaction, food tolerance and caloric intake were also conducted.
Results: The follow-up rate at 1 year was 88.2%. At 1 year, the body weight and BMI were 67.2±11.6 kg and 23.9±2.8 kg/m2, respectively ($p<0.001$) which accounts for the percentage of total body weight loss (%TWL) of 24.4±8.3 %. The fasting glucose and HbA1c were 114±35 mg/dL and 6.5±1.1%, respectively ($p<0.001$). Remission of diabetes (defined as HbA1c less than 6.5% without diabetes medication) was achieved in 50% of the patients. Food (caloric) intake significantly decreased from 2679±952 kcal/day at baseline to 1346±483 kcal/day at 1 year ($p<0.001$). Food tolerance score also significantly decreased from 21.6±0.6 (baseline) to 18.7±3.9 (1 year) ($p<0.001$). By contrast, food satisfaction score significantly increase from 3.0±1.1 (baseline) to 3.5±1.1 (1 year) ($p=0.015$). The prevalence of symptomatic dumping syndrome was 5.9% (3/51). Regarding the HR-QOL, significant improvement was observed in the aspects of PF (physical functioning), BP (bodily pain), GH (general health), VT (vitality) and MH (mental health). The remaining aspects of RP (role physical), SF (social functioning) and RE (role emotional) did not reach statistically significant difference.
Conclusion: In non-morbidly obese patients associated with severe diabetes who underwent LSG-DJB, marked amelioration in glycemic control was observed and, although the amount of food intake and food tolerance were affected, the overall HR-QOL improved significantly.

A128
LONG-TERM (>10 years) OUTCOMES OF THE LAPAROSCOPIC BILIOPANCREATIC DIVERSION WITH DUODENAL SWITCH.
Jacques Himpens, MD, Vinderhoute, Belgium

Introduction: Concerns over short and long term morbidity of the biliopancreatic diversion with duodenal switch prompted us to review our 10+ years outcomes of the laparoscopic DS (L-DS).
Methods: Records of all the patients who underwent L-DS over 10 years ago were analysed for weight loss, evolution of comorbidities and incidence of deficiencies. Patients were contacted to answer a questionnaire based on Bariatric Reporting Outcome System (BAROS).
Results: The cohort consisted of 153 patients. Thirty-day mortality was 0, but 6-month procedure related mortality was 2.0%. Mean follow-up was 130.2 months (126-146). Full data were retrieved on 113 participants (78.5%). Percentage total weight loss was 40.7±10.8%, an excess BMI loss of 94.3±24.1%. Weight loss was greatest in the superobese (BMI>50kg/m ^{2}). Remission rate for type 2 diabetes was 90.5%, for arterial hypertension 80.4%, for dyslipidemia 89.7%, but 42.5% of the patients needed a reoperation, including for correction of malnutrition in 9.7%, mostly in patients with a short (75cm) common limb. Most common deficiencies concerned Vitamins A and D, iron and zinc. De novo gastro-esophageal reflux (GERD) was reported in 43.8%. BAROS score was good at 4.92+2.24 and 82.3% of the participants would choose the same procedure again.
Conclusion: L-DS is a very effective metabolic procedure at the cost of occasional protein and other deficiencies. Outcomes were best in super-obese participants and in patients with a longer common channel. The high reoperation rate and incidence of GERD is concerning.

A129
THE IMPACT OF THE BILIOPANCREATIC DIVERSION WITH THE DUODENAL SWITCH (SWITCH) OVER 9 YEARS OF FOLLOW-UP.
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Weill Cornell Medical College[1] Weill Cornell College of Medicine[2] Hopital du Sacre Coeur[3]

Background: Because the Switch is infrequently performed, follow up rates among bariatric patients are poor, and blood analysis is costly, there is limited information on the multiple long term effects of this procedure. .
Methods: All patients who consented and underwent a Switch from 1999 to 2010 were evaluated for weight change, resolution of co-morbidities, body composition , quality of life and depression symptoms during annual visits at 1, 3,5, 7, and 9 years. Those who had left our area were contacted by phone to complete forms and give permission to obtain information from their primary care doctor. Descriptive statistics, analysis of variance, and pair-wise comparisons for the clinical and Health Related Quality of Life (HRQoL) measures were calculated for each of the 5 follow-up cohorts. The paired t test evaluated pre- and postoperative values. All P values are 2-sided with statistical significance evaluated at the .05 α-level.
Results: Between 1999 and 2010 274 patients received a Switch. Qualified for analysis were 190 patients (70% women) age 42.7±10.0 years, BMI 53.0±11.9 kg/m²; at year 1, 189 were available; year 3 - 193; year 5 - 132; year 7 - 98; year 9 - 68. Gender distribution was not significantly different over the years of observations. BMI was 33.2 at 1 year and 31.5 at 9 years. Body composition was available on 62 patients age 45.0± 9.3, 28.2 months after surgery. The BMI post-surgery was 29.0 ±5.7 with a % body fat of 26 ±9.4 [range 48.4% to 9.5%].
Differences in the Beck depression inventory: The mean BDI score at baseline was 13.3±-9.4 and 6.8± 10.8 at year 1. ANOVA analysis was not significant between all the years, [p= 0.094]. T-test analysis between baseline and year 1 was significant, [p = 0.013]. The mean BDI score for year 1 was 6.8 ±10.8 and for year 9 was 6.4 ± 7.4. There was no statistical significance between years 1 and 9 [p=0.93]. The improvement in BDI scores did not correlate with the amount of weight loss.
Differences in the Impact of Weight on the Quality of Life-life: ANOVA was significant between all years in each of the domains [p= .001]. The T test between baseline- year 1, and baseline- year 9 was significant [p=0.0001] for all the domains. There was no t-test significance between yearly cohorts after year 1.
Medical Outcomes Study SF 36 form: ANOVA analysis between all yearly cohorts was significant for all the domains except for emotional role [p=0.115] and mental health [p= 0.059]. T tests for emotional role (p=0.66) and mental health (p=0.64) were not significant between baseline and year 1 unlike all the other domains. T-tests were not significant between year 1 and 9 for any of the domains except for emotional role [p-value= 0.003].
The resolution of co-morbidities continued for the duration of the observations with no diabetes and 1.9% dyslipidemia at year 9.
Conclusions: A dramatic weight loss occurred during the first year which was sustained throughout the 9 years of observation. At year 9 the BMI was reduced from the baseline 53 to 31.5. The resolution of the co-morbidities during the first year was maintained over the long term. HRQoL and depressive symptoms significantly improved, however, there were no significant differences after year 1. These positive changes across all domains did not correlate with the amount of weight loss.

A130

LONG-TERM OUTCOMES AFTER BILIOPANCREATIC DIVERSION WITH AND WITHOUT DUODENAL SWITCH: 2, 5, AND 10-YEAR DATA

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New York University School of Medicine[1]

Introduction: Biliopancreatic diversion (BPD) with or without duodenal switch (BPD-DS) produces more weight loss and amelioration of comorbidity than any other bariatric procedure. Yet, there is minimal long-term data on BPD; some of the data that exists is based on open procedures or uncommon techniques (i.e. transient gastroplasty), and most of it derives from centers outside the U.S. that use the BPD as their operation of choice for all bariatric patients, making this data difficult to generalize. The aim of our study was to investigate the long-

term weight loss, remission of comorbidities, complications, and quality of life after BPD and BPD-DS at a single U.S. center

Methods: We conducted a retrospective review of a prospective database all patients who underwent BPD or BPD-DS between 1999 and 2011. Data were also obtained from office visits and patient interviews. Outcomes included weight loss measures at 2, 5 and 10-15 years postoperatively, rates of comorbidity remission, long-term complications, and nutritional deficiencies. Additionally, a comprehensive subjective review of postoperative morbidity, quality of life and dietary changes was conducted.

Results: One hundred patients underwent BPD (34%) or BPD-DS (64%). Mean age was 42.3 years, with 16% males. Mean preoperative BMI was 50.2 kg/m^2 [range 34.4-65.3]. Mean follow up was 8.2 years [range 1-15y] with 72 percent of eligible patients in active follow up at 10-15 years postoperatively. Excess weight loss (EWL) was 65.1% at 2 years, 63.8% at 5 years, and 67.9% at 10-15 years [Figure 1]. Higher %EWL was achieved at ≥ 10 years for those with preoperative BMI <50 kg/m^2 vs. ≥50 kg/m^2 (73.6% vs. 63.2%, p=0.042). Additionally, BPD-DS was associated with 11% greater EWL across the study period, when compared to BPD (p=0.0007). Preoperatively, 24% of patients had hypertension (HTN), 8% had hyperlipidemia (HL), and 14% had diabetes (DM). At 10-15 years postoperatively, remission of comorbidities was 75% for HTN, 75% for HLD, and 50% for DM. Thirty-seven percent of patients developed long-term complications requiring surgery (cholelithiasis 7%, internal hernia 8%, incisional hernia 9%, hiatal hernia 2%, bowel obstruction 7%, severe malnutrition 4%, weight loss failure 8%) at an average of 4.4 years postoperatively. There were no 30-day mortalities; however, there was one mortality secondary to severe malnutrition. Table 1 lists the prevalence of specific postoperative nutritional deficiencies for the entire study population, and stratified by surgery type. Patients who underwent BPD had a greater incidence of iron- and vitamin-deficiency anemia, whereas those who underwent BPD-DS had greater incidence of thiamine deficiency. On a subjective review of postoperative morbidity, the most common complaints were malodorous stool (89%), diarrhea (81%), oily incontinence (70%), fatigue (59%), food intolerance (51%), and hair loss (47%). Overall, however, 94% of patients reported satisfaction with their choice of surgery.

Conclusion: This clinical experience supports the long-term safety and efficacy of BPD and BPD-DS at a single U.S. center. Higher levels of excess weight loss are achieved by those patients with a lower preoperative BMI and BPD-DS. While nutritional deficiencies and postoperative complications can be frequent, patient satisfaction remains high. There continues to be a need to educate young surgeons on this procedure and its after-effects, as it has significant benefits as a stand-alone procedure and may increase in demand as a secondary procedure post-sleeve gastrectomy for weight regain.

A131

A MATCHED COHORT COMPARISON OF LAPAROSCOPIC BILIOPANCREATIC DIVERSION WITH DUODENAL SWITCH AND ROUX-EN-Y GASTRIC BYPASS.

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Michigan State University[1] Grand Health Partners[2] University of Michigan[3] Henry Ford Health System[4]

Background: Historically, duodenal switch has had the best weight-loss outcomes and remission of comorbidities, but with the highest complication rate. In this study we evaluated outcomes between laparoscopic duodenal switch and roux-en-y gastric bypass.

Study Design: Using data from the Michigan Bariatric Surgery Collaborative (MBSC), we matched 694 patients on 26 baseline characteristics, comparing laparoscopic biliopancreatic diversion with duodenal switch (BPD-DS) to laparoscopic roux-en-y gastric bypass (RYGB). Outcomes measured included complications within 30 days and weight loss, patient satisfaction, and remission of weight-related comorbidities at 1, 2, and 3 years after bariatric surgery.

Results: Matching resulted in cohorts that were well balanced on baseline characteristics with no statistical differences. The all-complication rate was lower in the laparoscopic BPD-DS group (7.3% versus 10.9%, p=0.038), as well as the serious complication rate (1.4% versus 3.2%, p=0.004) when compared to the laparoscopic RYGB group. Excess body weight loss (EBWL) at 1 year follow up was greater in the BPD-DS group (70% versus 63%, p=.001) and at 2 years follow up (79% versus 65%, p<.0001). Patient satisfaction was similar between both groups. Furthermore, when comparing BPD-DS to RYGB, remission rates of weight-related comorbidities showed no statistically significant difference.
Conclusions: Laparoscopic BPD-DS can be performed safely with low complication and mortality rates. In addition to safety, the laparoscopic BPD-DS is efficacious with greater total weight loss, comparable patient satisfaction, and similar remission of weight-related comorbidities when compared to laparoscopic RYGB.

Paper Session VI: LATE-BREAKING NEWS AND NOVEL PROCEDURES 3:30pm–5:00pm

A132

ENDOSCOPIC GASTRO-JEJUNOSTOMY OUTLET REDUCTION (EGOR) AFTER ROUX-EN-Y GASTRIC BYPASS: IS IT WORTH IT?

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Stanford University[1]

Background: Roux-en-Y Gastric Bypass (RYGB) remains the gold standard in bariatric surgery and can lead to significant, sustainable weight loss. However, weight regain remains a long-term risk and very few options are available in the setting of significant weight regain. Previous studies have demonstrated a relationship between increased gastrojejunal stoma diameter and impaired weight loss/weight regain. In this setting, endoscopic suturing may be a useful tool in order to help patients struggling with weight regain. We present a review of endoscopic gastro-jejunal outlet reductions (EGOR) performed at our institution and resulting weight loss and perioperative outcomes.
Methods: Fifteen patients underwent EGOR after RYGB and were included in this retrospective analysis of a prospective bariatric database. Pre-EGOR data collected included patients' demographic information, body mass index (BMI), and percent excess weight loss (%EWL). Perioperative data were recorded. Postoperative complications, BMI, %EWL, and comorbidities were collected at 3, 6 and 12 months.
Results: Average time between RYGB and EGOR was 134 ± 92 months [range: 53 – 442]. Average BMI at the time of EGOR was 42.9 ± 8.8 kg/m^2 [range: 31.9 – 65.5]. Mean operative time was 63.9 minutes [range: 25 – 112]. All cases were performed as outpatient procedures; there were no complications or readmissions. Mean follow up after EGOR was 10.2 months [1.0 - 22.2 months]. Average BMI decreased from 42.9 kg/m^2 preoperatively (n=15) to 41.8 kg/m^2 at 3 months (n=8) and 38.8 kg/m^2 at 6 month (n=6). At 12 months, average BMI increased slightly to 39.4 (n=5). At both 3- and 6-months postop, all patients had lost weight from their preop baseline, with 18.9% mean %EWL at 3 months [range: 4.1% - 31.2%, n=8] and 20.3% mean %EWL at 6 months [range: 3.0% - 35.2%]. At 12 months postop, mean %EWL was 9.5% [range: -13.3 - 37.8, n=5]; 2 subjects had gained weight above their baseline weight (indicated as %EWL<0%).
Conclusion: This study is one of very few reports regarding outcomes for EGOR after RYGB. Our results show EGOR can be performed as an outpatient procedure with an excellent safety profile. This procedure may lead to very significant weight loss in select patients, but results vary and maintained weight loss beyond 6 months seems uncertain. Further studies are needed to assess the long-term sustainability of weight loss following EGOR, determine how drug therapy may augment

weight loss, and to evaluate methods to identify which patients might benefit most from this intervention.

A133

MANAGEMENT OF GASTRIC LEAKS FOLLOWING SLEEVE GASTRECTOMY WITH ENDOLUMINAL VACUUM (E-VAC) THERAPY

Steven Leeds, MD *Baylor University Medical* Center[1], James S. Burdick, MD *Baylor University Medical* Center[1]

Introduction: Sleeve gastrectomy has become a popular weight loss procedure with great success, but is associated with staple line leak that can result in high morbidity and mortality. Current management options range from endoscopic stent placement to surgical intervention. Endoluminal vacuum (E-Vac) therapy has been recognized as a viable option for use in anastomotic leaks and perforations of the GI tract.

Methods: Retrospective and prospectively gathered registries for use of E-Vac therapy at our institution were queried to identify 35 patients. Nine of these patients had a staple line leak from laparoscopic sleeve gastrectomy (LSG). Endoluminal negative pressure was used with an endosponge at the level of the leak, and was placed endoscopically.

Results: Nine patients were treated with E-Vac therapy. Eight of 9 patients were admitted from outside hospitals with a mean of 61 days (5-233) following their LSG. An average of 10.3 procedures was done during the patient's admissions to place and exchange the endosponge. All nine patients had resolution of their leaks with an average of 50 days undergoing E-Vac therapy. Six of 9 patients had exploratory procedures prior to their admission. During admission, 5 of the 9 patients had self expanding metal stents (SEMS) placed with failure of leak resolution. Discharge disposition included 2 patients (22%) to rehab facilities, 1 death not due to E-Vac therapy and 6 patients (66%) went home. No complications were seen from E-Vac therapy.

Conclusion: E-Vac therapy is a safe and viable option for patients with staple line leak following LSG.

A134

LONG TERM SUCCESS AND FAILURE WITH SLEEVE GASTRECTOMY IS PREDICTABLE BY THREE MONTHS. A MULTIVARIATE MODEL USING SIMPLE OFFICE MARKERS

Austin Cottam, HS *Bariatric Medicine Institute*[1], Daniel R. Cottam, MD *Bariatric Medicine Institute*[1], Amit AS. Surve, MD *Bariatric Medicine Institute*[1], Hinali M. Zaveri, MD *Bariatric Medicine Institute*[1], Christina Summerhays, Student *Bariatric Medicine Institute*[1], Samuel Cottam, CNA *Bariatric Medicine Institute*[1], Josiah Billing, BS *Puget Sound Surical Center*[2]

Introduction: Despite being the most common surgery worldwide, nothing is known about predicting success and failure with the sleeve gastrectomy (SG). We decided to use multivariate analysis and two different practices to design a model to predict weight loss outcomes using data widely available to any surgical practice at three months to determine weight loss outcomes at one year.

Methods: 613 patients from two different bariatric institutions were included in this study. Patients were divided up into quartiles. Co-morbidities and other pre-operative characteristics were gathered and EWL was calculated for 1, 3 and 12 months. Patients were divided up into weight loss quartiles at one year. The bottom quartile (EWL <54.6% at one year) was defined as weight loss failure. Multiple variate analysis was used to find factors that affect EWL at 12 months.

Results: Pre-operative sleep apnea, pre-operative diabetes, excess weight loss (EWL) at 1 month, and EWL at 3 months all affect EWL at one year. Positive Predictive Value and Negative Predictive Value of our model was 72% and 91% respectively. Sensitivity and Specificity were 71% and 91% respectively.

Conclusion: Long-term failure of the SG can be known by three months post operatively. This can help surgeon's direct surgical or medical interventions to patients at three months rather than at one year or beyond.

A135

OBENDO 2 AND 3 STUDY ON HYALURONIC ACID INJECTION AT THE GE JUNCTION: A CLOSER LOOK AT THE TRAJECTORY.

Jerome Dargent, MD *Polyclinique de Rillieux France*[1]

We present the final results of the OBENDO study regarding Hyaluronic Acid injection at the gastro-esophageal junction (GEJ) versus or in combination with Intragastric Balloon. Research into minimally invasive techniques is mandatory for greater acceptance in bariatric surgery, a useful first step being to evaluate the combination of these with current procedures. We suggested that intragastric balloon (IGB) can be performed with hyaluronic acid (HA) injections as a bulking material at the level of the GEJ. Methods: A sub-mucosal restriction was created by circular injection of an absorbable material within a defined area based on endoscopic anatomy. We included 101 patients in a prospective multi-center randomized trial, with average body mass index (BMI) 33.8 (range 27-43.6), treated from April 2010 to April 2012 by IGB and/or HA injection, sequentially, and followed for two more years. Patients were divided into group 1 (IGB alone), group 2 (IGB followed by HA at IGB removal, at 6 months), and group 3 (HA, and IGB at 6 months). Results: BMI loss at 6 months was inferior in the HA group (32 patients) compared with the IGB groups (68 patients): 2.1+- 0.4 vs. 3.4+-0.3, $p<0.05$). The efficacy of IGB alone compared with combined treatments (groups 2 and 3) was significantly inferior at 18 months only, but the impact of the treatment sequence (HA before or after IGB) on BMI loss was not statistically significant, although in favor of HA first. 21 patients had an erratic weight-loss trajectory. Patients with a history of psychiatric disorders or severe alimentary troubles having been ruled out, it did not appear that particular events played a specific role.We present the final results of the OBENDO study regarding Hyaluronic Acid injection at the gastro-esophageal junction (GEJ) versus or in combination with Intragastric Balloon. Research into minimally invasive techniques is mandatory for greater acceptance in bariatric surgery, a useful first step being to evaluate the combination of these with current procedures. We suggested that intragastric balloon (IGB) can be performed with hyaluronic acid (HA) injections as a bulking material at the level of the GEJ. Methods: A sub-mucosal restriction was created by circular injection of an absorbable material within a defined area based on endoscopic anatomy. We included 101 patients in a prospective multi-center randomized trial, with average body mass index (BMI) 33.8 (range 27-43.6), treated from April 2010 to April 2012 by IGB and/or HA injection, sequentially, and followed for two more years. Patients were divided into group 1 (IGB alone), group 2 (IGB followed by HA at IGB removal, at 6 months), and group 3 (HA, and IGB at 6 months). Results: BMI loss at 6 months was inferior in the HA group (32 patients) compared with the IGB groups (68 patients): 2.1+- 0.4 vs. 3.4+-0.3, $p<0.05$). The efficacy of IGB alone compared with combined treatments (groups 2 and 3) was significantly inferior at 18 months only, but the impact of the treatment sequence (HA before or after IGB) on BMI loss was not statistically significant, although in favor of HA first. 21 patients had an erratic weight-loss trajectory. Patients with a history of psychiatric disorders or severe alimentary troubles having been ruled out, it did not appear that particular events played a specific role.

A136

A NOVEL PROCEDURE FOR THE TREATMENT OF GASTRIC STRICTURE FOLLOWING SLEEVE GASTRECTOMY

Kevin D. Helling, MD *Brigham and Women's Hospital*[1], Scott A. Shikora, MD *Brigham and Women's Hospital*[1]

Laparoscopic sleeve gastrectomy is the most commonly performed weight loss operation in the world today. The increased prevalence of sleeve gastrectomy has necessitated the development of novel procedures to treat the uncommon complications such as sleeve stricture. We present video of a new procedure developed for treatment of stricture following sleeve gastrectomy.The patient is a 30 year old woman who developed severe dysphagia several weeks following sleeve gastrectomy due to stricture at the location of the incinsura angularis. After several failed attempts at endoscopic dilation, she developed failure to thrive and required

alimentation with total parenteral nutrition. She was taken to surgery for definitive treatment. Intraoperatively, we were able to readily identify the acute angulation at the incisura as the source for the patient's dysphagia both laparoscopically and endoscopically. After identification of the stricture site, definitive treatment was accomplished by performing a gastrogastrostomy using a 60 mm endo-GIA stapler centered on the site of acute angulation. This was done by placing one blade of the stapler into a gastrotomy created 3 cm distal to the stricture site, with the other blade placed into a gastrotomy 3 cm proximal to the site of angulation. The stapler was then fired creating a widely patent gastric lumen. The common gastrotomy was closed in a single layer using running silk suture. This technique created a straight and smooth intraluminal cavity through the stomach with complete resolution of the stricture. The patient tolerated this procedure extremely well and was able to rapidly advance to a normal post-bariatric surgery diet and discontinue the use of total parenteral nutrition.This novel operation represents the first reported use of the Shikora-Helling 'Shikelling' gastrogastrostomy for treatment of gastric stricture. With increased numbers of patients undergoing sleeve gastrostomy, complications such as sleeve stricture will be seen with increased frequency. The Shikelling procedure can safely be used for treatment of stricture following sleeve gastrectomy, particularly in patients who fail non-operative interventions.

A137

THE STOMACH, INTESTINAL AND PYLORUS SPARING (SIPS) PROCEDURE; A SINGLE CENTER ANALYSIS OF OUR FIRST 100 PATIENTS

Paul E. Enochs, MD *Bariatric Specialists of North Carolina*[1]

Background: The sleeve gastrectomy with a single anastomosis duodenal-intestinal bypass procedure has been gaining in popularity since first described by Dr. Torres several years ago. It has gone by many names most notably the Stomach Intestinal and Pylorus Sparing surgery (SIPS). However, there are few studies describing the results of these procedures.
Methods: Using our internal practice database and the MBSAQIP database, clinical data was obtained for our initial set of 100 Patients who underwent the SIPS procedure and compared with the data of those who underwent a laparoscopic sleeve gastrectomy, laparoscopic roux- en-y gastric bypass, and a laparoscopic duodenal switch. Main outcomes were weight loss and 30 day risk adjusted serious morbidity and mortality.
Results: We analyzed our first 100 patients who underwent a SIPS procedure and compared them to similar patients who underwent a laparoscopic sleeve gastrectomy (SG), gastric bypass, and a duodenal switch. So far the EWL is comparable in the patients already seen, and we expect that trend to continue or even more closely mirror the results of RNY or DS with a risk profile that is less than that of DS or RNY.
Conclusion: The use of Laparoscopic SIPS procedures have been increasing on a national level. Compared with laparoscopic gastric bypass and duodenal switch, a SIPS procedure is associated with a lower 30-day risk-adjusted serious morbidity and equivalent 30-day mortality with increased weight loss.

Paper Session VII: COMPLICATIONS AND REVISIONS 3:45pm–5:15pm

A138

VENOUS THROMBOEMBOLISM OUTCOMES IN BARIATRIC SURGERY PATIENTS: THE ROLE OF OPERATIVE TIME

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Introduction: Morbid obesity is an established risk factor for the development of venous thromboembolism (VTE). Bariatric surgery is a critical component in decreasing the morbidity and mortality of obese patients, however, VTEs are associated with a high post-operative mortality rate among bariatric surgery patients. An evaluation examining this high-risk population and the causes behind their post-operation complications is an important step in continuing medical care through surgical intervention. The objective of our study is to evaluate the role of operative time on VTE outcomes among bariatric surgery patients in a national database.
Methods: A retrospective analysis of the American College of Surgeons National Surgical Quality Improvement Program (ACS-NSQIP) of 2005-2010 was conducted. Patients undergoing laparoscopic Roux-en Y gastric bypass (LRYGB) (CPT: 43644, 43645) and laparoscopic sleeve gastrectomy (LSG) (CPT: 43775) were selected. Of those, only elective cases with the same admission and procedure dates were collected. Exclusion criteria included patients undergoing open procedures with BMIs below 35 kg/m2, paraplegia, and cancer related co-morbidities. Additionally, operations less than thirty minutes or greater than five hours were omitted. Operative time was categorized into two groups: 30-180 min and 180-300 min. VTE rate and operative time interval were analyzed using Pearson chi2 test and adjusted multivariate logistic regression.
Results: Of 39,755 bariatric surgery patients, 96.0% and 4.0% underwent laparoscopic roux-en-Y gastric bypass (LRYGB) and laparoscopic sleeve gastrectomy (LSG), respectively. Most were female (79%) with a body mass index between 40-49.9 kg/m^2 (55%). Regarding BMI, patients within 35-39.9 kg/m^2, 49-49.9kg/m^2, BMIs ≥50kg/m^2 had 0.27%, 0.35%, and 0.61% post-operative VTEs, respectively. The VTE rate was 0.40% for LRYGB and 0.74% for LSG. The VTE rate by operative time was 0.35% for 30-180 minutes and 0.73% for over 180 minutes, respectively. On adjusted multivariate analysis, patients with BMIs ≥50 kg/m2 were 1.75 times more likely to develop a VTE complication (P=0.047). Additionally, an operation time over 180 minutes was two fold more likely to produce a post-operatively VTE ($p<0.01$).
Conclusions: Operative time plays a vital role in VTE outcomes among bariatric surgery patients. Bariatric surgeons should consider efficiency while operating to improve VTE outcomes. Further investigation regarding methods to decrease VTE prevalence in patients with BMIs ≥50kg/m^2 is needed, as this group is a target population for such procedures.

A139

WHO SHOULD GET EXTENDED THROMBOPROPHYLAXIS AFTER BARIATRIC SURGERY? A RISK ASSESSMENT TOOL TO GUIDE INDICATIONS FOR POST-DISCHARGE PHARMACOPROPHYLAXIS

Ali Aminian MD[1], Cleveland, OH; Amin Andalib MD, MS, Cleveland, OH; Zhamak Khorgami MD, Cleveland, Ohio; Derrick Cetin DO, Cleveland, OH; Bartolome Burguera MD, PhD, Cleveland, Ohio; John Bartholomew MD, Cleveland, Ohio; Stacy Brethauer MD, Cleveland, OH; Philip Schauer MD, Cleveland, OH
Cleveland Clinic[1]

Introduction: Venous thromboembolism (VTE) remains the most common cause of death after bariatric surgery. Most thromboembolic events occur after hospital discharge, yet few patients receive out-patient pharmacoprophylaxis after hospital discharge. Some surgeons use body mass index (BMI) cutoff value of 50 kg/m^2 in their practice for extended pharmacoprophylaxis. The aim of this study was to determine risk factors for post-discharge VTE after bariatric surgery and to identify potential indications for extended pharmacoprophylaxis.
Methods: From 374 American College of Surgeons-National Surgical Quality Improvement Program (ACS-NSQIP) hospitals, 91,909 patients undergoing elective primary and revisional bariatric surgery were included (2007–2012). Multiple logistic regression analysis with stepwise variable selection was performed and a risk assessment tool was created to predict the risk of post-discharge VTE. The constructed risk model was validated using the 2013 ACS-NSQIP dataset.

Results: The overall 30-day incidence of post-discharge VTE was 0.3% (n=269), including 124 cases of pulmonary embolism. BMI >50 kg/m^2 alone was a poor predictor of post-discharge VTE (c-statistic 0.60) with a sensitivity of 40% and a specificity of 75%. Of the 45 examined variables, the final risk assessment model contained 10 categorical variables including congestive heart failure, paraplegia, return to operating room, dyspnea at rest, non-gastric band surgery, age ≥60 years, male gender, BMI ≥50 kg/m^2, postoperative hospital stay ≥3 days, and operative time ≥3 hours (Table 1). The model demonstrated good calibration (Hosmer-Lemeshow goodness-of-fit test, chi square=4.58, P value=0.71) and discrimination (c-statistic 0.74). The generated risk model was subsequently validated on the validation dataset (2013, n=20,575) which showed a relatively similar performance. Significant risk factors were used to create a user-friendly online risk calculator. When the required patient's values are entered into the calculator, the percent estimate of post-discharge VTE is calculated. Nearly 6.5% and 2.5% of patients had a predicted post-discharge VTE risk of >0.75% and >1%, respectively.
Conclusion: Congestive heart failure, dyspnea at rest, paraplegia and reoperation are associated with the highest risk of post-discharge VTE. Routine post-discharge pharmacoprophylaxis can be considered for high-risk patients (i.e. VTE risk >0.75-1%).

A140

ADJUSTABLE BANDING AROUND PRIOR GASTRIC BYPASS: LONG-TERM CONTINUED WEIGHT-LOSS

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Background: Roux-en-Y gastric bypass (RYGB) has been considered the gold standard operation for the treatment of morbid obesity for over 30 years. However, obesity is a chronic condition and some patients may fail to lose adequate weight while others regain some or all of the weight that they have lost. Treatments for failure of gastric bypass include revision of the pouch/anastomosis, increasing the length of the Roux limb, and endoscopic interventions. However, surgeons have struggled in finding reliable revisional operations that yield acceptable weight loss while minimizing post-operative complications. Laparoscopic adjustable gastric band (LAGB) placement has been shown to be a feasible salvage procedure when placed around the previous RYGB but there is little data in the literature regarding the long-term success and safety of this operation.
Methods: We did a retrospective review of prospectively collected data with patients who underwent the band around bypass (BaB) revision operation. Patients originally presented with weight gain after undergoing RYGB. All patients had a pre-operative barium esophagram. Those with gastro-gastric fistulas or clearly inadequate fundus reduction were treated with stapled revision. Esophagrams that showed mild pouch and/or anastomotic dilatation were selected to undergo a revision in which a LAGB would be placed. We collected information on age, weights, follow-up times, and any complications, including removal of the band. Finally, we performed a phone interview with any patient that had not been seen in the office within the past year to inquire about their current condition.
Results: We reviewed 2094 LAGB cases performed since 2001. A total of 139 LAGBs were placed around a RYGB. All bands were placed laparoscopically with no conversions to open or peri-operative complications. 31 patients had previous open bypasses and 108 patients had laparoscopic bypasses. Patients have been followed for a mean of 2.5 years, with 16 patients having been followed for greater than 5 years, the longest being 10 years. The average pre-RYGB BMI was 54.4 (SE = 0.90), which decreased to 32.1 (0.62) post RYGB. At the time of band, the pre-BaB BMI was 42.2 (0.63), which decreased to 35.7 (0.68) at the present time ($p < 0.05$). Patients who have been followed for more than 5 years (16) have an average BMI of 31.4, and more than 10 years (2) an average BMI of 31.3. Of the 139 bands, 11

(7.9%) have been removed: four due to erosion (2.9%), four due to clinical intolerance (2.9%), two due to slippage (1.4%), and one due to an unrelated illness. Complications requiring removal occurred on average of 2.25 years after band placement (SE = 0.41). There were no records of any additional nutritional deficiencies after band placement.
Conclusion: This study shows that LAGB is not only a safe alternative to complex revisional surgery in patients failing gastric bypass, but also one that yields long-term weight loss success. It can be performed safely, often as a same day procedure. Long-term follow-up demonstrates that the band removal rate is in the lower-end of the literature reported rates for primary LAGB. Because of its safety profile and weight loss result, LAGB around prior RYGB should be considered a long-term solution for patients who have continued to struggle with their weights after a RYGB.

A141
BARIATRIC SURGERY OUTCOMES IN PATIENTS WITH PRIOR FUNDOPLICATION
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Background: Gastroesophageal reflux disease (GERD) is a significant problem in the morbidly obese. Many have undergone esophago-gastric fundoplication with mixed results and some are now pursuing bariatric surgery for weight loss and control of their reflux. The increased risk of surgery in these patients has been documented in a few single institutional series. We sought to understand the impact of previous fundoplication on perioperative outcomes, including weight loss in a multi-institutional study.
Methods: We evaluated 50,843 patients who underwent bariatric surgery (Roux-en-Y gastric bypass (RYGB), gastric band (GB), or sleeve gastrectomy (SG)) from 2008 to 2014 at one of 40 hospitals in the Michigan Bariatric Surgery Collaborative. There were 146 patients who had undergone previous fundoplication. We used multivariable logistic regression to assess risk-adjusted rates of overall and severe complications and excess body weight loss at 1, 2, and 3 years. We then compared outcomes in the fundoplication group to those who had undergone previous bariatric surgery and other minor and major abdominal operations (i.e., cholecystectomy, abdominal wall hernia repair, transplantation).
Results: Patient who underwent previous fundoplication tended to be older females with a lower BMI, but similar comorbidity burden to those without pervious fundoplication. The adjusted overall and severe complication rates were nearly identical to patients undergoing revisional bariatric procedures (Overall complications 15.3% in revisional bariatric surgery vs. 15.2% in previous fundoplication, p=0.57; severe complications 6.5% vs 6.9%, respectively, p=0.48) and significantly greater than any other re-operative group. Excess body weight loss was indistinguishable between patients with and without previous fundoplication at 1, 2, and 3 years—mean weight loss 60% across both groups.
Conclusions: Previous esophago-gastric fundoplication places patients at increased risk of complications after bariatric surgery, yielding adverse event rates that are similar to a widely recognized high-risk group of patients undergoing revisional bariatric surgery. These findings provide important information for patients and providers caring for morbidly obese patients with GERD. It is not only vital when counseling obese patients on an operative approach to their GERD, but also in the risk of proceeding to bariatric surgery.

A142
REVISIONAL SURGERY FOLLOWING LAPAROSCOPIC GASTRIC PLICATION
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Background: Originally described in 1976, the laparoscopic gastric plication (LGP) is a relative new bariatric procedure that has gained popularity over the last few years. Some studies support its simplicity, low cost, reversibility and low complications rate, when compared to other procedures; acceptable weight loss has been also reported. Despite the above, no real consensus exists for this type of surgery and evidence is still unclear, especially in its real efficacy, safety and durability. In this study we analyzed our experience with 100 LGP and revisional surgery in 30 cases. **Methods:** In this retrospective cohort study we analyzed the records of every obese patient submitted to LGP from August 2009 to December 2010. The primary objective was to describe the characteristics and outcomes those patients submitted to revisional surgery. Baseline characteristics (demographic, anthropometric and associated comorbidities) and evolution (weight loss and complications) were obtained and analyzed for every patient. Revisional surgery was documented during follow up, analyzing revision cause, perioperative outcome, type of surgery, complications and weight loss after 18 months. **Results:** One-hundred LGP were performed by the same surgeon in an 18 months period. Seventy-two percent were female, with a preoperative weight and BMI of 122 ± 14.6 kg and 41.2 ± 3.6 kg/m2 respectively. After a mean time of 13.5 months following LGP, 42 patients presented an overall EWL <50%, and 38 had symptoms (nausea, salivation, pain, reflux); in 15 cases both were present. Diabetes and hypertension improvement were observed in 34.7% and 20.6% of cases. Thirty patients accepted revisional surgery (50% because insufficient weight loss, 36.6% because of symptoms, and 13.3% because of both). Weight and BMI before conversion were 111 ± 14.8 kg and 38.6 ± 4.2 kg/m². There were 17 sleeve gastrectomies (LSG) and 13 gastric bypasses (LGBP); both groups with comparable preoperative characteristic (gender, sex, weight, BMI and %EWL). When compared with the LGBP, the LSG group had lower pneumoperitoneum time (48 ± 5.7 vs. 78.9 ± 9.1 min. for the LGBP; p <0.001) and less hospital stay (median of 2 days vs 3 days for the LGBP; p=0.005). There were no conversions to open surgery, and only 1 mayor complication (3%) was observed (early leak of the GY anastomosis) that required reintervention. At 18 months the LGBP group had better weight loss in terms of BMI (24.1 ± 1.1 vs. 25.8 ±1.3 kg/m² for the LSG; p=0.006) and %EWL (75.7 ± 16.1 vs. 61.4 ± 14.5% for the LSG; p=0.008). After 18 months 3 patients presented conversion failure, two in the LSG group and 1 in the LGBP group. There were no loss of follow up and no mortality. **Conclusion:** In our series, LGP presented a high failure rate at one year, with also a high number of symptomatic patients. Revisional surgery proved to be safe and effective. Conversion to LSG was faster and had less hospital stay. Conversion to LGBP had better weight loss results at 18 months.

A143

ENDOSCOPIC STENT MANAGEMENT OF POSTOPERATIVE ANASTOMOTIC LEAKS AND STRICTURES AFTER FOREGUT SURGERY

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Introduction: Anastomotic complications after foregut surgery are a morbid technical complication and include leaks, fistulas, and late strictures. The management of these complications can be challenging, and when possible, it may be desirable to avoid complicated reoperation.
Methods: We performed a retrospective review of a prospectively managed database in order to identify patients who had undergone endoscopic stent placement after foregut surgery. Data was collected on patient demographics, preoperative workup, intraoperative findings, and postoperative outcomes.
Results: From October of 2009 to November of 2014, 49 patients (mean age 51.5; 37 women and 12 men) underwent endoscopic stent

placement for anastomotic complication following upper gastrointestinal (UGI) surgery. The mean time from index operation to endoscopic stent placement was 317 days (range 1-5280 days). 41 (83.7%) of index surgeries were bariatric operations, and the remaining 8 included cancer surgery and peroral endoscopic myotomy (POEM). A total of 56 stents were deployed, and of these the majority were partially covered self-expanding metal stents (81.6%) and the remainder were fully covered self-expanding metal stents (20.4%). Indications for stent placement were leak (n = 27), stricture (n = 15), fistula (including gastrogastric and enterocutaneous, n = 4), anastomotic perforation (n = 1), and bleeding (n = 1). Symptomatic improvement occurred in 73.5% of patients (n = 36) and early oral intake was initiated in 51% of patients (n = 25). 17 patients required subsequent stent exchange for continued symptomatology. No patients required reoperation. Stent migration occurred in 3 patients which was addressed endoscopically. There were no deaths in our series. The average duration of stent placement was 21.2 days (range 1-53 days). The average follow-up was 352.6 days (range 13-1912 days).
Conclusion: We propose that in the appropriate setting, endoscopic stent management of anastomotic complications following upper gastrointestinal surgery is an effective and less invasive therapeutic approach. Advantages include expediting early enteral nutrition and decreased morbidity compared to reoperation.

Paper Session VIII: EMERGING TECHNOLOGIES 3:45pm–5:15pm

A144

ENDOLUMINAL THERAPY FOR THE TREATMENT OF OBESITY (INTRAGASTRIC BALLOON) BRAZILIAN MULTICENTRIC STUDY GROUP

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Background: Intragastric balloon has been used in obese patients as a restrictive gastric procedure inducing early satiety and weight loss. This prospective study assesses both the safety and effectiveness of intragastric Balloon (BIB) in the treatment of obese patients.
Method: From November 2000 to June 2014 after Brazilian Ministry of Health approval of BIB protocol, 2051 overweight and obese patients were treated with the intragastric balloon. 2006 of them completed a 6 month follow-up : 542 male (BMI=42.8 +/- 910.7 kg/m^2) and 1464 female patients (BMI=35.5 +/- 7.8 kg/m^2) mean (BMI=38.5 +/- 9.8 kg/m^2). All patients were encouraged to take part in a multidisciplinary program involving clinical, psychiatric, physical training and dietary approaches.
Results: After 6 months follow-up subjects showed significant reductions in percent excess weight (%EWL= 44.8 +/- 30.5) and percent of total weight loss (%TWL=12.5 +/- 6,7). The main side effects were nausea/vomiting 861 cases, (42%), epigastric pain 430 cases, (21%), requiring prosthesis removal in 31 patients (1.51%). Minor complications were reflux esophagitis 225 cases (11%), and symptomatic gastric stasis 164 cases (8%) which were clinically controlled. Balloon impaction occurred in 3 cases (0.14%) and in one patient (0.04%) there was spontaneous deflation of the balloon leading to a small-bowel sub occlusion which was solved by laparoscopy.
Conclusion: The intragastric balloon (BIB) is effective to temporarily control of obesity, inducing a %EWL of approximately 45%. It is not associated with mortality and shows minimal risk of major complications. Results regarding subsequent follow-up (after BIB removal) are necessary to a better assessment of its effectiveness.

A145

Characterization and Management of Gastrointestinal Accommodative Symptoms Associated with Treatment with a Dual Intragastric Balloon for Obesity

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Chattanooga Bariatrics PLLC[1] Midsouth Bariatrics[2] Scottsdale Healthcare System[3] University of Texas Medical School[4] Greenville Health System[5] University of Minnesota[6] Vanderbilt University[7] Washington University[8] Banner Health[9] ReShape Medical[10]

Background: The ReShape™ Integrated Dual Balloon is a safe and effective nonsurgical treatment for obesity. Following implantation, a period of accommodation involves variable nausea, vomiting and abdominal discomfort. The Rhodes Index of nausea, vomiting and retching (RHODES) and the abdominal pain visual analog scale for assessing abdominal discomfort (APVAS) are validated patient-reported clinical instruments but their use in the assessment of minimally invasive device treatment of obesity has not yet been confirmed.
Methods: Balloon-treated subjects in the REDUCE Pivotal Trial (n=264) underwent endoscopic device insertion plus monthly diet and exercise. Patients were counseled about accommodative symptoms, treated pre-emptively with sedation and anti-nausea drugs, and provided close supportive follow-up. Assessments included adverse events (AE) at all visits and use of RHODES and APVAS prior to insertion, and thereafter at Day 3, and Weeks 1, 4, 12 and 24. Following assessment at 24 weeks, subjects had the device retrieved.
Results: Accommodative symptoms occurred in almost all subjects beginning the day of insertion, and rapidly resolved over the first week of treatment. Younger subjects had significantly more severe symptoms (RHODES $p < 0.0001$, APVAS < 0.0001), and subjects with a higher body weight had significantly less severe symptoms (RHODES = 0.0035). Gender and baseline BMI were not associated with symptom severity. Severity of accommodative symptoms were not associated with the amount of weight loss after 24 weeks of treatment. AE measures consistently overstated the duration and severity of accommodative symptoms. Peak AE intensities were mild (73%), moderate (25%), severe (2%). Mean AE durations were vomiting (7.3 days, range 0-84)), nausea (25.0 days, range 0-190) and abdominal discomfort (35.6 days, range 0-194)). However adverse event data demonstrated nonrandom clustering of resolution dates on follow-up visit dates, resulting in misleadingly long durations when compared to RHODES and APVAS. Accommodative symptoms reported directly by patients using RHODES and APVAS showed that symptoms resolved rapidly, with nausea and vomiting mild or absent (RHODES ≤ 8) in 41% at Day 3 and 86% by Week 1, and abdominal discomfort mild or absent (APVAS ≤ 25) in 44% at Day 3 and 78% by Week 1. Of the 9% of subjects with non-ulcer-related early device retrieval, 12% had associated serious adverse events, 37% had a severe APVAS and 25% had a severe RHODES.
Conclusion: Prospective, concurrent patient-reported data regarding accommodative symptoms generated by RHODES and APVAS is likely to be a more reliable way to assess these responses than third party collection of adverse event data. Traditional AE data does not accurately represent accommodative responses to intragastric devices. Valid data and analysis will be essential to characterize these responses and optimize treatment. Patient preparation, pre-emptive use of sedation and anti-nausea drugs, and close supportive follow-up can manage the accommodative response successfully in most cases.

A146

THE FIRST PROCEDURELESS GASTRIC BALLOON: A PROSPECTIVE STUDY EVALUATING SAFETY, WEIGHT LOSS, METABOLIC PARAMETERS, AND QUALITY OF LIFE

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San Jose, California; Samuel Levy MD[3], Wellesley, Massachusetts, United States; Shantanu Gaur MD[4], Wellesley, MA University of Ostrava[1] Harvard Medical School[2] Allurion Technologies[3] Allurion Technologies, Inc.[4]

Background Traditional gastric balloons for weight loss require endoscopy for placement and removal. Elipse™ (Allurion Technologies, Wellesley, MA USA) is the first procedureless gastric balloon. The balloon is swallowed, resides in the stomach for 3 months, and is then excreted. **Aims** The objectives of this study were to assess the safety of Elipse™ and to measure its effects on weight loss, metabolic parameters, and quality of life in up to 50 patients. We report the complete results of the first 8 patients treated at the time of abstract submission.
Methods Each patient swallowed one Elipse™ device which was filled with 550mL of filling fluid through a thin delivery catheter that was then removed. Each device was designed to remain in the stomach for 3 months and then reproducibly open and pass during the 4th month. Weight was measured every 2 weeks, and metabolic parameters were assessed at baseline and at trial exit. The Impact of Weight on Quality of Life-Lite (IWQOL-Lite) questionnaire was administered at baseline and trial exit to measure the effects of weight loss on Physical Function (PF), Self-Esteem (SE), Sexual Life (SL), Public Distress (PD), Work (W), and Overall (O).
Results Eight patients were enrolled with a mean BMI of 34.3 kg/m^2. All 8 patients successfully swallowed the Elipse™ device. As expected with balloon therapy, all patients experienced nausea and vomiting during the first 48 hours. There were no other adverse events. At 3 months, weight loss was statistically significant. The mean percent total body weight loss was 6% (range: 2.4%-9.7%, $p < 0.01$) and mean percent excess weight loss was 25.4% (range: 6.5%-47.3%, $p < 0.01$). All 8 balloons were uneventfully excreted in the stool. Mean waist circumference and hemoglobin A1c (HgbA1c) were reduced by 6cm ($p < 0.01$) and -0.15% ($p < 0.05$), respectively. Improvements were also seen in triglycerides, HDL, LDL, ALT, and AST. At trial exit, IWQOL-Lite mean scores improved across all domains: +10.5, +14.4, +1.9, +9.6, +6.9, and +9.1 for PF, SE, SL, PD, W, and O, respectively. An improvement of greater than 7.7 in any domain is considered statistically significant.
Conclusions This study demonstrates clinically significant weight loss with Elipse™, the first procedureless gastric balloon. The weight loss was similar to that seen in prior studies of endoscopically placed balloons. There were no serious adverse events. In addition, Elipse™ therapy led to a significant improvement in waist circumference, HgbA1c, and overall quality of life.

A147

ENDOSCOPIC REVISION WITH ARGON PLASMA COAGULATION FOR FAILED ROUX-AND-Y GASTRIC BYPASS (RYGB). FIRST LARGE SERIES

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Introduction: The weight regained has been a described growing problem in patients after bariatric surgery, especially at long term. This weight regained is multifactorial and often associated with dilation of Gastrojejunostomy (GJ), allowing a faster gastric emptying and therefore greater food intake. For the patients with significant weight regain after failed conservative approach, some revisional procedures had be attempted and more recently endoscopic revisional procedures had being described.
Aims: To evaluate the safety and effectiveness of argon plasma coagulation (APC) decreasing the diameter of the gastro-enteric anastomosis in patients who have undergone Roux-and-Y

Gastric Bypass (RYGB) for morbid obesity and regained weight associated to dilation of the GJ.
Methods: From jan-2014 to jan-2015 215 RYGB subjects with weight regain, a dilated anastomosis (more than 18mm in diameter) and at least 2 years from procedure were submitted APC application at GJ had their data reviewed from a prospective designed databank. Interval between an APC session applications was 60 days, with a maximum of 03 applications. APC set was at 2-3L/m with 65-75W. GJ diameter target was to reduced it up to 8-12mm estimated with pre-measured open grasper. At first APC session pre-op weight and BMI, post-op weight nadir, actual weight and BMI and estimated diameter of GJ were the variables collected. At each following session weight, BMI and estimated GJ diameter were taken. Complications during treatment were also collected. Data were analyzed with descriptive statistics, student's t test and Spearman correlation.
Results: Of the 215 patients, 82.8% were women and 17.2% were men. Average time between bariatric surgery and the first APC was 97.42 months (±41.64. Range: 25–175) and average weight regained in this interval was 20,25kg (±9,95. Range: 3-63). The mean diameter of the anastomosis was 24.81mm (±5,34. Range: 16-40) and the average number of APC sessions were 1.36 times (±0,52. Range: 1-3). The average reduction of anastomotic diameter was 13.52mm (±6,19. Range: 4-34) and the final average diameter was 11,3mm (±3,32. Range: 5-28). The average weight loss between the first and last APC was 13,77kg (±6,99. Range: -4,55-35,62) and the average decrease of BMI was 4,66kg/m^2 (±2,55. Range: -1,69-11,07). 69 patients (32,1%) did not achieve the target GJ diameter and 01 patient (0,5%) did not lose weight even with the desired GJ diameter. From the 27 subjects followed up to 6 months no regain weight was noted. Of the 215 patients APC, 35 (16.27%) required dilatation balloon due to symptomatic stenosis at least once. No further complications were reported.
Conclusion: Argon Plasma Coagulation (APC) has been shown to be an effective and safe endoscopic technique for the reduction of gastro enteric anastomosis in patients undergoing bariatric surgery who have regained weight with dilation of the anastomosis. Bibliografy:
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A148

A TWO AND A HALF YEAR FOLLOW UP ON A VERTICAL GASTRIC CLAMP FOR WEIGHT LOSS

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BACKGROUND: Over the last two and one half years a laparoscopically placed silicone covered titanium clamp for weight loss has been placed vertically paralleling the lesser curvature of the stomach. The clamp compartmentalizes the stomach into a medial segment where food would pass and an excluded lateral gastric segment. The clamp at its inferior aspect has an aperture by which gastric juices created by the

fundus and the body can empty into the distal antrum. The aperture also allows endoscopic examination of the excluded segment. The device facilitates weight loss while avoiding altering of the anatomy of the stomach or intestines, avoiding stapling, and avoiding device adjustment. Placement of the clamp can be reversed.
METHODS: Under IRB protocol, from November 2012 to February 2015, 68 patients were implanted at one site. Changes in weight loss, complications and side effects were assessed.
Technique: The posterior limb of the clamp is placed retrogastrically and tunneled to and around the angle of His. The latch on anterior limb of the clamp is then lpassed through the opening on the posterior limb. A 28 F bougie is used. The clamp is sutured in place both posteriorly and anteriorly.
RESULTS: Average age 28.8 years(range 19-38), average weight at baseline was 111.2 kg (range 91-134), average BMI 43.5(range 35-56), average length of stay 1.4 days, 89% females, avg operating time 69 minutes. A 28 F bougie was used. %Excess Weight Loss (%EWL) at 3,6,12,18,24 months respectively were 31.45 (5-57), 44.1 (16-76), 47.7 (23-85), 53.1 (30-86), 58.2 (48-65). There were 9 (13%) pts with slippage/gastric outlet obstruction, 6 were explanted, one was revised but months later required explantation, 2 were treated conservatively. Since the clamp was modified to avoid the tearing of the silicone by the anchoring sutures, there has been no slippage (35 pts). Other adverse events have been mild, early in the post op phase, easily controlled and include: nausea and/or vomiting (13%), gastroesophageal reflux (10%), abdominal pain (5.8%). There have been no erosions, no infections, no deaths, no conversions to open surgery. Four pts have had a moderate Hiatal Hernia fixed at the same time, without any complications
CONCLUSIONS: Further studies are needed to delineate the safety and efficacy of the clamp in the use against morbid obesity and co-morbidities. The vertically placed weight loss clamp is reversible, does not require cutting, stapling or removal of the stomach or intestines, and does not require adjustment.

A149
SUSTAINED WEIGHT LOSS AND SAFETY AT TWO YEARS WITH VAGAL NERVE BLOCK IN THE RECHARGE TRIAL

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Background Vagal nerve block therapy is a FDA approved alternative to conventional bariatric surgery which does not require anatomy changes. One year results were previously reported. The mean percent excess weight loss (%EWL) was 26%EWL and the related serious adverse event (SAE) rate was 3.7% at one year. The purpose of this report was to determine if the meaningful weight loss and safety benefits observed at 12 months were sustained to 24 months.
Methods The one-year double-blind period of the ReCharge Trial has completed and has transitioned to a 5-year, open-label study of the safety and effectiveness of vagal blocking. We report on %EWL, percent total body weight loss (%TBL) and safety in subjects randomized to the active arm of the trial who attended the two-year visit (n=103). Seventy-six percent of subjects remained in the active arm of the trial. Sham subjects were in the process of crossing over to an active device at the 2-year visit.
Results At 2 years, the average weight loss was 21% ± 25%EWL or 8% ±10%TBL. Fifty-eight percent of subjects had at least 5% TBL and 45% had at least 7.5%TBL. Only one major complication occurred between 1 and 2 years. This complication was a gastric perforation that happened during an explant procedure.
Conclusion At an intermediate follow-up of two years, data from the ReCharge Trial demonstrate that vagal blocking provides maintenance of

clinically significant weight loss and a favorable safety profile.

FRIDAY, NOVEMBER 6, 2015

Paper Session IX: PRIMARY PROCEDURES 1:30pm–3:00pm

A150

EMOTIONAL AND REWARD CENTER BRAIN ACTIVATION IN SUCCESSFUL LAPAROSCOPIC ADJUSTABLE GASTRIC BAND (LAGB) PATIENTS: A DOUBLE-BLIND SHAM/DEFLATION STUDY

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Hartford Hospital[1]

Background Bariatric surgery is an effective intervention for morbid obesity, but achieving weight loss maintenance is variable and there is limited understanding of the neuronal mechanisms involved. LAGB is less effective than other procedures (Dogan et al. 2014), but unique in that it allows us to test the effects of a restrictive procedure without confounds of malabsorption, and to reverse the band's action acutely in a double-blind manner. One previous LAGB functional MRI study found decreased activation in paralimbic reward centers and increased activation in cognitive and emotional control regions 12 weeks post-LAGB (Bruce et al., 2012). Another study found that higher activation in cognitive control regions pre-surgically predicted post-surgical weight loss (Ness et al., 2014). However no research has yet tested neuronal responses to band adjustment, which may be involved in successful weight loss. We examined neuronal differences using fMRI in LAGB patients who had their band deflated and sham-deflated.

Method Consented patients were 14 adults (M_{Age}= 42.8 years, SD=9.1; 100% female) who had undergone LAGB at least one year prior to fMRI scanning ($M_{PostSurgery}$=3.9 years, SD=1.6), with an optimally adjusted band and stable weight loss (M_{EWL}=74.1%, SD=16.4). A total of 7 patients were excluded. Patients completed 2 days of scanning after fasting at least 8 hours. One day was an actual deflation day during which approximately 50% of fluid was removed from the band port. A second day involved sham-deflation during which the patient's port was accessed, fluid removed, and immediately replaced with no net change. Patients and assessors were blinded to condition, and deflation/sham-deflation days were counterbalanced. On both days, patients completed a form indicating their estimate (deflation/sham), followed by a food cue paradigm in the scanner where they viewed pictures of unhealthy, healthy, and shuffled food images. BOLD activation to unhealthy versus shuffled images was analyzed using SPM8. Contiguous clusters with $k \geq 10$ were deemed significant at $p < .005$ corrected, determined by 10,000 MonteCarlo simulations (Cox, 1996).

Results In the deflate versus sham condition, patients showed significantly greater activation in thalamus, lingual gyrus, putamen (reward-related regions), superior and inferior frontal gyri, cingulate gyrus (inhibitory and emotional control), and parahippocampal gyrus (reward/ hunger/memory) to unhealthy food images versus shuffled images. Patients correctly identified the procedure as a deflation 66.7% of the time and as sham 75% of the time.

Conclusions Our findings are consistent in identifying brain regions found in other studies regarding obesity and food cues. Because band deflation increased responses in reward-related regions, band inflation may work at a neuronal level by controlling reward responses to food, making regulation of food intake and consequently, weight loss easier to achieve. The increased activation in regions associated with inhibitory and emotional control during band deflation suggests that patients may need to engage cognitive control regions to restrain their food choices. This could be due to the lack of

physical gastric restriction and therefore fear of loss of control. This is the first study to demonstrate that deflation of LAGB leads to brain changes related to reward and emotional control.

A151

AN UNINTENDED CONSEQUENCE OF SLEEVE GASTRECTOMY: PORTOMESENTERIC VENOUS THROMBOSIS

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Henry Ford Health System[1] University of Michigan[2]

Background: A rapid rise in laparoscopic sleeve gastrectomy (SG) has occurred in the field of bariatric surgery over the past several years such that it is now the most common procedure performed in the United States. Although rare, it has been suggested that portomesenteric venous thrombosis (PVT) may be more prevalent after bariatric surgery. The primary goal of this study was to identify risks factors associated with PVT following bariatric surgery.
Methods: We analyzed data from the clinical registry of the Michigan Bariatric Surgery Collaborative for patients undergoing primary bariatric surgery procedures between June 2006 and March 2015. Data collected included patient demographics, clinical characteristics, and comorbid conditions. We examined temporal trends in procedure use and rates of venous thromboembolism (VTE), including deep vein thrombosis (DVT), pulmonary embolism (PE) and PVT. Risk factors for PVT were derived from our database using multivariable logistic regression models.
Results: A total of 52,301 patients underwent bariatric surgery during the study period. This included 23,464 gastric bypass, 10,505 SG, 17,792 adjustable gastric banding, and 540 biliopancreatic diversion with duodenal switch. Prior to 2009, SG accounted for less than 10% of bariatric procedures performed annually in Michigan, but by 2014, SG accounted for 79%. Overall, postoperative VTE was identified in 0.39 % of patients and included 109 DVT, 99 PE and 21 PVT, with both DVT and PE occurring in 24 and both PE and PVT in 2. Among the 21 cases of PVT, there was one associated death. While rates of PE and DVT declined steadily between 2006 and 2014, the rate of PVT increased steadily after 2011, correlating with the rise in use of SG (Figure 1). The only significant predictors for PVT on multivariable analysis were prior VTE (OR 4.8; CI 1.54 − 14.70; p=0.007) and SG (OR 40.9; CI 5.49 − 304.36; p<0.0001),
Conclusions: Sleeve gastrectomy appears to be an independent risk factor for PVT. Further investigation into the etiology of PVT following SG is paramount to define strategies that may mitigate this postoperative complication and its potential sequelae. Extending VTE prophylaxis post discharge in patients with a VTE history may be considered in patients undergoing SG.

A152

LAPAROSCOPIC VERTICAL SLEEVE GASTRECTOMY CAN BE PERFORMED AS AN OUTPATIENT PROCEDURE WITH A LOW 30 DAY READMISSION RATE (AN UPDATE OF A PREVIOUSLY SUBMITTED ABSTRACT)

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BACKGROUND: Traditionally, the vertical sleeve gastrectomy (VSG) has been performed as an inpatient (IP) procedure with a 1-3 day post-operative stay (2.1 day average LOS per MBSAQIP data base). Over the past 5 years our bariatric surgery program has slowly worked on shortening this LOS for patients undergoing VSG from routine admission, to 23 hour stay, to now preferentially performing VSG as an outpatient (OP) procedure with a routine post-operative LOS of 4-8 hours (0.3 days per MBSAQIP data base). This has been accomplished through a very comprehensive educational process (both pre-op and post-op) as well as close clinical patient contact after discharge.

METHODS: We retrospectively reviewed the last 39 months of data on all VSG's done at one institution by one experienced bariatric surgeon (>4200 primary cases over the past 22 years). We selected this time frame since it represented the transition to preferentially performing VSG as an outpatient procedure. All VSG's by 1 surgeon are included in the data over this time frame with the "intention" (OP vs IP) designation determined by the surgeon prior to the procedure. For this data then, "23 hour stays" (often considered OP) are included as IP data. The term "OP" refers to the patient going home the same day as the surgery (typically 4-8 hours post operatively). All patients underwent an UGI study prior to discharge home and were started on liquids immediately after the UGI study. We then reviewed the rate of conversion from OP to IP procedure, the 30 day readmission rate of both groups, as well as the reasons for these readmissions. Finally, we reviewed whether the readmissions could possibly have been prevented with a longer (i.e. IP) hospital stay.

RESULTS: From 10/1/2011 to 12/31/2014 565 total VSG's were performed at 1 institution by 1 surgeon (TWC). This population included 152 males (27%), 413 females (73%), with an average age of 42.7 years (range 20-73 years), average BMI of 45.3 (range 34-74) with the usual range of comorbidities. 26 of the 565 (4.6%) were intended as IP procedures due to a multitude of factors including age (2), severe comorbidities (9), extreme BMI (1), revisional surgery (10), or travel distance (4). 539 of the 565 (95.4%) were intended as OP procedures. Thirteen of the 539 (2.4%) were converted to IP stays due to a number of intraoperative or post-operative factors (Intraoperative Bleeding - 3, PONV - 3, Pain Control - 6, previously unknown gastric surgery - 1). All 13 of these patients were discharged home the following morning. This resulted in a total IP group of 39. 526 of the 539 intended OP (97.6%) were completed as OP procedures with a post-operative stay of 4-8hrs after completion of the surgery. 18 (3.2%) of the total 565 VSG patients required readmission in 30 days. (See Table 2) 12 of the 526 (2.3%) OP group required readmission to the hospital within 30 days. 6 of the 39 (15%) total IP group (26 intended IP and 13 converted to IP) required readmission within 30 days. 4 (1.1% of the total cohort) patients (2 from each group) required a second surgical procedure within 30 days (bottom of Table 2) There was 1 mortality (0.3%) in the entire group. One of the patients with a portal vein thrombosis developed a perforation of the mid small bowel while at home on POD#22 and expired in the Emergency Department at an outside facility.

DISCUSSION: A comparison of the reasons for readmissions of the IP and OP groups is provided in Table 2. There were 12 readmissions from the OP group (3 for abdominal pain, 2 for N/V, 1 for leak, 1 for bloody pleural effusion, and 5 for portal vein thrombosis). We will discuss whether the 12 readmissions in the OP group could potentially been prevented by keeping them in the hospital overnight (or longer).

CONCLUSION: Vertical sleeve gastrectomy can safely and routinely be performed as an OP procedure with a relatively low 30 day readmission rate. Patient education and support are a very important component of this. As with any bariatric procedure, significant complications can occur and must be closely watched for and aggressively treated. Portal vein thrombosis is not an uncommon complication with this procedure and can be catastrophic. This warrants further study. We would recommend doing this procedure as an OP selectively until one is comfortable with this protocal.

A153

ROUX-EN-Y GASTRIC BYPASS 10 YEAR FOLLOW-UP: THE LOST POPULATION

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University of Virginia[1]

Objective(s): The long-term durability of Roux-en-Y Gastric Bypass (RYGB) remains ill-defined in the American population secondary to poor follow-up after bariatric surgery. This study evaluated the lost population to better define the

long term durability of RYGB at a high-volume bariatric surgery center of excellence.
Methods: All patients (n=1,087) undergoing RYGB at a single institution over a 20 year study period (1985-2004) were evaluated using an Institutional Review Board approved prospectively collected database. Univariate differences in preoperative comorbidities, post-operative complications, annual weight-loss and current comorbidities were analyzed to compare 10 year outcomes between patients with routine follow-up and those without. Using Electronic Medical Record (EMR) review for all encounters at our large academic institution and telephone survey we obtained objective data for patients lost to follow-up.
Results: Among 1,087 RYGB patients, 151 (14%) had consistent 10-year follow up in our prospectively collected database with yearly clinic visits beyond 2 years postoperatively. Through EMR review and telephone survey data was collected on an additional 500 (46%) patients resulting in 60% 10 year follow-up after RYGB. There was no statistical difference in any preoperative or postoperative variables between the two groups. The **table** demonstrates no difference in comorbidity prevalence preoperatively or at 10 years between groups. Examination of percent excess BMI lost at yearly intervals in the **figure** revealed no difference between the groups at each interval out to 10 years (p= 0.36).
Conclusions: This study represents the largest 10 year follow-up for RYGB in the American population. We demonstrated there is no difference in 10 year outcomes including weight loss and comorbidity reduction between patients with routine clinic visits and those lost to follow-up. These 10-year data address the gap in knowledge resulting from poor long-term follow-up after bariatric surgery.

A154

CONCURRENT VENTRAL HERNIA REPAIR IN PATIENTS UNDERGOING LAPAROSCOPIC GASTRIC BYPASS AND SLEEVE GASTRECTOMY: A CASE-MATCHED STUDY UTILIZING THE NATIONAL SURGICAL QUALITY IMPROVEMENT PROGRAM (NSQIP) DATABASE

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Introduction: Ventral hernia is a common finding in severely obese patients. Management of hernias during bariatric surgery is controversial since ventral hernia repair (VHR) is technically challenging in this group of patients and it may have suboptimal outcomes. We aimed to assess the 30-day outcomes of concurrent ventral hernia repair (cVHR) with bariatric surgery compared to patients without any other synchronous procedure.
Method: From the American College of Surgeons NSQIP database, we identified severely obese patients with age ≥ 18 years and BMI ≥ 35 kg/m^2 who underwent either primary laparoscopic sleeve gastrectomy (LSG) or laparoscopic Roux-en-Y gastric bypass (LRYGB) in 2012 and 2013. We excluded patients with concurrent procedures other than ventral hernia repair. There were 988 patients with cVHR (open or laparoscopic ventral, umbilical, spigelian, epigastric, incisional, or recurrent incisional). Out of 27,608 patients with bariatric procedures and no VHR (nVHR) or any other procedure, we selected a matched 1:1 control group based on age, BMI, gender, bariatric procedure, and American Society of Anesthesiologists class. Baseline characteristics and 30-day outcomes were compared in two groups.
Results: 1,976 patients (age: 48.2 ± 10.4 year, BMI: 48.1 ± 8.6 kg/m^2, 73.8% female, 55.1% RYGB) were studied in two groups of cVHR and nVHR. The two groups had similar demographics, baseline comorbidities, and type of bariatric procedure. cVHR group had significantly longer operation time (134 vs 88 min, p<0.001), longer hospital stay (2.4 vs 2.1 days, p=0.008), higher reoperation rate (3.0% vs 0.6%, p<0.001), and higher readmission rate (5.9% vs 3.2%, p=0.005). Postoperative complication occurred more frequently in cVHR group (7.1% vs 5.4%, p=0.113) with

significantly higher organ-specific surgical site infection (0.8% vs 0.1%, p=0.019), venous thromboembolism (1.2% vs 0.4%, p=0.038), and bleeding requiring transfusion (2.1% vs 0.8%, p=0.015). In each group, there was one patient with 30-day mortality.
Conclusion: Concurrent VHR may increase 30-day complication, reoperation and readmission rates after laparoscopic bariatric surgery. Management of concurrent hernia at the time of bariatric surgery requires careful clinical decision-making to ensure the benefits of repair outweigh the additional risks.

A155
GASTROESOPHAGEAL MOTILITY AND REFLUX FOLLOWING LAPAROSCOPIC SLEEVE GASTRECTOMY: INTERMEDIATE DATA
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Background: Heartburn symptoms have been observed in a significant number of patients after laparoscopic sleeve gastrectomy (LSG), increasing the risk of developing esophagitis, Barrett's esophagus or adenocarcinoma. Despite the surgical removal of acid-producing cells, management of these symptoms is currently based on empiric acid reduction. In contrast, laparoscopic Roux-en-Y gastric bypass (LRYGB) has been known to reduce or resolve preoperative reflux symptoms. The objectives of this project were to determine if reflux symptoms in patients following LSG and LRYGB were due to alterations in the pH of the refluxate or to perturbations in gastrointestinal motility.
Methods: A prospective cohort study of 16 non-diabetic severely obese patients undergoing LSG or LRYGB underwent manometry, 24h pH and impedance, gastric emptying scintigraphy, gastrin serum level, endoscopy, Gastrointestinal Symptom Rating Scale and Impact of Weight on Quality of Life questionnaires pre-op as well as 3 and 9 months following surgery. A comparison of pre and postoperative data was completed to detect changes in pH, gastrointestinal motility, and physiology of the stomach after surgery.
Results: Preliminary results at 3 month and 9 month follow-up for 5 LRYGB and 5 LSG patients have been collected. Patients were 80% female with a mean age of 46.7±3.3 years, and an initial BMI of 47.5±1.5 kg/m^2. Preoperative endoscopic findings included mild esophagitis (n=2), mild gastritis (n=2), and no hiatal hernias. Two patients had a postoperative staple line bleed with an otherwise uncomplicated postoperative course. BMI significantly decreased in both groups after surgery ($p<0.05$). Postoperative acid reflux episodes and gastric pH significantly decreased after LRYGB ($p<0.01$), while non-acid reflux episodes significantly increased after LSG and LRYGB ($p<0.05$) (Figure 1). Postoperative motility remained stable after surgery in both LRYGB versus LSG: peristalsis (3 month: 80% vs 95%, 9 month: 90% vs 100%, normal: >80%), lower esophageal sphincter (LES) pressure (3 month: 36mmHg vs 45mmHg, 9 month: 30mmHg vs 14mmHg, normal: 13-43mmHg), and LES residual pressure (3 month: 13mmHg vs 9mmHg, 9 month: 7.5mmHg vs 5mmHg, normal: <15mmHg), respectively. In addition, gastrin serum levels also remained stable for LRYGB vs LSG (3 month: 59ng/L vs 67ng/L, 9 month: 57ng/L vs 59ng/L, normal: <100ng/L). However, gastric emptying time significantly decreased after bariatric surgery ($p<0.001$). A significant increase in quality of life after surgery was observed in both groups ($p<0.05$); with LSG patients having a significant increase in reflux symptoms ($p<0.05$), and LRYGB having increasing symptoms of indigestion ($p<0.05$).
Conclusions: Significant alterations in the gastrointestinal physiology occurred after LRYGB and LSG. From our intermediary data, we observed significant improvement in reflux after LRYGB and worsening non-acidic symptomatic reflux after LSG. Interestingly, asymptomatic non-acid reflux episodes significantly increased after LRYGB, which has

yet to be reported in the literature. Esophageal motility, gastrin serum levels, and gastric emptying do not seem to be factors placing patients at risk of reflux. In addition, regardless of increases in gastrointestinal symptoms, quality of life after bariatric surgery significantly increased. In conclusion, final patient data is necessary to substantiate these trends. The results of this study will directly impact the clinical management of these patients. Seeing as many surgeons place both their LSG and LRYGB patients on acid suppressant pharmacotherapies prophylactically after surgery, this management style may be ineffective considering the significant increase in non-acid reflux after both procedures. Ongoing studies at our institution are directed at evaluating the biochemical composition of the non-acidic refluxate (types of bile and pancreatic enzymes present), and its impact on esophageal tissue inflammation and microbiome.

VIDEO SESSIONS

Wednesday, November 4, 2015

Paper Session I: TOP PAPERS AND VIDEOS 10:15am-12:00pm

A156 - VIDEO

OUT OF SIGHT, BUT NOT OUT OF MIND: EXCLUDED STOMACH PATHOLOGY AFTER ROUX-EN-Y GASTRIC BYPASS

Andrew Van Osdol MD[1], La Crosse, WI; Matthew Baker MD[2], La Crosse, WI, USA; Shanu Kothari MD, FACS[2], La Crosse, WI, United States
Gundersen Medical Foundation[1] Gundersen Health System[2]

Background: Pathology of the excluded stomach after Roux-en-Y gastric bypass (RYGB) is rare; moreover, it is often difficult to diagnose due to limited access to the excluded stomach, and presents late in the disease course. Accordingly, it is important to maintain a broad differential diagnosis in any patient with abdominal pathology and a previous RYGB. We present the management of two patients who presented with pathology of the excluded stomach.

Case Summary: Case 1 was a 59-year-old male who presented 12 years after RYGB with sudden onset abdominal pain. He denied nausea, emesis, or changes in bowel function. Physical exam was significant for abdominal tenderness without peritonitis. Computed tomography (CT) imaging demonstrated fluid and air around the duodenum in the sub-hepatic space. The patient underwent diagnostic laparoscopy with adhesiolysis and a perforated duodenal ulcer was identified. Because the omentum would not easily reach the perforated area, it was successfully repaired with a modified Graham patch utilizing the falciform ligament. Postoperatively, he was treated with antibiotics and discharged home on postoperative day 2. Case 2 was a 71-year-old female who had undergone open RYGB at another hospital 30 years prior to presenting to our emergency department. She presented with abdominal pain and nausea without emesis. CT imaging demonstrated significantly dilated proximal colon and likely an obstruction in the mid transverse colon. Colonoscopy was performed which showed edema and possible torsion of the mid transverse colon but no intraluminal mass. Decompression was performed with immediate resolution of symptoms; however, symptoms returned on post-procedure day 3. She was taken to the operating room for laparoscopic exploration revealing dense adhesions between the excluded stomach and transverse colon. On-table transgastric endscopy of the excluded stomach and duodenum showed antral narrowing but normal mucosa. Endoscopic biopsies returned as normal gastric mucosa after frozen section analysis. Antral serosal biopsies were taken and sent for pathologic analysis, which indicated gastric signet ring cell

adenocarcinoma. The patient was transferred to her home institution and died 9 months later. **Conclusions:** Limited access to the excluded stomach after RYGB can present a challenge in identifying and managing pathology. A high index of suspicion is needed to avoid the devastating consequences of delayed diagnosis.

Wednesday, November 4, 2015

Paper Session II: TOP PAPERS AND VIDEOS, cont. 1:30pm-3:00pm

A157 - VIDEO

AN ODYSSEY OF COMPLICATIONS FROM BAND, TO SLEEVE, TO BYPASS; DEFINITIVE LAPAROSCOPIC COMPLETION GASTRECTOMY WITH DISTAL ESOPHAGECTOMY AND ESOPHAGOJEJUNOSTOMY FOR PERSISTENT LEAK

Hideo Takahashi MD[1], Cleveland, Ohio, United States; A. Daniel Guerron MD[1], Cleveland, OH; John Rodriguez MD[1], Cleveland, Ohio; Matthew Kroh MD[1], Cleveland, OH, USA
Bariatric and Metabolic Institute, Digestive Disease Institute, Cleveland Clinic[1]

Introduction: Anastomotic leaks are uncommon yet potentially devastating complications after bariatric surgery. While the initial management includes resuscitation and sepsis control, the definitive management often requires endoscopic or surgical interventions. Surgical revision of the initial surgery may be necessary for chronic, persistent leaks. We present the definitive surgical management of a band converted to sleeve gastrectomy and resultant leak, with attempted endoluminal therapies, converted to Roux-en-Y gastric bypass with persistent leak. Ultimately successful treatment was obtained by laparoscopic completion gastrectomy with distal esophagectomy and Roux-en-Y esophagojejunostomy reconstruction.

Patients and Methods: The patient is a 45-year-old female who underwent laparoscopic adustable gastric banding. Due to her failed weight loss, she underwent band removal and conversion to a sleeve gastrectomy 4 years later, which resulted in a leak at GE junction. She underwent attempted endoluminal treatments, including stent placement, bio-adhesive treatment, and over-the-scope-clip therapy, none of which were successful. Sleeve gastrectomy was converted to a Roux-en Y gastric bypass (RYGB) as an attempt to alleviate the distal obstruction at the incisura, and allow for closure of the leak. However, this failed and the persistent leak at the GE junction led to a gastro-pleural fistula. She underwent decortication through left thoracotomy and left lower lobe resection. She was then referred to our institution for further management of this persistent leak. After addressing nutritional deficiencies, the patient underwent laparoscopic completion gastrectomy with distal esophagectomy and Roux en Y esophagojejunostomy reconstruction, in addition to debridement of the abdominal and mediastinal abscesses.

Results: The case was performed under general anesthesia and in supine position. A total of five trocars were utilized, three 5 mm, one 12mm and one 15 mm. After dissection of dense adhesion from previous surgery and abscess with persistent leak, the Roux limb was completely mobilized and the upper-abdominal abscess cavity was debrided. After identification of the right crus, the distal esophagus was encircled with Penrose drain and the Roux limb was disconnected with a linear stapler. An upper endoscope was introduced to identify the leak. Once identified along the left side of the esophagus, the scope was able to be passed into the mediastinum and peritoneal cavities, under both endoscopic and laparoscopic vision. Previously placed over-the-scope clip was identified and retrieved. Further mobilization of the middle esophagus in the mediastinum was performed. Then, the distal esophagus was transected in clean tissues. The Roux limb was brought up to the distal esophagus for esophagojejunostomy. Esophagojejunostomy was completed with a 25mm EEA circular stapler. A linear stapler was used to close the candy cane. Medial and lateral sutures were placed at the anastomosis and these were sewn to the right and left crus respectively.

Percutaneous endoscopic jejunostomy was placed into the Roux limb for feeding access. The procedure took 2 hours and 40 minutes. Estimated blood loss was 100ml. The postoperative course was uncomplicated. She was discharged home with tube feeding on the postoperative day # 5, and subsequently diet was advanced as an outpatient.

Conclusion: In this video, we have demonstrated the complex surgical revision of a leak after through the gamut of bariatric surgery: band to sleeve, failed endoluminal therapy and conversion of sleeve to RYGB. Durable success was achieved by a completion gastrectomy, distal esophagectomy with Roux-en-Y Esophagojejunostomy reconstruction.

Thursday, November 5, 2015

Video Session A **8:00am-9:45am**

A158

LAPAROSCOPIC ROUX EN Y GASTRIC BYPASS REVERSAL

Maher El Chaar MD, FACS, FASMBS
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Background: Bariatric surgery is the most effective long term treatment for morbid obesity. With the establishment of an accreditation process and the development of laparoscopic approaches to bariatric surgery, in addition to the development of fellowship training, bariatric surgery became a role model for other surgical specialties in terms of efficacy and safety. Despite the outstanding positive results, undesirable side effects can develop. One of the undesirable side effects that is not well reported in the literature is excessive weight loss following gastric bypass surgery. A very small number of patients following gastric bypass surgery become underweight (BMI<18.5) and develop protein calorie malnutrition.

Methods: MH is a 56 year old male (BMI 36.9 kg/m^2, weight 229 lbs) who presented in 2011 with hypertension and uncontrolled diabetes mellitus type 2. He underwent a standard Laparoscopic Roux en-Y Gastric Bypass (LRYGB) with an antecolic antegastric roux limb of 150 cm and a 25 mm circular stapler. His postoperative course was uneventful without any complications. At 6 months his %EWL was 113% (weight 127 lbs) and at 12 months his %EWL was 102% (weight 134 lbs). During his 2 year postoperative visit MH was found to be malnourished (albumin 2.4 g/dL). His BMI was 18.9 kg/m^2 and %EWL was 125% (weight 117 lbs). He underwent an upper endoscopy to rule out an ulcer or a stricture, neither of which were found. MH was then evaluated by our dietician and social worker and ruled out for an eating or psychiatric disorder. He was then started and maintained on high calorie supplementation (2500-3000 calories/day). Despite high caloric supplementation he failed to gain weight. The decision was then made to perform a laparoscopic gastrostomy. After the gastrostomy, the feeding tube was used and he successfully gained around 20 lbs weight over the next 3 months (BMI 22 kg/m^2, weight 136 lbs). MH ultimately succumbed to protein calorie malnutrition again after removal of his gastrostomy tube at which time he had an albumin of 2.6 g/dl, a total protein of 5.6 g/dl and his BMI was 20.2 kg/m^2 (weight 122 lbs). At that point, the decision was made to perform a laparoscopic RYGB reversal.

Results: Our video demonstrates a laparoscopic RYGB reversal which was performed without any complications. After reversal of LRYGB to normal anatomy MH did very well and during the 12 month follow up his BMI was 25 kg/m^2 (weight 155 lbs).

Conclusion: Excessive weight loss following RYGB is a rare entity than can lead to severe protein calorie malnutrition, patient dissatisfaction and poor lifestyle. Following an extensive preoperative work up to rule out psychiatric disorders, eating disorders and also anatomical problems like stricture or chronic ulcers patients who develop excessive weight loss can undergo reversal of the gastric bypass safely and with good outcomes.

A159

A SWEDISH LAPAROSCOPIC DUODENAL SWITCH - THE SOFY-PROCEDURE

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Introduction: The laparoscopic duodenal switch is a standard procedure for morbid obesity with excellent results concerning weight loss, maintenance of weight and resolution of comorbidities. Different variations of the procedure are described in the literature with variable lengths of the limbs and anastomosis techniques. At Torsby Hospital in Sweden, a regional bariatric center, duodenal switch operations have been performed since 2010. Inspired by the gastric bypass technique according to publications by Hans Lönroth from Gothenburg, a novel procedure for duodenal switch has been developed: The SOFY Duodenal Switch. The name refers to the chronology of performing the anastomoses: **S**tarting as a **O**mega-loop, **F**inished as a roux-en-**Y**.
Method: The SOFY Laparoscopic Duodenal Switch procedure is illustrated in a videopresentation.
Results: The main issues of the SOFY Duodenal Switch are the way how to create the duodenoileal anastomosis (DIA), the arrangement of the common channel (CC), the alimentary limb (AL) and the biliary limb (BPL) and the construction of CC-BPL anastomosis. The procedure is performed through a 5- or 6-trocar technique with the patient in the American position. The sleeve gastrectomy is accomplished as a standard procedure with the division of the duodenum 3 cm distally of the pylorus. The CC is measured in 10-cm steps for 100 cm from the ileocecal valve. The location of the CC-BPL anastomosis is marked with two sutures. The AL is measured for 150 cm, the location for the DIA is marked with a suture. The bowel is brought into an antecolic position and placed closely to the postpyloric duodenum as an omega-loop. The DIA is created as an end-to-side anastomosis completely handsewn. The ileum with the marked location for the CC-BPL anastomosis is positioned closely to the BPL six centimeters proximal to the DIA. A side-to-side CC-BPL anastomosis is performed. By dividing the bowel between the two anastomosis the omega-loop-construction is transformed into a Roux-y construction. The mesenteric defects are closed with non-resorbable staples.
Conclusion: In our experience, the SOFY Duodenal Switch with an omega-loop transferred to a Roux-y construction is the most feasible procedure regarding operating time, overview of the anatomically correct positioning of the different limbs and the surgical workflow. The closure of the mesenteric defects is facilitated presumably leading to a lower rate in internal herniation.

A160

A SLEEVE GASTRECTOMY BLAST: HOW LONG SHOULD THE BARIATRIC PATIENT FAST?

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Background: Bariatric surgery patients are a special subset of patients with associated co-morbidities. Co-morbidities such as Diabetes Mellitus can delay gastric emptying in this group of patients. The primary site of surgery in bariatric surgery is the stomach, so a preoperative fasting plan can be crucial to avoid the risk of pulmonary aspiration as well as to prepare our primary site of surgery. Patients are instructed to fast for 8 hours after a large meal. We herein report a case where a 12 hour fast was not enough to evacuate the stomach before a laparoscopic sleeve gastrectomy (LSG) procedure.
Material & Methods: A 39 year old patient who is diabetic and hypertensive was scheduled for a LSG at University of Alexandria Main Hospital, Egypt. Patient weight was 138 kg with a Body mass index of 43.5 kg/ht^2. Patient was anticoagulated and was instructed to fast for 12 hours. Patient was positioned in a split leg position and access to the peritoneal was completed using a 5 trocar technique. On entry

of the abdomen we noticed that the stomach was distended. We started our dissection at the greater curve and we relied on the originally placed nasogastric (NG) tube to evacuate the stomach. Manipulation of stomach became more difficult as we progressed in dissection so we replaced the NG tube with a wider bore one and when that failed we introduced the calibration tube to help in the evacuation. Several attempts failed to fully evacuate the stomach.
Finally after completion of the sleeve gastrectomy and on extraction of the resected stomach, the specimen inadverently burst into the peritoneal cavity leaving food debris and gastric contents. At this moment we understood why all our suction attempts failed to evacuate the stomach. We cleared the peritoneal cavity and irrigated it with 3 liters of normal saline. Two drains were placed one near the gastric pouch and the other in the pelvis.
Results: Patient post operative course was stable, with a daily drain output of 300-400 ml of sero-purulent discharge. Patient developed fever. However, on day 3 one drain was removed and patient was discharged. Six days later the pelvic drain was removed. The patient had an uneventful post operative course thereafter.
Conclusion: A 12-hour fasting protocol might not be enough before bariatric surgery particularly in morbidly obese, diabetic patients. Moreover, bag extraction of the resected stomach could be highly recommended in selected cases.

A161

RARE COMPLICATION POST SLEEVE GASTRECTOMY: ACUTE IRREDUCIBLE PARAESOPHAGEAL HERNIA

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Introduction: Laparoscopic sleeve gastrectomy has been accepted as a standalone effective bariatric procedure. With the increase in the number of cases done worldwide, we are witnessing the emergence of new unexpected complications.
Presentation: A seemingly straight forward sleeve gastrectomy was complicated by acute post-operative vomiting which was diagnosed as an acute intra thoracic migration of part of the new sleeve. Surgical repair was done, with reduction and fixation of the stomach. Patient was subsequently relieved of his symptoms and discharged.
Discussion: This is a rare complication of a relatively well studied operation. Faced with severe post operative repeated vomiting,clinical suspicion and correct use of all para-clinical tools should help delineate the cause
Conclusion: There are 2 similar cases in the litterature both of which had hiatal hernia defect, ours is a young patient with no GERD nor any identifiable hiatal hernia during the first sleeve gastrectomy. We report this video case hoping to expand the existing literature on the topic and to highlight the potential role of gastrophrenic membrane dissection in the occurrence of such complication

A162

EMERGENT LAPAROSCOPIC RECURRENT PARAESOPHAGEAL HERNIA REPAIR AFTER A ROUX-EN-Y GASTRIC BYPASS

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As the number of patients increase who have previously undergone a laparoscopic Roux-en-Y Gastric Bypass (LRYGB) for morbid obesity, so does the amount of late complications associated with this procedure. The presence of GERD after bypass surgery is a very challenging disease process for the bariatric surgeon. Although the LRYGB is the procedure of choice for obese patients with severe reflux, where do we go if the patient develops reflux after the LRYGB. Some have advocated performing a Toupet or a Dor-like wrap using the remnant stomach with little evidence that it works. Others are employing the endoscopic approaches to reflux such as the STRETTA procedure with good results in select patients. Reflux is obviously one of the disease

processes that historically has improved with weight loss, however the surgical management of hiatal hernias when performed in association with LRYGB is still up for debate.
Another complications that requires great technical skill to repair is an incarcarated roux limb in a paraesophageal hernia. We present a case report of a young female who presents with a recurrent roux limb incarceration through her paraesophageal hernia. What are our options to prevent this from occurring multiple times? Case Report This is a case report of a 32yo female who originally underwent a LRYGB with a concomitant primary hiatal hernia repair in May 2010. In 2013 she underwent an internal hernia repair after losing > 50% EWL. A year later in 2014, she incarcerated part of her roux limb along with colon into her paraesophaeal hernia which was repaired laparoscopically with biologic Alloderm mesh reinforcement. She now subsequently presents with acute incarceration of her entire roux limb once again through the paraesophageal hernia. BMI was 36 kg/m^2, presented with acute onset abdominal pain in the left upper quadrant, radiating to her back, associated with sudden onset of shortness of breath, nausea, and vomiting. Past history included lupus, fibromyalgia, and hypothyroidism. She underwent a CT which revealed half of her left lung displaced by her entire roux limb. The herniated roux limb was reduced laparsocpically, the crura was closed with non-absorbable pledgetted sutures, re-inforced with a 4x3cm Alloderm mesh, and a Dor-like wrap to add bulk to try and prevent re-incarceration. At 1 month follow-up she has bounced back once again, tolerating stage 4 bariatric diet, but still requiring Prilosec for heartburn symptoms. In this video we demonstrate the difficult challenge of repairing a recurrent problem with a novel apporach. The formation of the "mini-Dor" fundoplication could serve as a partial anti-reflux procedure, but more importantly in this patient, as a barrier to prevent future incarcerations. These difficult operations, even in an acute setting, can still be performed laparoscopically in experienced hands.

A163

ROBOTIC SLEEVE GASTRECTOMY, HIATAL HERNIA REPAIR AND DOR FUNDOPLICATION IN PATIENT WITH SYMPTOMATIC GERD

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Orlando Regional Medical Center[1]

Introduction: 57 year old female with BMI 39 with severe symptomatic reflux and multiple comorbidities requiring weight loss surgery.
Materials and Methods: Veress needle was inserted in left upper quadrant. Abdomen was insufflated. Trocars were inserted. The hiatus was dissected out using hook electrocautery. The pars was dissected off the esophagus and esophagus was mobilized. Te vagus nerves were visualized and protected. A retroesophageal windiw was created allowing the dissection of both the left and right crus. Sleeve gastrectomy performed in usual fashion with stapling along 34 Fr Edlich tube until high on fundus where extra room was left along tube. Hiatal hernia was repaired primarily with figure of eight Ethibond suture. Sleeve staple line was oversewn with 2-0 Polysorb. Anterior fundoplication was performed by tacking remaining fundus over GE junction to right crura.
Result: Patient was discharged on POD 1 after UGI did not show leak or reflux. She was readmitted 2 weeks later for nausea and vomiting. UGI showed narrowing of the incisura angularis, but the contrast passed without difficulty. Patient underwent endoscopic dilation, and had stent placement.
Conclusion: In patients with severe reflux with morbid obesity unwilling or unable to undergo gastric bypass, sleeve gastrectomy with Dor fundoplication could be a viable alternative.

A164

UNDO OF GASTRIC PLICATION WITH CONVERSION TO SLEEVE GASTRECTOMY

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Introduction Gastric greater curvature plication is a relatively new restrictive procedure that could be potentially reversible, involves no removal of tissue, and does not have a significant malabsorptive component. Although early reports are favorable, weight loss following gastric plication remains unclear long term.
Methods We present a case of a 43 year old female, BMI 31.14 kg/m^2, with weight regain, failure of weight loss, and epigastric pain after laparoscopic gastric plication 1 year prior at an outside institution. Upper gastrointestinal series and esophagogastroduodenoscopy demonstrated postoperative appearance of the stomach consistent with prior gastric plication. Optical and accessory trocars were placed in subxiphoid area, right, mid, left upper quadrant abdomen as well as in the left mid quadrant abdomen. The liver was cranially retracted. With the pylorus identified and the use of cold scissors, the suture line was transected. The plication was undone without any entrance into the gastric lumen. An intraoperative esophagogastroduodenoscopy was performed to verify that no plication remained. Using the endoscope as the guide, sleeve gastrectomy was performed using 4.1 mm linear stapler from the prepyloric area to the GE junction. The staple lines were oversewn with a running vicryl suture. Fibrin glue was placed over the staple line and a drain placed in the subhepatic space.
Results The patient tolerated the procedure well with minimal blood loss. Upper GI with gastrografin demonstrated no sign of leak. The patient was discharged home on post-operative Day 3 with a pureed diet. Two week follow-up was unremarkable.
Conclusion Although gastric plication is associated with minimal risk of leaks and nutritional deficiency, long-term studies are needed to define the role of gastric plication in treating obesity. In comparing gastric plication and sleeve gastrectomy, literature has demonstrated sleeve gastrectomy to achieve a higher weight loss.

A165
REVISIONAL SADI FOR WEIGHT REGAIN IN SLEEVE GASTRECTOMY

David Williams MD[1], New York, NY; Bradley Schwack MD[2], New York, NY; Christine Ren-Fielding MD[2], New York, NY; George Fielding MD[2], New York, NY, USA; Marina Kurian MD[3], New York, NY, USA
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We present the case of a 37 year old female who has regained weight post sleeve gastrectomy. Her current BMI is 48.6. Her past medical history is significant for type II Diabetes Mellitus, HTN and Jehovah's Witness. She had a prior gastric banding which was removed and then had a sleeve. She had lost weight well but regained to her current BMI. After extensive dietary counseling and follow up,a revisional procedure was offered. Part of the preoperative workup included esophagram and upper endoscopy. After review of the available data with the patient, a single anastomosis duodenoileostomy with partial gastrectomy was offered. The video shows the technical details of the procedure.

A166
ENDOLUMINAL CLOSURE OF GASTRO-GASTRIC FISTULA

Esther Wu MD[1], Loma Linda, CA, United States; Renzo Garberoglio MD[2]; Jan-Holly Nicolas MD[1], Loma Linda, CA; Kamran Samakar MD[1], Loma Linda, CA; Marcos Michelotti MD[1], Loma Linda, CA; Keith Scharf DO FACS[1], Loma Linda, CA, U.S.
Loma Linda University Health[1] Loma Linda Univeristy Health[2]

Introduction: Gastro-gastric fistulas (GGF) have a reported rate between 1.3% - 12% after gastric bypass for treatment of morbid obesity. The fistula occurs as a result of either incomplete division of the stomach, staple line migration or as a sequelea of staple line leak. In the acute setting, patients present with tachycardia, fevers, and abdominal pain. However, the development of a gastro-gastric fistula in a chronic setting is more subtle, where

patients may experience weight gain, post-prandial abdominal pain with associated marginal ulcers, and esophageal reflux. Management traditionally consists of surgical revision with associated morbidity. Here we demonstrate a treatment option that consists of endoscopic intervention with complete closure of the fistula with added benefits of same day surgery, decreased operative time, no incisions and minimal morbidity.
Method: A 65 year female presents with 30 lbs weight gain over a 2-year period after her laproscopic Roux-en-Y gastric bypass 11 years ago. She simultaneously presents with post-prandial pain in the epigastrium and esophageal reflux. A large 2cm gastro-gastric fistula was identified via swallow study and endoscopy. On the day of procedure, an endoluminal closure of the fistula was carried out as described by the video. Patient tolerated the procedure well and was discharged home the same day on a full liquid diet.
Results: Complete closure of large gastro-gastric fistula with good tolerance of diet with no morbidity.
Conclusions: Endoluminal closure using a double lumen endoscope is a safe and effective method to treat gastro-gastric fistula as demonstrated by our video. It provides the added benefit of a same day surgery, minimal morbidity, no incisions, quicker return to work and daily activities, decreased operative time and potential cost savings.
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Friday, November 6, 2015

Video Session B **3:45pm–5:15pm**

A167

ENDOSCOPIC MANAGEMENT OF EROSION AFTER BANDED BARIATRIC PROCEDURES

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Gastric banding has been around for many years to aid in weight loss. A variety of materials are used as a primary procedure or to aid in the durability of another bariatric procedure. In the following video, we present our experience with endoscopic management of erosion after banded bariatric procedures. The video highlights our technique for removal of eroded adjustable gastric bands as well as vertical banded gastroplasty with Marlex mesh and silastic rings. Patients were discharged home on the day of the procedure without complication and good resolution of their presenting symptoms. Band erosion following banded bariatric procedures is a well known complication that will be managed by general and bariatric surgeons. Endoscopic management should be considered as an approach for managing this complication.

A168

LAPAROSCOPIC REVISION OF ADJUSTABLE GASTRIC BAND TO TOUPET FUNDOPLICATION WITH HIATAL HERNIA REPAIR

John Primomo MD, Houston, TX,

Introduction: Revision of adjustable gastric bands to alternative procedures is becoming

more prevalent secondary to obstructive symptoms following band placement. Patients with a history of reflux disease prior band placement who present with worsening dysphagia after band placement may benefit from revision to an antireflux procedure to address both their obstructive and reflux symptoms.
Objective: Techniques for gastrohepatic adhesiolysis, identification of adjustable gastric band with removal and revision to a Toupet Fundoplication with Hiatal hernia repair.
Methods: 58 year old female following adjustable band placement in Mexico presented with worsening dysphagia and reflux symptoms that persisted after un-filling the band. Patient had a prior history of reflux disease prior to band placement. Pre- operative workup diagnosed proximal gastric dilation with hiatal hernia and obstructing adjustable band. Mannometry demonstrated esophageal dysmotility. Given insurance limitations and patient preference decision was made to remove her band with revision to a Toupet fundoplication with hiatal hernia repair to address her reflux and esophageal dysmotility.
Results: Dense adhesions were taken down. Overlying scar tissue over the band was divided. Gastrohepatic adhesiolysis was performed in a medial to lateral fashion. Band was removed. Posterior and anterior adhesiolysis of the prior plication and band scar tissue were performed. Following circumferential hiatal dissection and takedown of short gastric arteries, hernia defect was closed posteriorly and a Toupet fundoplication performed.
Conclusion: Identification and division of overlying scar tissue of the prior adjustable gastric band, medial to lateral gastrohepatic adhesiolysis and full circumferential dissection of the hiatus allow for removal of the adjustable gastric band and conversion to a Toupet fundoplication with hiatal hernia repair.

A169

LAPAROSCOPIC REVISION OF CHRONIC MARGINAL ULCER AND BILATERAL TRUNCAL VAGATOMY

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Background: Bariatric surgery is the only proven and effective long term treatment for morbid obesity. In accredited centers, bariatric surgery is performed with very low mortality, morbidity and readmission rates. However, a small number of bariatric patients develop postoperative complications like marginal ulcers. The etiology of marginal ulcers following a Laparoscopic Roux en Y gastric Bypass (LRYGB) is a matter of debate. Many factors are believed to contribute to the development of marginal ulcers such as smoking, ischemia, foreign body reaction, gastro-gastric fistulas, large gastric pouches and tension at the anastomosis. **Methods:** 52 yo female s/p LRYGB in 2006 presented to our center with chronic abdominal pain. Upper endoscopy revealed a marginal ulcer, no evidence of gastrogastric fistula. UGI was also performed and showed a small hiaal hernia but no evidence of a fistula. Patient was not a smoker and denied NSAID use. Patient was managed with high dose PPI for 8 weeks but did not respond. Repeat EGD showed a chronic marginal ulcer. Patient developed dysphagia to solids and liquids and became malnourished. TPN was initiated for nutritional support and the decision was made to revise the anastomsis.
Results: Our video demonstrates the takedown of a chronic marginal ulcer, revision of the gastrojejunostomy anastomosis and the performance of a bilateral trauncal vagatomy. Postoperatively the patient did very well and her pain resolved. TPN was discontinued and patient resumed her diet.
Conclusion: Laparoscopic revision of a chronic marginal ulcer with the performance of a truncal vagotomy is feasible and safe with good postoperative outcome.

A170

LAPAROSCOPIC ROUX-EN-Y GASTRIC BYPASS IN A PATIENT WITH SITUS INVERSUS

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Orlando Regional Medical Center[1]

Introduction : 43 year-old female with body mass index of 45.3kg/m^2 who has undergone multiple attempts at weight loss in the past without success. Patient has a known history of situs inversus. Patient denies any nausea, vomiting, constipation or other symptoms of obstruction. Decision was made to proceed with laparoscopic Roux-en-Y gastric bypass (RYGB).
Material and Methods : Visualization of abdominal cavity revealed the liver and gallbladder on the left side. The stomach, spleen, and ligament of Treitz were on the right side of the abdomen consistent with situs inversus. The left lobe of the liver was retracted anteriorly. The stomach was reversed 180 degrees where the gastroesophageal junction was in the left upper quadrant and the grater curvature on the right side. The omentum was taken down for mobilization. Next, a window was created between the lesser curvature of the stomach and lesser omentum. The stomach was transected and a pouch was created. The ligament of Treitz in the right upper quadrant was identified, jejunum was run 50cm distally and transected with a linear stapler. The afferent limb was followed 75cm where a jejunojejunostomy was performed. The mesenteric defect was then closed. Next, the Roux limb was brought up in an antecolic, antigastric fashion, tension free, to the gastric pouch. Following this, gastrojejunostomy was created by making enterotomies in the pouch and Roux-limb. The Peterson's defect was closed. The anastomosis were tested with methylene blue and air.
Result: Patient did well postoperatively. Upper gastrointestinal series and methylene blue test were negative on POD 1, discharged on POD 2 on phase 1 diet.
Conclusion: Laparoscopic RYGB may be feasible in patients with situs inversus.

A171
BARIATRIC SURGERY COMPLICATIONS: DIAGNOSIS AND MANAGEMENT OF THE GASTROGASTRIC FISTULA
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Introduction: As bariatric surgery is becoming more commonplace, surgeons are becoming more familiar with management of long-term complications of bariatric surgery. We discuss the case of a patient who presented with weight gain 15 years after a Roux-en-y gastric bypass.
Case description: This is a 54-year-old female who had an uncomplicated open Roux-en-y gastric bypass in 2000, but began suddenly regaining weight in 2012. She had no other symptoms. She underwent upper gastrointestinal radiography, which was normal. At a second clinic evaluation, a transnasal endoscopy (TNE) was performed for mild reflux on radiography. TNE demonstrated a gastro-gastric fistula (GGF), a large gastric pouch, and a small hiatal hernia. She chose to undergo a pouch gastroplasty with remnant gastrectomy. This was done laparoscopically with a concurrent lysis of adhesions. The fistula was identified endoscopically intraoperatively. The gastroplasty was performed resecting a segment of the enlarged gastric pouch in addition to the remnant fundus/cardia. A post-operative upper gastrointestinal radiography appeared normal and the patient tolerated liquids and was discharged home.
Discussion: The incidence of post bariatric surgery gastrogastric fistula is reported to be between 1.1% -1.8% in several studies[1-4]. Most patients present with obesity recidivism and abdominal pain. Empirically, GGF may be associated with small or subclinical leaks and marginal ulcers. These inflammation associated GGFs may also be more likely to present sooner (a mean time to presentation of less than 3 months) and may resolve with proton pump inhibitor (PPI) therapy to reduce inflammatory changes and allow autonomous healing of the fistula tract[1,2]. Endoscopic treatment with clips or covered stents is also emerging as an option when a small leak is suspected[5,6]. The role of these stents is still being investigated. In cases where PPI therapy fails or there are no signs of inflammatory disease, a remnant gastrectomy or pouch gastroplasty should be considered[4]. This case demonstrated a patient without any active inflammatory process in whom a gastroplasty and remnant gastrectomy resolved symptoms and restored restriction. Additionally, an in office transnasal endoscopy may be a novel way

to aide diagnosis of post-bariatric surgery complaints concerning for marginal ulcers, fistulization or other technical issues[7]. Investigations are currently underway to identify the utility of the transnasal endoscopy in the both the pre and post bariatric surgery patient[8].

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A172

MANAGEMENT TECHNIQUES FOR FAILED VERTICAL BANDED GASTROPLASTY.

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Introduction: Initial gastroplasty was performed in 1971 by Mason and Printen. The procedure was based solely upon restriction. The procedure was performed in significant numbers from inception till 1990's. Initial success with a change in weight was similar to LAGB but inferior to LRGYB, but maladaptive eating resulted in weight regain, as well as other problems associated with the procedure such as pouch dilation, bad erosions, outlet stenosis and reflux. Common scenarios resulting in revision are conditioned to patient's current BMI and operative risk. In this video we present several scenarios and its revisional management.
Methods/Scenarios: Scenario #1 - High BMI, Reasonable operative risk with or without anatomic abnormality conversion to LRYGB. Laparoscopic revision. Adhesions are dissected off the left lobe of the liver and anatomy is delineated. The silastic band and staple line is identified. Identification of reliable landmarks (right crus) is performed. The angle of His is mobilize by taking short gastric vessels. The left crura is identified. The lesser sac is entered. The left gastric identified and preserved. A new pouch is created within the old pouch excluding the previous VBG staple line. The old VBG staple lines and Silastic ring/marlex mesh are removed to avoid nidus for chronic infection. The staples lines can isolate stomach creating mucocele and resultant leak. Complete revision by performing a leak test and reconstruct Roux-en-Y. Scenario #2 - Low BMI or mentally adverse risk, reasonable/marginal operative risk with anatomic abnormality conversion to laparoscopic assisted transgastric reversal of VBG. Laparoscopic revision. The

stomach is dissected off the liver. The band is identified and removed. The greater curvature of the stomach is mobilize. Transcutaneous sutures are use to appose the stomach to the abdominal wall in preparation for intragastric trocar placement. A bowel clamp is placed to prevent loss of domain from bowel distention that hampers closure of transgastric trocar sites. Two transgatric trocars (5mm, 12mm) are placed. The 12 mm is placed distally to facilitate proper angle to VBG outlet. Pneumogastrium is established at 10mmHG and the pneumoperitoneum released. The VBG outlet is identified. Serial division of the outlet is performed with staplers to open the VBG pouch. Scenario #3 - High/Adverse operative risk with significant anatomic abnormality. Revised using endoscopic stenting causing forced erosion of band to reverse VBG. Fluoroscopic assisted placement of covered esophageal stent across the stenosis. The stent placement creates a forced erosion of the band by necrosising the tissue between the band and the stent over a 2-3 week period. The stent is removed under endoscopic guidance. The silastic band is visualized and assesed if its ready to retrieve. Using a double channel scope a gap in the band where the stitch is accesible is identified and transected with scissors. The band is removed and another stent is placed to avoid ischemic stricture.

Conclusion: In this video we have demonstrated three scenarios of VBG revision in patients with different surgical risks and BMI changes. This video displays techniques necessary for the bariatric surgeon facing complications from historical weight loss procedures.

A173

MANAGEMENT MODALITIES IN SLIPPED GASTRIC BAND

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Background: Gastric band slippage is one of the possible complications of Laparoscopic Gastric Band (LGB). Band slippage can present as an emergency and can have some drastic consequences. We herein report the different treatment modalities of slipped gastric band.

Material & Methods: A retrospective study of all patients that presented with slipped gastric band during the period between May 2013 and January 2015 at University of Alexandria, Egypt. All patients were evaluated at the time of presentation by radiological studies and upper gastrointestinal endoscopy. On diagnosis all bands were deflated in an attempt to relieve symptoms. After patient counseling and band position evaluation patients were consented for either removal or repositioning of the band.

Results: One Hundred patients were included in this study. Gastric band slippage rate was 8%. All patients presented with signs of gastric obstruction and expressed a long history of intermittent vomiting attacks. All patients were subjected to a complete gastric band deflation on presentation. Band deflation was successful at relief of symptoms in two patients and reversal of their band slippage. However, both patients came back with band re-slippage within the same month. The other six patients had persistent band slippage in spite of complete band deflation. Three of the eight patients had a successful band repositioning while the rest had their gastric bands removed.

Conclusion: Gastric band slippage can be a serious complication of LGB. Repeated vomiting can be a significant risk factor for band slippage. Moreover, band repositioning can be a safe and feasible option in the management of slipped gastric band.

A174

LAPAROSCOPIC ROUX-EN-Y GASTRIC BYPASS FOR TREATMENT OF SEVERE REFLUX FOLLOWING NISSEN FUNDOPLICATION AND MULTIPLE HIATAL REPAIRS

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Introduction: Obesity is a major risk factor for hiatal hernias. High recurrence rates are reported following Nissen fundoplication in morbidly obese patients. Following a failed fundoplication, an acid diverting procedure (i.e. RYGB) is highly successful in reflux remission and weight loss.
Methods: We present a case of a 59 year old obese female, BMI 44 kg/m^2, with recurrent hiatal hernias. History includes a gastric adjustable band placement and hiatal hernia repair 2 years prior. The gastric band was removed due to severe reflux. A hiatal hernia repair with Nissen fundoplication was also performed. She continued to experience recurrent reflux symptoms and weight regain. CT scan demonstrated a moderate sliding hiatal hernia. Intraoperatively, the Nissen wrap was taken down from the chest cavity, and the hiatal defect was closed. A side-to-side gastrojejunostomy was performed, and then a side-to-side jejunojejunostomy was created 100 cm distal from the gastrojejunostomy.
Results: Following an uneventful post operative course, she was discharged on post operative day 2 tolerating a Phase II bariatric diet. On 2 week follow-up, reflux symptoms have resolved.
Conclusion: RYGB is an effective option for recurrent gastroesophageal reflux. Gastrohepatic adhesiolysis with takedown of the fundoplication is vital for success. A partial gastrectomy is required when ischemia in the remnant gastric pouch is present.

A175

LAPAROSCOPIC REPAIR OF A PERFORATED GASTROJEJUNAL ULCER POST MINI GASTRIC BYPASS

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A 32 year old male patient presented to our hospital for acute epigastric pain. Patient underwent laparoscopic mini gastric bypass in our center 6 months ago, he is a heavy smoker and a social drinker, he is on multivitamins calcium and iron as per our center protocol. A diagnosis of perforated gastrojejunal anastomotic ulcer was suspected and confirmed by abdominal CT scanner. After a failed trial of conservative management for 48 hours . A diagnostic laparoscopy was decided . A perforation in the gastrojejunostomy was found and suture repaired. On Day two post operatively a gastrographin swallow showed proper sealing and patient was started on oral feeding. Drains were removed and he was discharged on long term double dose proton pump inhibitor on the fourth day. He received proper smoking and alcohol cessation counseling. Mini gastric bypass is a relatively young procedure; recently Chevalier reported 2 cases of perforation in 1000 mini gastric bypass performed, they were treated with laparotomy and T tube drainage, both cases were heavy smokers. Our case highlights the deleterious effect of smoking on anastomotic ulcer pathogenesis, and the role of early diagnostic laparoscopy and repair in optimal conditions.

Integrated Health Sessions

Wednesday, November 4, 2015

Integrated Health Abstract Session **10:15am-12:00pm**

A176

CHANGES IN SEXUAL LIFE FOLLOWING BARIATRIC SURGERY

Kristine Steffen PharmD PhD[1], Fargo, ND, USA; Wendy King PhD, Pittsburgh PA; Gretchen White MPH, Pittsburgh PA; Leslee Subak MD, San Francisco CA; JAMES MITCHELL MD, Fargo ND; Anita Courcoulas MD, David Flum MD, Gladys Strain PhD, RD, FTOS, New York, New York; David Sarwer PhD, Philadelphia PA; Ronette Kolotkin PhD, Durham NC; Walter Pories MD, Greenville NC;

Alison Huang MD, San Francisco CA; North Dakota State University and Neurop[1]

Background: Limited research suggests that bariatric surgery is associated with short-term Improvements in sexual function. Even less is known about persistence of improvements over time or predictors of improvement after surgery. The objectives of this study were to describe changes in sexual life through five years of follow-up and to identify variables associated with improvement in a large cohort of bariatric weight loss surgery (WLS) patients.
Methods: 2036 of 2458 participants (79% female, median BMI 46 kg/m2) enrolled in the longitudinal Assessment of Bariatric Surgery-2 study completed a questionnaire assessing past month sexual desire, activity, and satisfaction and the impact of physical health on sexual function (compiled from several validated instruments) pre-WLS and at ≥1 annual follow-up assessment over five years. Data were also collected on sociodemographics, medication use, depressive symptoms, and medical comorbidity. Analyses were stratified by sex. Change in sexual life over time was tested with mixed models. Pairwise comparisons were made between
baseline and year 1 (to assess short-term effect), baseline and year 5 (to assess longer-term effect), and years 1 and 5 (to determine if the short and longer term effect differed). P values were adjusted for multiple comparisons. Mixed models were also used to identify factors independently related to clinically meaningful pre- to post-surgery improvement in overall satisfaction with sexual life among those who were not at least 'moderately satisfied' at baseline.
Results: Following surgery, the degree to which physical health limited sexual activity decreased, the frequency of sexual desire and sexual activity increased, and satisfaction with sexual life increased (table 1). For example, a t baseline, 61% of men and 49% of women indicated being moderately to very dissatisfied with their overall sexual life. These rates were reduced to 30% and 27%, respectively at year 5. Among women, there was a significant worsening in the degree to which physical health limited sexual activity and in overall satisfaction with sexual life between years one and five post-WLS (p for both<.05), whereas frequency of sexual desire and activity did not significantly differ between one and five years.
Trends over time were similar among men; however due to a smaller sample size there was less power to detect small changes over time. Among women, Hispanic ethnicity (RR=1.32 vs. non-Hispanic), fewer depressive symptoms at baseline (RR=1.15 per 5 Beck depression Inventory (BDI) points lower), greater pre- to post-surgery decrease in depressive symptoms (RR=1.13 per 5 BDI points fewer), greater weight loss (RR=1.04 per 5%), and undergoing Laparoscopic Adjustable Gastric Banding (RR=1.19 vs. Roux-en-Y Gastric Bypass) were independently related to improvement in satisfaction with sexual life (p for all <.05). Among men, higher
baseline BMI (RR=1.04 per 5 kg/m2), fewer depressive symptoms at baseline (RR=1.25 per 5 BDI points lower) and greater pre- to post-surgery decrease in depressive symptoms (RR=1.22 per 5 BDI points fewer) were independently related to improvement in satisfaction with sexual life.
Conclusion: Overall, sexual life improves within a year following WLS, with clinically meaningful improvements still realized five years later, although improvements may deteriorate in specific domains of sexual life over time. Long-term improvement in sexual function may be an important benefit of bariatric surgery

A177

EFFECT OF PREOPERATIVE HEMOGLOBIN A1C ON BARIATRIC SURGERY OUTCOMES

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University of Michigan[1]

Background: Bariatric or metabolic surgery is increasingly used as an adjunct to the treatment of diabetes. Many studies have demonstrated

surgery to be superior to medical management. However, many programs require that patients meet a target hemoglobin A1c (Hgb A1c) level. As a result, some patients are denied surgery due to an inability to achieve an arbitrary Hgb A1c level. We sought to understand the impact of preoperative A1c levels on perioperative outcomes, including diabetes resolution and weight loss.
Methods: We analyzed 8,083 patients who underwent bariatric surgery (Roux-en-Y gastric bypass (RYGB), gastric band (GB), or sleeve gastrectomy (SG)) from 2013 to 2014 at one of 40 hospitals in the Michigan Bariatric Surgery Collaborative. We stratified patients into 3 A1c groups -- <6, 6 to 9, and ≥9. We used multivariate logistic regression to assess hospital variation in risk-adjusted rates of overall and serious 30-day complications and their relationship with co-morbidity remission.
Results: Overall, 5.4% of patients experienced perioperative complications. There was no statistically significant difference in the rates of overall or serious complications between the three groups of patients across all three operations, except in the highest A1c group in SG. There was a nearly 4-fold increase in serious complications in patients with A1c≥9 undergoing a SG (OR 3.59, 95% CI [1.20-10.78]). The use of oral hypoglycemics did not decline in this same group (OR 0.11, 95% CI [0.04-0.29]), along with the use of insulin, or antihypertensives. Finally, there was a stepwise increase in the mean pounds lost at one-year with RYGB and SG, but not GB.
Conclusions: Increased Hgb A1c levels are not associated with an increased rate of adverse events following bariatric surgery. Rather, they are associated with lower rates of diabetes, hypertension, and hypercholesterolemia remission. Finally, one year weight loss was significantly increased in the highest A1c group. Overall, there are mixed postoperative outcomes in patients with poorly controlled preoperative diabetes.

A178

IMPROVED PERIOPERATIVE SUPPORTIVE CARE IS ASSOCIATED WITH REDUCED READMISSION RATE AFTER BARIATRIC SURGERY

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Johns Hopkins Medical Institutes[1]

Background: Postoperative readmission rates are one of the most significant indicators of healthcare quality in surgical practice. Despite marked decreases in the mortality and morbidity of bariatric surgery over the past decade, readmissions continue to pose a challenge to centers around the world. The Decreasing Readmissions through Opportunities Provided (DROP) program has recently been implemented by the American Society for Metabolic and Bariatric Surgery (ASMBS), but its effectiveness and clinical applicability remain unknown. In 2012, our bariatric center phased-in several targeted interventions similar to and consistent with the ASMBS DROP program recommendations; 1) Improved inpatient and outpatient educational sessions; 2) Post discharge phone calls by registered nurses and dieticians; 3) Enhanced use of clinic/home IV rehydration and; 4) Early follow up clinic visit. We hypothesized that these interventions would result in sustained improvements in readmission rates after bariatric surgery. **Methods**: We retrospectively analyzed all patients who underwent any bariatric procedure at our center from 2010 to 2014. We performed Pearson's Chi^2 test and analysis of variance (ANOVA) to compare between the years of initial operation to determine if the intervention measures implemented in 2012 had any significant effect on readmission rates. A multivariate logistic regression model was constructed to determine the impact of surgery date (before 2012 vs 2012, 2013 and 2014), type of surgery (gastric bypass; vertical sleeve gastrectomy; gastric band and; other), approach used (laparoscopic vs open) and conversion surgery (primary vs revisional) on readmission rates (30 days within date of operation; includes inpatients as well as 23 hr observation). **Results**: The total number of surgeries performed was 1,767 (gastric bypass 55.1%; sleeve gastrectomy 34.5%; gastric band

8.3% and; other 2.1%) and the readmission rate was 8.4% (inpatients 5.6%; observations 2.9%; Figure). The before and after targeted intervention rate of readmissions was 11.5% and 5.1% respectively. Pearson's Chi^2 (before vs after, P<.0001) and ANOVA test was significant for differences across the 2010-14 year period (P<.0001). The 2012, 2013 and 2014 readmission rates were 37%, 70% and 63% lower than the 2010-2011 rate (OR 0.63, 95%CI 0.40-0.99, P=.049; OR 0.30, 95%CI 0.17-0.55, P<.0001; OR 0.37, 95%CI 0.20-0.68, P=.001, respectively). The laparoscopic approach was associated with a 36% reduction in readmission rate (OR 0.64, 95%CI 0.42-0.98, P=.040; Table). **Conclusion**: Targeted clinical interventions, similar to those advocated by the DROP program, including enhanced patient education, post discharge phone calls, home IV hydration and early clinic visits, show promising real life applicability and are associated with lower readmission/observation rates after bariatric surgery.

A179

THE STATE OF WEIGHT LOSS SURGERY PATIENT EDUCATION: AN EXAMINATION OF THE EVIDENCE

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BACKGROUND: Recidivism following bariatric surgery can result from failed behavioral modifications. Education plays a key role in adherence to lifestyle changes after Weight Loss Surgery (WLS). Providing effective education before and after WLS may decrease recidivism rates and improve outcome. The purpose of this evidence-based literature review was to analyze educational practices in bariatric centers.
METHODS: Literature was evaluated for pre- and postoperative WLS education practices offered in various bariatric centers. CINAHL® and PubMed© were searched using specific terms for peer-reviewed studies available in English about WLS patient education practices. Publications were: 1) rated with Advancing Research and Clinical practice through Close collaboration (ARCC) model levels of evidence hierarchy, 2) separated into WLS phases, and 3) analyzed and synthesized in regards to curriculum, teaching methods and delivery.
RESULTS: Searches yielded twenty-two publications. Articles were rated using the ARCC Model—Levels I-III (n=5), IV-VII (n=16), and two were not ratable. Preoperative education studies (n=14) were reported more than postoperative (n=8). Pre- and postoperative education programs varied in curriculum, teaching methods and educator. Topics varied in depth, however; commonalities were surgical procedure, nutrition, activity and psychosocial behaviors. Preoperative education was mostly provided in small groups, while individual sessions occurred postoperatively. Lecture and discussion were typical pedagogies, provided by a myriad of experts. Written or web-based aides supported learning needs in both phases.
CONCLUSION: This literature synthesis found education in centers greatly varies by curriculum, dose, timing and intensity. Teaching methods were limited to passive learning. In 2014, MBSAQIP created patient education standards. These results intend to inform the Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program (MBSAQIP) standards with existing evidence and recommend continued testing to develop quality, cost-effective, patient-centered programs.

A180

EFFECT OF A 12-WEEK MULTIDISCIPLINARY TREATMENT FOR FAILED BARIATRIC SURGERY

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ABC Medical Center[1] The Obesity Clinic. ABC Medical Center[2] INCMNSZ[3]

Introduction. Bariatric surgery remains the most effective treatment for patients with severe obesity. However, results may be suboptimal, either due to insufficient weight loss or weight regain in some patients. A multidisciplinary approach has been widely recommended for

failed bariatric surgery, without a clear demonstration of the results. The aim of this study is to evaluate the impact of a 12 week multidisciplinary strategy on weight loss in a group of patients with failed bariatric surgery.
Patients and Methods. Seventeen patients who failed after a Roux-en-Y Gastric bypass were included. Failure was considered if the EBWL was <50% or if patients experienced weight regain ≥15% from the nadir of weight loss. The multidisciplinary program consisted of nutritional intervention, psychoeducative group sessions, and a supervised program of exercise. Patients were placed on a diet with total daily calories of 1400 Cal/day for men and 1200 Cal/day for women, comprising 4 meals/day, high in fiber (30 grs/day), protein (1.5 g/kg ideal body weight) and calcium (3 dairy portions). Patients were advised to avoid high glycemic index meals and refined carbohydrates. Diet adherence was measured every week in a scale of 0 to 3. Adherence was labeled as 0 when there was null adherence, 1 or poor when patients did not meet meal portions and recommended food types, but met diet characteristics, 2 or acceptable was defined as patients not meeting meal portions but complying with food types and diet characteristics and 3 or good adherence, when portions, food types and diet characteristics were closely followed. Psychological intervention included 12 weekly group sessions of one hour each. The topics of sessions were: a) obesity and overweight, b) setting targets and objectives, c) appetite trigger factors, d) changing attitudes and behavior, e) the importance to say no, f) emotional intelligence, g) self-image h) our relationship with food, i) anxiety, j) food addiction, k) managing the addiction, and l) relapse prevention. Motivation was assessed before and after intervention with a visual analogue scale. Exercise training consisted of a 12th week aerobic exercise, 5 days/week, 60 minutes/day, with an intensity of 75-80% of the age specific maximum heart rate. Exercise intensity was monitored with a personal heart rate monitor (polar FT4). All participants had one supervised training session per week. The pulsometer was checked weekly to record the exercise sessions. Descriptive statistics and t student for paired samples were done. SPSS Statistics version 21.0 was used for statistical analysis. Any p value ≤0.05 was considered as statistically significant.
Results. A total of 17 patients entered the program. There were 9 patients who abandoned the treatment, within the first 4 week. From the total of 8 participants who finished the program, there were 6 women and 2 men with a mean age of 51.37±10.43 years, and a mean BMI of 34.2±4.7 Kg/$m^{2.}$ Mean fat mass (FM) was 44.3±8.3 kg, and mean waist circumference 110±13.4cm. At the end of the program, there was a mean weight reduction of 3.3 Kg ($p<0.007$), BMI reduced from 34.2±4.7 Kg/m^2 to 33.4±5.3 Kg/m^2 ($p<0.031$) and FM from 43.8±7.8 kg to 43.6±6.1 kg ($p<0.017$). Patients exhibited a 3.5±4.05 cm decrease in waist circumference. Adherence to both, diet and exercise was poor throughout the intervention. During follow up, psychological self-efficacy increased from 8.3±2.4 to 8.7±1.4 and self-confidence diminished from 7.8±1.4 to 6.8±3.7 ($p<0.001$). Exercise frequency increased from 0 to 2.5±1.5 days/week, time of exercise increased from 0 to 126±93.3 minutes/week and energy expenditure during exercise increased from 0 to 675±534.4 cal/week.
Conclusions. A 12 week multidisciplinary strategy is marginally effective in reducing weight, BMI, fat mass and anthropometric measures. Lack of adherence is the main cause of the result. Patients who fail to bariatric surgery seem have psychological conditions that limit the adherence to recommendations established by a multidisciplinary team. Better strategies for the evaluation and treatment of this particular group are needed.

A181

PSYCHIATRIC DISORDERS AND WEIGHT CHANGE IN A PROSPECTIVE STUDY OF BARIATRIC SURGERY PATIENTS: A 3-YEAR FOLLOW-UP

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Duquesne University[1] Epidemiology, University of Pittsburg[2] Columbia University College of Physic[3] Department of Psychiatry, University[4] Biostatistics, University of Pittsbur[5] Sanford Health System[6] Division of Digestive Diseases and Nu[7] Neuropsychiatric Research Institute,[8]

Background. Several studies have found that rates of lifetime and current psychiatric disorders are substantial among candidates for bariatric surgery. However, few have used structured diagnostic instruments to document changes in Axis I psychiatric disorders following bariatric surgery and to examine their relationship with post-surgery outcomes. Given the variability in post-surgery weight loss, even among patients undergoing the same procedure, we investigated whether history of or current psychiatric disorders were independently related to weight loss.

Methods. As part of a 3-site substudy of the Longitudinal Assessment of Bariatric Surgery (LABS) Research Consortium, 199 patients were interviewed using the Structured Clinical Interview for DSM-IV Patient Version to assess Axis I psychiatric disorders, independent of clinical care, prior to Roux-en-Y Gastric Bypass (RYGB) or Laparoscopic Adjustable Gastric Band (LAGB). At 2 or 3 years post-surgery, 165 (83%) patients completed a follow-up assessment. Pre-surgery, patients had a median body mass index (BMI) of 44.8 kg/m^2 and a median age of 46 years. The sample was 92.7% white and 81.1% female. Mixed models were used to test change in prevalence of psychiatric disorders over time, and to test and estimate associations between any mood disorder, any anxiety disorder, any substance use disorder and any eating disorder, and post-surgery weight change, controlling for potential confounders. First, pre-surgery psychiatric status (current, and lifetime history but not current, vs. no history) was examined; then post-surgery psychiatric status (current), controlling for pre-surgery status.

Results. Given the sample size and low prevalence of some disorders, we had limited statistical power to detect differences between time points. However, compared with status pre-surgery, the prevalence of any Axis I psychiatric disorder was significantly lower at 2 and 3 years post-surgery [30.2% vs. 16.8% (P=.003) and 18.4% (P=.012), respectively]. Additionally, the rate of any anxiety disorder was significantly lower at year 3 vs. pre-surgery, and the rate of any eating disorder was lower at year 2 vs. pre-surgery. For all classes of psychiatric disorders, rates of remission far exceeded incidence after surgery (e.g., remission of any psychiatric disorder was 62.2% at year 2 and 54.0% at year 3, while incidence was 8.6% and 7.6%, respectively). Only two participants (1.2%) at year 2 and four participants (3.1%) at 3 year reported eating disorders (all binge eating disorder), all but one of whom reported binge eating disorder prior to surgery. After adjusting for site, age, sex, race, pre-surgery BMI, and surgical procedure, a pre-surgery diagnosis of mood (P=0.71), anxiety (P=0.19), eating (P=0.99) or substance use disorders (P=0.16) (lifetime or current) were not related to weight change, nor were concurrent post-surgery mood (P=0.91) or anxiety disorders (P=0.12). Having a concurrent post-surgery eating disorder was independently associated with less weight loss at 2 or 3 years (β=6.7%; P=.04). Although concurrent post-surgery mood and anxiety disorders were not associated with less weight loss, statistical power to detect associations with relatively small changes in weight (i.e., <3-7% depending on the prevalence of the psychiatric disorder) was limited.

Conclusion. Bariatric surgery was associated with decreases in psychiatric disorders through 3 years after surgery. Although very uncommon, binge eating disorder after surgery was associated with significantly less weight loss, adding to the literature suggesting that disordered eating after surgery is related to suboptimal outcomes. Pre-surgery history of the most common disorders (i.e., mood, anxiety, substance use, and eating disorders), as well as concurrent post surgery mood and anxiety disorders, were unrelated to weight loss through 3 years following bariatric surgery, but power was limited. If small differences in weight loss are present and sustained over time, these could reach a clinically significant level. Therefore, longer-term follow-up of the sample is ongoing.

A182

USE OF AUDIENCE RESPONSE SYSTEM (ARS) TECHNOLOGY IN A POST-BARIATRIC SURGERY POPULATION

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BACKGROUND: Group-based care of the post-bariatric surgery patient has been shown to offer benefits to both bariatric surgery patients and their care teams. However, group-based care has inherent challenges which may impact the quality of care received. For example, shy or introverted patients may avoid endorsing nonadherence in a group setting of their patient peers. Audience Response System (ARS) technology was incorporated into an existing small group-based follow-up care model for post-bariatric surgery patients. ARS was utilized to allow an anonymous capture of pertinent aspects of the post-bariatric surgery period, in an effort to more accurately grasp the lived experience of patients and to reduce known challenges of group-based care models.

METHODS: Patients who underwent primary bariatric surgery at Mayo Clinic in Rochester, MN, between January 2012 and April 2015, being seen in a long-term (≥ 2 years post-surgery) group-based medical visit setting, answered a series of ARS-based questions, which were embedded in a PowerPoint® presentation. Patients anonymously answered 24 questions using handheld "clickers". Once all patients responded to a particular question, the group results were displayed for all patients to view. Sample topics polled included: post-surgical challenges; hunger control; eating frequency; high-calorie beverage consumption; average portion sizes; physical activity; GI symptoms; alcohol consumption; mental health; and confidence.

RESULTS: A total of 234 patient responses were captured. All patients polled (n=234) responded that they found the ARS technology easy to use and 99.6% (n=233) responded that the ARS technology made their medical visit more enjoyable. Of those, 90.9% were <5 years post-surgery; 9.1% were ≥ 5 years post-surgery. The average length of time since surgery was 3.2 years. Of those polled, 85.5% were status post Roux-en-Y gastric bypass; 6% were status post sleeve gastrectomy, 8.1% were status post duodenal switch, and 0.4% responded were status post an "Other" procedure. Regarding what they found most challenging post-surgery, adequate physical activity was the most common response, with 38% selecting this answer. When questioned regarding minutes of moderate-to-vigorous physical activity, 69.2% of patients polled reported getting <30 minutes per day. Trying not to snack between meals was the second most commonly identified challenge, with 34.2% identifying this as their primary challenge. Of those polled, 56.8% responded "agree" or "strongly agree" when asked if their hunger was well-controlled. Conversely, 18.8% responded "disagree" or "strongly disagree" to the same question. When asked about consumption of high-calorie beverages, 44.4% of patients responded that they consumed a high-calorie (>20 calories/serving) on at least a daily basis. At least monthly alcohol consumption was endorsed by 61.1% of patients, with 10.1% of patients reporting consumption 2 or more times per week. Of those consuming alcohol, 9.4% reported consuming 3 or more drinks on days they were consuming alcohol.

CONCLUSIONS: Our findings show that post-bariatric surgery patients find ARS technology easy to use and enjoyable. As intended, the technology allowed for the anonymous capture of many aspects regarding the post-bariatric surgery experience. The information captured with the ARS technology serves several purposes, including: a mechanism for reserved patients to express concerns in a group setting; a tool to support tailored group education; and an effective means of aggregating useful data on the post-bariatric surgery patient experience. ARS technology may allow bariatric surgery care providers to augment existing models of care, leading to improved patient education and a more accurate understanding of the post-bariatric surgery patient experience.

ASMBS

Masters Course in Behavioral Health Abstracts

Monday, November 2, 2015

Masters of Behavioral Health Session I **1:30pm-5:00pm**

A183

PREOPERATIVE PSYCHOSOCIAL FACTORS ASSOCIATED WITH SYMPTOM PERCEPTION ONE YEAR AFTER BARIATRIC SURGERY.

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University of Oslo[1] Oslo University Hospital[2]

Background: A subset of patients experience side effects such as dumping, fatigue and abdominal discomfort after bariatric surgery. The frequency and perceived intensity of such side effects may affect eating behavior and physical activity. Psychological processes may influence the attention, detection, and interpretation of physical symptoms. Anxiety, stress, and negative affect increase the patients selective attention to symptoms, enforce symptom sensitivity and increase symptom reporting. We aimed to study the association between preoperative stressful life events, anxiety, and negative affect with the number and degree of self-perceived side effects one year following bariatric surgery.
Method: Questionnaire data from an ongoing prospective study, *Oslo Bariatric Surgery Study*, was collected from 302 patients preoperatively (79.3% women) and 246 (81.5%) of the participants completed the questionnaire one year after surgery.. Mean age was 43.9 years, and 93% underwent Roux-en-Y gastric bypass and 7% gastric sleeve, In response to the question "Have you experienced any side effects/changes after the operation that affect how you eat or your being physically active?ity" the patients rated the degree of impact, from 0 "No", to 6 "Very much", on 11 side effects: change of taste, dumping, pain, feeling full, not wanting to eat, increased hunger, heartburn, vomiting, fatigue, diarrhea, and constipation. Frequency of side effects was calculated as the sum of responses equal or greater than 1. Preoperative independent variables were anxiety and depression (*Hospital Anxiety and Depression Scale*), self-esteem (*Rosenberg´s Sself-Eesteem Sscale*), and negative thinking about the one´s body (*The Habit Index of Negative Thinking - Body Image*Habitual negative thinking about the body scale). Stressful life events consisteded of? 17 potential stressful negative events, and the respondents indicated degree of impact (1 "low" 4 "high") and coping ("1 "poor" 3 " well"). Two single questions measured the extent to which the patients worried that: "..the operation will be unsuccessful" and "..complications will arise in connection with the operation". Partial correlations adjusted for percent% weight loss were used.
Results: A mean total of 6.8 (SD 2.2) side effects/changes was reported after surgery, with a mean impact of 2.3 (SD 0.6) on their eating behavior or physical activity. Feeling full (95%), dumping (89%) and fatigue (76%) were the side effects/changes most often reported, and affected behavior the most: feeling full (mean 4.3, SD 1.6), dumping (mean 2.9, SD 1.4), fatigue (mean 2.9, SD 1.6). Total degree of impact on behavior from side effects was positively associated with preoperative anxiety ($r = 0.32$), frequency of stressful negative life events ($r = 0.38$), worry about operation success ($r = 0.22$) and complications ($r = 0.19$), and negatively correlated with coping with stress ($r = -0.23$) and self-esteem ($r = -0.20$). Preoperative frequency of stressful events and anxiety wereare the factors associated with the most side effects. Diarrhea, dumping, pain, fatigue, not wanting to eat, increased hunger, and heartburn were all associated with preoperative psychological factors. No association was found with change of taste, easily feeling full, vomiting, and constipation.
Conclusion: Patients reporting more stressful negative life events and difficulty coping with these events, more anxiety and worry about the treatment prior to surgery, experienced higher self-perceived frequency and impact of side effects on eating behavior and physical activity

following surgery. Preoperative anxiety and experience of negative stress may increase the patients' attention to symptoms, vigilance for detecting potential dangers, and sensitivity for internal body cues after surgery. Self-perceived symptoms are thus important targets for intervention.

A185

BODY CONTOURING SURGERY FOLLOWING ROUX-EN-Y GASTRIC BYPASS IN THE LONGITUDINAL ASSESSMENT OF BARIATRIC SURGERY-2 COHORT

Kristine Steffen PharmD PhD[1], Fargo, ND, USA; JAMES MITCHELL MD, Fargo, ND; Anita Courcoulas MD MPH, Pittsburgh PA; J. Peter Rubin MD; Jo Ellison PhD, Fargo North Dakota; Ross Crosby PhD, Fargo ND North Dakota State University and Neurop[1]

Background: The objectives of this study were to examine the prevalence of body contouring procedures among participants who have undergone bariatric surgery, to define the rate of desiring contouring surgery (CS) on various body regions, and to determine leading reasons why participants fail to undergo contouring surgery.
Methods: Participants in the Longitudinal Assessment of Bariatric Surgery-2 (LABS-2), a multi-site cohort study, who underwent bariatric surgery were invited to complete the Excessive Skin Survey at either the 4 or 5-year post-operative visit to assess body regions affected by excess skin and whether participants underwent CS since their bariatric surgery procedure. Sociodemographic and weight data were also collected at annual visits.
Results: The sample consisted of 1254 participants (80.3% female) who underwent Roux-en-Y Gastric Bypass (RYGB) with a mean pre-surgical age of 46.5 ± 11.1 years and a mean pre-surgical body mass index (BMI) of 47.5 ± 7.31 kg/m2. Eleven percent (n=143) of the sample underwent at least one CS. A higher percentage of the females (12.4%) than the males (7.3%) underwent CS (p=.025). Compared to those who did not undergo CS, participants who underwent CS were, on average, heavier before RYGB (BMI 49.4 ± 7.6 kg/m2 versus 47.3 ± 7.2 kg/m2, participants p=.001) whereas pre-surgical age and race did not differ significantly between groups. The body areas that participants most frequently desired CS for were the waist (69.4%) and thighs (51.6%). Among participants who were at least somewhat desirous of CS in a given body region, the most common reason reported (by at least 75% of the sample for each body region) for not undergoing CS was lack of insurance coverage or excessive cost.
Conclusions: Although a minority of participants undergoes CS within 4-5 years following RYGB induced weight loss in the LABS-2 cohort, a majority of participants desire CS in one or more body regions. Lack of insurance coverage and cost are commonly cited barriers.

Tuesday, November 3, 2015

Masters Course in Behavioral Health Session II **8:00am-12:00pm**

A184

ALCOHOL AFTER BARIATRIC SURGERY: DATA FROM A SAMPLE OF SELF-REPORTED PROBLEMATIC DRINKERS

Scott Engel PhD, Fargo, ND, USA; Karen Grothe PhD ABPP LP[2], Rochester, MN, USA; Afton Koball PhD[2], Rochester, MN; Kristine Steffen PharmD PhD[3], Fargo, ND, USA; Luis Garcia MD FACS MBA[4], Fargo, ND; JAMES MITCHELL MD[1], Fargo, ND
Neuropsychiatric Research Institute[1] Mayo Clinic[2] North Dakota State University[3] Sanford Health[4]

Introduction: Bariatric surgery patients typically experience very good outcomes in a wide range of domains: weight loss, reduced medical comorbidities, improved health-related quality of life, and improved sexual functioning to name a few. However, some bariatric surgery patients appear to be at increased risk for some problems after surgery. Changes in the pharmacokinetics of alcohol and increased risk for problems with alcohol are examples of this. A number of studies suggest that post-bariatric surgery patients experience alcohol differently after surgery. Self-report data shows that patients report "feeling the effects of alcohol" much more quickly than before surgery (Buffington, 2007). Objective data from patients in the laboratory confirm this report: Roux-en-Y gastric bypass (RYGB) patients become intoxicated remarkably fast and reach peak blood alcohol concentrations that are surprisingly high (Steffen et al., 2013). Additionally, data also suggests that patients are more likely to meet criteria for an alcohol use disorder following RYGB (King et al., 2012). Further, the surgical procedure that patients undergo may have an impact on alcohol-related outcomes: laparoscopic adjustable band patients appear to be less likely to have problems with alcohol than gastric bypass patients (Ostlund, 2011).
Methods: Although we know that patients are at an increased risk for problems with alcohol after surgery, we know very little about the patients who have such problems. The current study aimed to gain a better understanding of patients who report having alcohol problems after surgery. To enter the study participants had to: 1) have received RYGB or Sleeve Gastrectomy surgery in the past 1-4 years, 2) be 21 years of age or older, and 3) have self-reported problems with alcohol use after surgery. Qualifiers completed a number of paper-and-pencil self-report assessments and interviews, including the Mini International Neuropsychiatric Interview, portions of the Structured Clinical Interview for DSM-IV, and the Alcohol Use Disorder Identification Test.
Results: At the time of abstract submission 54 people had been screened and 24 participants qualified and completed the protocol. Participants' age ranged from 27 to 60 with a mean of 43.9 (SD=10.6 years) and twenty-one (87.5%) of the participants were female. Participants completed the protocol an average of 2.2 years after surgery (SD=1.0). Participants mean score on the AUDIT was 21.9 (SD=6.6) with a range of 12 to 36. Before surgery 18.8% of the sample most frequently drank wine, compared with 37.5% of the sample after surgery. Before surgery 31.3% of the sample reported drinking beer most frequently, compared with 12.5% after surgery. Finally, 37.5% of the sample most often drank liquor before surgery and 43.8% did so after surgery. Based on data from the SCID, in the six months prior to surgery less than ten percent of participants reported abuse of alcohol and none reported dependence. After surgery approximately one-third of the sample reported alcohol abuse and half reported dependence.
Conclusion: Based on these findings, it appears that although many of the participants met DSM-IV criteria for alcohol abuse or dependence after surgery, surprisingly few of them reported having significant problems with alcohol in the six months prior to surgery. Also, we found that people report drinking beer as their "drink of choice" less frequently and wine and liquor more frequently after surgery.

A186

GRAZING EATING AMONG BARIATRIC SURGERY CANDIDATES: PREVALENCE AND PSYCHOSOCIAL CORRELATES

Kasey Goodpaster PhD, Cleveland Heights OH; Ryan Marek MA[1], Kent, Ohio, United States;

Kathleen Ashton PhD[2], Cleveland, OH, USA; Megan Lavery PsyD[2], Cleveland, OH; Julie Merrell Rish PhD[2], Cleveland, Ohio; Leslie Heinberg PhD[2], Cleveland, OH, USA
Kent State University[1] Cleveland Clinic BMI[2]

Background: Maladaptive eating patterns contribute to poorer weight loss outcomes following bariatric surgery. Graze eating, defined as eating small amounts of food continuously throughout the day, is a relatively common maladaptive eating pattern in pre-surgical bariatric patients, with prevalence rates ranging from 19.5% to 59.8%. The vast majority of patients who graze eat pre-surgically return to this pattern post-surgically. Additionally, many patients with binge eating disorder (BED) pre-surgery convert to graze eating post-surgery, leading some researchers to suggest that it is feelings of loss of control (LOC) when eating, rather than the quantity of food consumed, that best captures eating pathology in this population. Recently proposed graze eating criteria include non-compulsive and compulsive subtypes, yet little is known about how patients with these subtypes might differ with regard to psychopathology or other psychosocial factors. The present study seeks to provide theoretical clarity into this construct by examining differences in presentation between graze eating with LOC (+LOC) and without LOC (-LOC) among pre-operative bariatric patients.
Methods: The sample consisted of 288 bariatric surgery candidates who underwent a psychological evaluation between April and October 2014, including assessment for graze eating, and produced valid pre-surgical MMPI-2-RF protocols. Graze eating, binge eating, and other mental health diagnoses were evaluated using a semi-structured interview. The majority of the sample was female (77.4%). Ethnic breakdowns were as follows: Caucasian (62.5%), African American (26.4%), Latino/a (1.4%), and other race/ethnicity (1.0%). The mean age of the sample was 45.85 years old (SD = 12.57), and the mean pre-surgical BMI was 48.08 (SD = 9.04). Data were analyzed using *t*-tests, chi square tests, ANOVAs, and MANOVAs.
Results: Results indicated that 33% (*n* = 95) of the sample reported graze eating. Among patients with graze eating, 32% (*n* = 30) also endorsed LOC. Graze eating occurred frequently, with a mean of four days per week for graze eating +LOC, and two days per week for graze eating –LOC. ANOVAs compared three groups in relation to psychopathology: no grazing, grazing +LOC, and grazing –LOC. Grazing +LOC was associated with greater psychopathology across multiple variables. For example, prevalence of major depressive disorder, anxiety disorder, and BED was greatest for grazing +LOC. On the MMPI-2-RF, scores on the following scales significantly increased from no grazing, to grazing –LOC, to grazing +LOC, respectively: Emotional/Internalizing Dysfunction, Demoralization, Dysfunctional Negative Emotions, Stress/Worry, and Negative Emotionality/Neuroticism-revised. Furthermore, for Low Positive Emotions and other facet measures of emotional dysfunction, although there were no significant differences between no grazing and grazing –LOC, scores were significantly higher for grazing +LOC.
Conclusions: Results support that graze eating is a common pattern in bariatric surgery candidates. Compared to candidates with no grazing, candidates who graze eat experience more overall distress and psychopathology. The minority who experience grazing +LOC appear to have the most severe psychopathology, including depression, anxiety, and other internalizing disorders. These results support the theoretical distinction between grazing +LOC and –LOC subtypes. Findings suggest that bariatric candidates with graze eating experience poorer affect regulation and may use graze eating as an ineffective coping/avoidance strategy. There also appears to be significant overlap between graze eating and BED for patients with grazing +LOC; suggesting that these disorders might represent two manifestations of a broader disordered eating pattern and could benefit from similar treatment. Because graze eating patterns have been shown to re-emerge after surgery and are associated with poorer weight loss outcomes, providers should consider pre-surgical treatment for patients with graze eating, particularly when they also experience LOC. Treatment should

encompass both behavioral and coping/emotion regulation strategies. Future research should examine differences post-operatively between patients with graze eating with and without LOC.

A187

PERCEIVED FOOD TRIGGERS RELATED TO CHANGE IN FREQUENCY OF SNACKING ONE YEAR AFTER BARIATRIC SURGERY

Irmelin Bergh MSc[1], Oslo, Norway; Hilde Risstad MD[2], Oslo; Falko Sniehotta PhD[3], Newcastle upon Tyne, England; Ingela Lundin Kvalem PhD[1], Oslo, Norway
University of Oslo[1] Oslo University Hospital[2] Institute of Health & Society, Newcastle University[3]

Background: To not lose expected weight or regaining weight after bariatric surgery has been related to postoperative eating behavior and increased consumption of high-caloric food. Research has shown that patients are often less hungry and show altered food preferences after Roux-en-Y gastric bypass, such as less appetite for sweets and increased preference of vegetables and fruits. Yet, some patients return to their old habits or continue to struggle to control their intake when facing environmental triggers/food cues. Knowledge about reasons for unhealthy eating behavior among bariatric surgery patients is limited. To be able to tailor interventions supporting patients to change undesired eating behavior we aimed to examine triggers and food cues related to change in unhealthy snacking one year after surgery.
Methods: Participants were recruited to the Oslo Bariatric Surgery Study at Oslo University Hospital, Norway, from February 2011 to September 2013. Patients aged 18-60 years old with body mass index (BMI) ≥40 kg/m^2 or BMI ≥35 kg/m^2, with obesity-related comorbidities who had failed at previous weight loss attempts were eligible for surgery. Participants' weight was measured at the hospital and they completed an extensive questionnaire before and one year after surgery. The trigger items used in the current study were from Survey for Eating Disorders (SED) and Weight and Lifestyle inventory (WALI). Frequency of snacking was measured by using the mean sum score of three questions pertaining to the frequency of eating sweets, caloric food and consumption of fizzy drinks. Response categories ranged from 1 (never) to 5 (always), and higher scores indicated higher frequency. Independent sample t-tests were conducted to compare differences in change in frequency of snacking for the different demographic variables (gender, education, employment and marital status/cohabiting). Pearson correlation was used to examine the relationship between the study variables and the outcome measure. One-way ANOVA was conducted to test differences in the perceived impact of food triggers on unhealthy eating between three groups: participants with an increase/no change in pre- to postoperatively frequency of snacking, participants with a minor decrease, and those with a substantial decrease in snacking behavior.
Results: Preoperatively, 302 participants (79% women) completed the questionnaire, and 246 (81.5%) of the participants responded postoperatively (T2) (Figure 1). The majority underwent Roux-en-Y gastric bypass (231) and 15 participants underwent sleeve gastrectomy. Participants lost on average 29.0% (SD 8.3) of their weight, mean BMI was 45.0 (SD 6.0) kg/m^2 preoperatively, and 30.7 (SD 5.6) kg/m^2 at follow-up. The independent sample t-tests conducted showed no differences in the outcome measure in relation to any of the demographic variables. Change in frequency of snacking was associated with weight loss. It was negatively correlated with positive emotions/food cues/being bored, social triggers and hunger. Eating triggered by negative emotions was not related to change in snacking behavior. Results from one-way ANOVA showed significant difference between the three groups. The participants with substantial decrease in snacking behavior perceived more triggers like food cues/being bored, social meals and hunger compared to the patients showing an increase or no change.
Conclusion: Our findings indicate that although bariatric surgery restricts eating, difficulty in changing unhealthy eating behavior postoperatively can be related to different food triggers. That negative emotions were not related to unhealthy eating was quite unexpected and

needs to be further explored. There is an increasing need for post-operative assessment of eating behavior and development of more tailored interventions in order to prevent individuals from regaining weight post surgery.

A188

DEPRESSION, EATING BEHAVIORS, SELF-ESTEEM AND EARLY BODY IMAGE CONCERNS AFTER BARIATRIC SURGERY.

Julie Merrell Rish PhD[1], Cleveland, OH, USA; Ashleigh Pona BS[2], Kansas City, Missouri; Megan Lavery PsyD[3], Cleveland, OH; Leslie Heinberg PhD[3], Cleveland, OH, USA; Kathleen Ashton PhD[3], Cleveland, OH, USA
Cleveland Clinic Foundation[1] University of Missouri[2] Cleveland Clinic[3]

Background: The relationships between eating disorders, depression, and body image have been well established. Most post-bariatric surgery studies indicate improvement in body image; however, some individuals continue to struggle with body image after weight loss associated with bariatric surgery. These concerns have been associated with presurgical depression and lower self-esteem. Less is known of the relationship between eating disorders, depression, self-esteem, and body image early after bariatric surgery. **Objective:** This study sought to explore preoperative factors that may predict body image concerns 3-months after bariatric surgery. **Setting:** Academic Medical Center. **Method:** Data were analyzed from 390 patients evaluated for bariatric surgery who completed a 3-month postoperative psychology appointment and questionnaire, and the Minnesota Multiphasic Personality Inventory, Second Edition, Restructured Form (MMPI-2-RF). Scales measuring depression, persecution, self-doubt, and inefficacy were examined. Medical records were reviewed for demographics, current or lifetime depression diagnosis, and eating disorder not otherwise specified diagnosis (EDNOS). Patients who indicated post-surgery body image concerns were compared to patients not endorsing these symptoms. **Results:** Patients who preoperatively were diagnosed with EDNOS (X^2=4.42, p<.05), major depressive disorder (X^2=13.62, p<.001), and who scored higher on depression (F (1, 388) = 30.24, p<.001), ideas of persecution (F (1, 388) = 12.73, p<.001), self-doubt (F (1, 388) = 29.07, p<.001), and inefficacy (F (1, 388) = 15.96, p<.001) were significantly more likely to report body image concerns 3-months after bariatric surgery. The combined effects of these variables account for 14.9% of the variance in body image concerns (R^2 = 5.96, F(3, 374) = 5.96, p < .001). **Conclusions:** Patients with a pre-surgical depression diagnosis and symptoms of distress, EDNOS, and lower self-esteem are more likely to report body image concerns early after bariatric surgery. Future research should examine whether this relationship continues long term post-operatively.

A191

BRIEF FOUR SESSION CBT GROUP INCREASES KNOWLEDGE AND COPING SKILLS IN A HIGH-RISK BARIATRIC SURGERY POPULATION

Megan Lavery PsyD[1], Cleveland, OH; Leslie Heinberg PhD[1], Cleveland, OH, USA; Kasey Goodpaster PhD, Cleveland Heights OH; Julie Merrell Rish PhD[1], Cleveland, Ohio; Kathleen Ashton PhD[1], Cleveland, OH, USA
Cleveland Clinic[1]

Introduction: Poor knowledge of surgery and limited coping are generally considered poor psychological indicators for bariatric surgery. Both research and clinical experience suggest that these deficits can contribute to poorer adherence and leave patients psychosocially and medically vulnerable after surgery. Arguably, patients with inadequate understanding and/or coping skills represent an at-risk subpopulation of bariatric patients: at increased risk of dropping-out and at risk of experiencing poorer outcomes post-operatively. Unfortunately, there is limited consensus or empirically evaluated interventions regarding how to address these concerns with patients. The current study sought to examine the effectiveness of a brief, 4-session cognitive behavioral therapy (CBT) group for preoperative

candidates deemed to have poor knowledge and/or insufficient coping skills.
Methods: Patients seeking bariatric surgery at a large academic medical center were evaluated for their knowledge of surgery and coping resources using a semi-structured interview within an initial psychological evaluation. Patients deemed to have substandard understanding of surgery and necessary lifestyle changes and/or inadequate coping skills were referred to a 4-session CBT group. Sessions focused on psychoeducation around surgery/lifestyle changes, self-monitoring, regulation of eating patterns, and stress management. Participants completed two measures pre- and post-group: the Get Set Quiz and the Brief COPE. The Get Set Quiz is a 15-item instrument designed for this study to evaluate knowledge about surgery and necessary lifestyle changes. The Brief COPE is a validated, 28-item measure used to assess a range of coping strategies, yielding scores for 14 subscales. Medical records were reviewed for demographics and BMI. Paired samples *t*-tests were used to compare pre-post scores.
Results: Seventy-seven participants (66.2% Female; 45.50 % African American; Mean Age = 46.76; Mean BMI = 52.80 kg/m^2; Mean Education = 12.54 years) completed pre- and post- group data. Participants' mean Get Set knowledge quiz scores significantly increased from 8.68 pre-group to 11.12 post-group; $t(67) = -6.91$, $p < .001$. Several subscales of the Brief COPE also demonstrated significant changes in the expected direction; including gains in the Self-Distraction ($t(47) = -3.38$, $p \leq .001$), Active Coping ($t(50) = -3.35$, $p < .05$), Emotional Support (($t(47) = -3.38$, $p \leq .001$), and Positive Reframing ($t(48) = -5.01$, $p < .001$) Subscales.
Conclusions: The current findings suggest that a brief pre-surgery intervention can help patients deemed high risk to improve their understanding of surgery and ability to cope with potentially stressful lifestyle changes after surgery. Future research should explore rates of program completion and surgical outcomes for patients who are identified as having limited coping and knowledge and undergo similar treatment prior to surgery

Tuesday, November 3, 2015

Masters Course in Behavioral Health Session III 1:30pm-5:30pm

A189

PSYCHOLOGICAL FACTORS, HEALTHCARE DISPARITIES, AND WEIGHT LOSS SURGERY

Kathleen Ashton PhD[1], Cleveland, OH, USA; Ryan Marek MA[2], Kent, Ohio, United States; Julie Merrell Rish PhD[3], Cleveland, OH, USA; Megan Lavery PsyD[3], Cleveland, OH; Leslie Heinberg PhD[3], Cleveland, OH, USA
The Cleveland Clinic Foundation[1] Kent State University[2] Cleveland Clinic[3]

Objective: Previous studies examining healthcare disparities in weight loss surgery (WLS) have found that African Americans & Latinos, lower SES individuals, and the uninsured are more likely to qualify for, but less likely to receive, WLS. The current study sought to explore psychological factors that may contribute to healthcare disparities in WLS.
Methods: Retrospective chart review at a large academic medical center examined 2690 consecutive patients. Gender, race (African American vs. Caucasian), disability, and education level were examined for surgery completion. Further, differences in denial due to psychological reasons, final psychological clearance, mental health treatment, and substance use history were examined as potential reasons for why patients did not complete surgery.
Results: The sample was predominantly female (72%), with 24% of the sample African American, 67% with greater than a high school education, and 55% employed. African Americans($X^2 = 47.4$, $p < .001$), those on disability insurance ($X^2 = 4.4$, $p < .05$), and those with less education ($X^2 = 14.4$, $p < .001$) were significantly less likely to complete surgery. There were no differences between

African Americans and Caucasians for denial of surgery based on psychological reasons (deemed not a candidate at initial visit by behavioral health). Moreover, African American and Caucasian patients were rated similarly on a scale of overall readiness for surgery. However, African American patients were significantly less likely to obtain final psychological clearance (i.e., started program but never completed psychological recommendations; $X^2 = 62.9$, $p < .001$). In addition, African American patients were less likely to have received mental health treatment ($X^2 = 34.1$, $p < .001$) and more likely to have a substance abuse history ($X^2 = 24.02$, $p < .05$) when compared to Caucasian surgery candidates. Logistical regression analysis revealed significant main effects for race and outpatient mental health treatment predicting psychological clearance, as well as an interaction effect (p's<.001). African American candidates without mental health treatment were least likely to obtain final clearance by psychology; Caucasians receiving mental health treatment were the most likely group to receive psychological clearance.
Discussion: Although African Americans show higher rates of obesity, they are less likely to obtain weight loss surgery. Factors such as lack of mental health treatment, whether due to access or stigma, may be a barrier to psychological clearance for surgery. Psychological providers should be aware of barriers to surgery and work toward program interventions to improve access to WLS.

A190

A PILOT RANDOMIZED CONTROLLED TRIAL OF TELEPHONE-BASED COGNITIVE BEHAVIORAL THERAPY FOR PREOPERATIVE BARIATRIC SURGERY PATIENTS

Sanjeev Sockalingam MD, Toronto Ontario; Stephanie Cassin PhD[1], Toronto, Ontario; Chau Du MSc[2], Toronto, Ontario; Susan Wnuk PhD[2], Toronto, Ontario; Raed Hawa MD, FRCPC[2], Toronto, Ontario; Timothy Jackson MD[2], Toronto, Ontario, Canada; Sagar Parikh MD[2], Ann Arbor, Michigan
Ryerson University[1] University Health Network[2]

Background: Accumulating evidence suggests that psychosocial interventions such as cognitive behavioral therapy can improve eating behaviors and psychosocial functioning in bariatric surgery candidates (e.g., Ashton, Drerup, Windover, & Heinberg, 2009). However, the mobility issues and practical barriers faced by many patients highlight the need for novel methods for delivering psychosocial interventions that have the potential to improve access to treatment.
Objectives: The objective of this study was to examine the efficacy of a pre-operative telephone-based cognitive behavioural therapy (Tele-CBT) intervention versus standard pre-operative care for improving eating pathology and psychosocial functioning.
Setting: Participants were recruited from a Canadian Bariatric Surgery Program.
Methods: Participants ($N = 43$) were randomly assigned pre-operatively to receive standard preoperative care ($n = 20$) or 6 sessions of Tele-CBT ($n = 23$). The Tele-CBT sessions focused on introducing the cognitive behavioral model of overeating and obesity, scheduling healthy meals and snacks at regular time intervals and recording consumption using food records, scheduling pleasurable alternative activities to overeating, identifying and planning for difficult eating scenarios, reducing vulnerability to overeating by solving problems and challenging negative thoughts, and preparing for bariatric surgery. Participants completed a questionnaire packet pre-intervention (baseline) and post-intervention (or 7 weeks following baseline for the control group). The primary outcome variables included measures of binge eating (Binge Eating Scale - *BES*; Gormally, Black, Daston, & Rardin, 1982) and emotional eating (Emotional Eating Scale - *EES*; Arnow, Kenardy, & Agras, 1995), and secondary outcome variables included measures of depression (Patient Health Questionnaire - *PHQ-9*; Spitzer et al., 1999), anxiety (Generalized Anxiety Disorder 7 item scale - *GAD-7*; Spitzer et al., 2006), and quality of life (36-item Health Survey - *SF-36*; Ware, Kosinski, Kelle, 1994).
Results: Retention was 77% at post-intervention, and the study completers did not differ from the dropouts on any demographic variables or baseline clinical variables. A 2 (Group: Tele-CBT vs. Control) x 2 (Time:

baseline, post-intervention) mixed-design analysis of variance (ANOVA) was performed separately for each outcome variable, and Cohen's *d* effect size (.2 = small effect, .5 = medium effect, .8 = large effect) was computed from the F-test (Thalheimer & Cook, 2002). Changes in binge eating, emotional eating, depression, anxiety, and quality of life are reported in Table 1. The Group x Time interaction was significant for binge eating, emotional eating, depression, and anxiety. Follow-up paired-samples t-tests indicated that the Tele-CBT group reported significant improvements on the BES, $t(15) = 3.03$, $p = .008$, EES, $t(15) = 3.44$, $p = .004$, and PHQ-9, $t(15) = 3.20$, $p = .002$, whereas the control group actually reported a significant increase on the PHQ-9, $t(16) = 2.39$, $p = .03$, and GAD-7, $t(16) = 3.13$, $p = .006$, over the same period.

Conclusions: This 6-session pre-operative Tele-CBT intervention was efficacious in improving binge eating, emotional eating, and depression, lending further support to the growing body of literature demonstrating that CBT is a helpful tool for many bariatric surgery patients and providing an impetus to investigate other novel methods of treatment delivery.

A192

IMPACT OF INTEGRATING DEDICATED PSYCHOLOGICAL SUPPORT ON THE ATTRITION RATE OF A BARIATRIC SURGERY PREOPERATIVE PROGRAM

Tanya Kindel MA[1], Johnstown, PA; Chris Christensen RN[1], Johnstown, PA; Stanley Zagorski MD[1], Johnstown, PA; D'Arcy Duke MD[1], Johnstown, PA
Conemaugh Health System[1]

Background: Bariatric surgery has proven to be a powerful tool in treating obesity and its associated medical conditions. Unfortunately, many patients interested in surgery do not undergo operative intervention due to attrition during the preoperative preparation program.
Methods: We examined the retrospective attrition rate data among patients entering the preoperative program during two three month time frames (July-Sept and Oct-Dec). We compared that to data collected after integrating Dedicated Psychological Support (DPS) during a three month time frame (Jan-March). The aim of the examination was to assess if DPS had any impact on attrition.
Results: Overall, a patient was about 3 times more likely to remain in the preoperative program with DPS involvement than without. The integration of DPS services resulted in an average percent decrease in attrition rates of 39%. Post-info session and post-program start attrition rates were (31%, 25%) and (41%, 10%) for 2014--July-Sept and Oct-Dec, respectively. After DPS involvement, attrition rates at both time points decreased to 25% and 3%, respectively.
Conclusions: There are many variables that can impact patient's reasons for dropping out of a bariatric surgery preoperative program. However, by implementing general DPS into a bariatric surgery preoperative preparation program the rate of attrition can be decreased. Further study identifying unique variables that can be targeted by DPS, both pre and post surgery, should be undertaken.

A193

A PILOT STUDY TO ASSESS FEASIBILITY, ACCEPTABILITY, AND EFFECTIVENESS OF A REMOTELY-DELIVERED INTERVENTION TO ADDRESS WEIGHT REGAIN AFTER BARIATRIC SURGERY

Lauren Bradley MS[1], Chicago, IL; Evan Forman PhD[1], Philadephia, PA; Stephanie Kerrigan MS[1], Philadelphia, PA; Stephanie Goldstein BS[1], Philadelphia, PA; Meghan Butryn PhD[1], Philadelphia, PA; Graham Thomas PhD[2], Providence, RI; James Herbert PhD[1], Philadelphia, PA; David Sarwer PhD[3], Philadelphia, PA
Drexel University[1] Brown University, The Miriam Hospital[2] University of Pennsylvania[3]

Bariatric surgery is the most effective treatment for obesity. Unfortunately, most patients regain some weight over time and, approximately 20-30% regain significant amounts of weight that can negatively impact the health benefits typically associated with bariatric surgery. Many authorities attribute weight regain to poor compliance to postsurgical dietary

prescriptions and have suggested that lifestyle modification interventions hold promise in promoting long-term weight maintenance. At the same time, many bariatric patients engage in infrequent follow up with the bariatric program, making the delivery of these interventions difficult. One way to overcome this barrier is to deliver these interventions remotely (i.e., via Internet and/or telephone). Remote-based interventions have been shown to be effective for numerous health issues, including weight loss, but such interventions have not yet been examined in patients who have undergone bariatric surgery. The current, open trial aimed to evaluate a 10-week behavioral-based intervention delivered via Internet modules and telephone check-ins to reverse weight regain. Participants were 16 men and women at least 1.5 years out from surgery who reported experiencing a weight regain trajectory (i.e., regain of at least 10% of maximum weight loss). Participants were mostly White (81.3%) females (81.3%), with a mean age of 54.3 ± 12.1 years and mean BMI of 39.1 ± 6.9 kg/m^2. The intervention was adapted from an in-person, group version of this program and consisted of behavioral and psychological strategies aimed at increasing adherence to weight control behaviors. Ten weekly sessions were delivered through an interactive e-learning platform (i.e., Articulate) hosted on Coursesites (a popular e-learning platform). Each module included video presentation of material synchronized with a slideshow illustrating session material, written material of high visual interest (including figures, tables), interactive exercises, examples of other "patients" utilizing presented skills in the moment, quizzes that aimed to support participants' understanding of the material, and directed assignments to be completed throughout the week. The program appeared to be feasible and acceptable, with nearly 70% retention over the 10 weeks and a high mean rating (4.7 out of 5.0) of satisfaction among treatment completers. On average, weight regain was stopped and even reversed, with a mean weight change of -5.1% ± 5.5% in completers throughout the 10-week intervention. Overall, these pilot data provide initial support for the feasibility, acceptability, and preliminary effectiveness of a remotely-delivered behavioral intervention for patients who have previously undergone bariatric surgery.

POSTERS

FRIDAY, NOVEMBER 6, 2015

TOP 15 POSTERS SESSION 3:45PM – 5:15PM

A5001

TIME-TO-EVENT ANALYSIS FOR REOPERATION OF INTERNAL HERNIATION AFTER DOUBLE LOOP LINEAR LAPAROSCOPIC GASTRIC BYPASS: AN EIGHT YEARS FOLLOW-UP STUDY OF 4839 ANTECOLIC GASTRIC BYPASS PROCEDURES AT A SINGLE INSTITUTION

Jens Fromholt Larsen MD, PhD[1], Vejle, Jylland; Thorbjorn Sommer MD, PhD[2], Vejle, Jylland; Jens Peter Kroustrup MD, Vejle Denmark Molholm Private Hospital[1] Moelholm Private Hospital[2]

Bacground: Internal herniation (IH) may consitute a serious complication after laparoscopic gastric bypass surgery. The time, frequency and clinical predictive factors of importanse of reoperation for IH after antecolic double loop laparoscopic gastric bypass (LRYGB) are not known.

Material and Methods: 4839 patients mean age 40 years (SD = 9.8 years) underwent antecolic double loop laparoscopic gastric bypass at Moelholm Private Hospital between January 2006 and December 2013. Petersen space and the mesentery defects were not closed between January 2006 and martch 2012 (N=4611). From April 2012 the spaces were closed with clips

(N=228). Reoperations for IH performed by any public or private hospitals were identified. Diagnosis, procedure and days from LRYGB to reoperation for IH were recorded. We used our preoperative and follow-up data to construct a multiple logistic regression analysis to predict the risk and time of reoperation for IH based on: Age, Genger, BMI at time of LRYGB, and BMI reduction at one-year control.
Results: All 4839 patients were identified in the Danish National Patient Register. A total of 233 (4.8 %, CL = 4.2-5.5 %) patients were reoperated for IH during the follow-up periode of mean 1501 days (95% CL = 15 days). The mean follow up periode of patients without HI was 1551 days (95 % CL = 61 days), students t-test, p=0.159. Only one patient was reoperated for IH after March 2012. The mean time from LRYGB to HI was 961 days (95 CL=66 days). Age and genger were not statistical significant associated to time for operation of HI after LRYGB. However, BMI at time of LRYGB and BMI loss one year after were significant associated with time to operation for HI. Risk of IH was associated with age, BMI at time of LRYGB and BMI one year after LRYGB.
Conclusion: Reoperation for IH after antecolic double loop LRYGB is a clinical significant problem in whom the mesentery defect and Petersens space are not closed. Young age and Low BMI at the time of LRYGB operation, as well as great BMI loss one year after LRYGB are predictors of reoperation for IH. Low BMI at the time of LRYGB, and great BMI loss one year after LRYGB are predictors of earlier reoperation for IH.

A5002

PREOPERATIVE ENDOSCOPIC AND RADIOLOGIC EVALUATION OF BARIATRIC PATIENTS: WHAT DO THEY ADD?

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Background: Preoperative esophagogastroduodenoscopy (EGD) and barium swallow (BS) are performed for evaluation of morbidly obese patients in many bariatric surgery centers. The routine use of these modalities has been controversial. The purpose of this study was; 1) assess significant findings in these studies; 2) examine the correlation between patients' symptoms, preoperative endoscopic and radiologic findings and intraoperative evidence of hiatal hernia (HH).
Methods: We reviewed the records of patients who underwent primary laparoscopic bariatric surgery between March 2013 and March 2015 in our facility. All patients underwent pre-operative EGD and BS. Clinical symptoms, endoscopic and radiologic findings and the rate of HH repair were captured. A descriptive statistic, Chi^2 and McNemar's tests were used for data analysis.
Results: Eighty-seven patients were included. The mean age was 43.7±11.5 years and mean body mass index (BMI) was 47±10 kg/m^2. Preoperative EGD revealed abnormalities in 85% of patients; esophagitis (61%), Barrett's esophagus (4.6%), dysplasia (2.3%) and gastritis (51%). Endoscopic evidence of HH was documented in 65.5% of patients while only 31% of patients had HH in their BS (Table 1). Fifty-two patients (60%) had foregut symptoms. Of the asymptomatic patients, 89% had abnormal EGD, and HH and esophagitis was the most common findings. Based on EGD findings the choice of surgical procedure was changed in 2 patients. Of 87 patients, 57.5% underwent repair of HH during surgery.
Conclusion: This report showed that; 1) 85% patients had abnormalities on EGD compared with 31% on UGI. EGD was a more sensitive modality to identify HH and complications of reflux disease, and 2) symptoms were a poor indicator of the reflux status since 89% of asymptomatic patients had abnormal EGD. The routine use of EGD is a valuable adjunct to pre-operative assessment of bariatric patients regardless of the presence of symptoms and could detect/treat lesions that might potentially affect the type of surgery performed.

A5003

READMISSION FOLLOWING SLEEVE GASTRECTOMY VERSUS ROUX-EN-Y GASTRIC BYPASS

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Background: Sleeve gastrectomy (SG) is gaining popularity over Roux-en-Y gastric bypass (RYGB) within the United States. Readmissions following bariatric surgery are an area for healthcare improvement and a large professional society initiative. However, data on readmissions following bariatric procedures are mostly based on RYGB. Additionally, there is limited evidence on the etiology of readmissions. The aim of this study was to compare readmission rate, and etiology following SG and RYGB.
Methods: Patients undergoing elective laparoscopic SG and RYGB in 2012 and 2013 were identified from the ACS-NSQIP Participant Use File. Demographics, co-morbidities and 30-day readmissions were analyzed. Multivariable logistic regression was used for variables with p-value <0.1, with readmission as the dependent variable. Reason for readmission was compared by procedure type.
Results: A total of 34,983 patients underwent bariatric surgery (46.0% SG and 54.0% RYGB). Readmission was reported in 1,773 (5.1%) patients. Those readmitted had a greater mean BMI (46.7 ± 9.0 vs 45.9 ± 8.4, p <0.001) and were more likely to have American Society of Anesthesiology (ASA) class 3 or 4 (75.1% vs 70.0%, p<0.001). Readmission was more common following RYGB compared to SG (6.1% vs 3.8%, p<0.001). The following factors were independently associated with readmission: ASA class 3 or 4 (OR 1.20, 95% CI 1.07 - 1.35, p=0.002), steroid use (OR 1.86, 95% CI 1.37 - 2.52, p<0.001), BMI (OR 1.01, 95% CI 1.00 - 1.01, p=0.013), and RYGB (OR 1.59, 95% CI 1.44 - 1.76, p<0.001). Most common reasons for readmission following RYGB and SG are shown in Figure 1. Postoperative nausea, vomiting and dehydration were more commonly a reason for readmission following SG than RYGB (p=<0.001).

Conclusion: Hospital readmissions are more common after RYGB than SG. The reasons for readmission differ between RYGB and SG. Given the progressive increase in the proportion of bariatric patients undergoing SG, contemporary hospital programs that aim to decrease readmissions following bariatric surgery need to focus on the prevention and control of postoperative nausea and dehydration.

A5004

A CHALLENGE BETWEEN TRAINEE EDUCATION AND PATIENT SAFETY: DOES FELLOW PARTICIPATION IMPACT POSTOPERATIVE OUTCOMES FOLLOWING BARIATRIC SURGERY?

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Introduction: Surgical training may potentially influence patient care. A safe, high quality bariatric and metabolic surgery practice requires dedicated and specialized training commonly acquired during a fellowship. This study evaluates the impact of fellow participation on postoperative outcomes in bariatric surgery.
Methods: The American College of Surgeons National Surgical Quality Improvement Program (ACS-NSQIP) database was queried for all morbidly obese patients who had undergone primary Roux-en-Y gastric bypass (RYGB) and sleeve gastrectomy (SG) between 2010 and 2012. Multivariate logistic regression was used to analyze if fellow (PGY 6, 7, or 8) participation in bariatric surgical cases was associated with significant differences in perioperative outcomes, compared with no trainee participation (attending only). Multivariate models with backward stepwise elimination patterns were utilized to control for covariates that were significant on univariate analysis (p <0.1).

Results: The study population consisted of 10,838 patients including 8,819 RYGBs and 2,019 SGs. Fellows were involved in 2,795 (31.7%) cases of RYGB and 641 (31.7%) cases of SG. Fellows were involved in higher risk cases, including patients with higher body mass index (<0.001), higher American Society of Anesthesiologists score (p=0.006), and worse comorbidity status (p<0.05). Fellow involvement was associated with increased operative time in RYGB (average mean difference: 42.4±1.2 minutes, p<0.001) and in SG (average mean difference: 38.8±2.5 minutes, p<0.001). Multivariate analysis revealed that fellow involvement in SG did not significantly alter overall complications (odds ratio [OR] 1.31; 95% confidence interval [CI] 0.89-1.93; p=0.166), serious complications (OR 1.41; 95% CI 0.91-2.20; p=0.126), surgical complications (OR 0.91; 95% CI 0.56-1.46; p=0.687), and reoperation (OR 0.93; 95% CI 0.47-1.86; p=0.845). Conversely, in the RYGB group, fellow participation was independently associated with higher rates of overall complications (OR 1.37; 95% CI 1.16-1.63; p<0.0001), serious complications (OR 1.23; 95% CI 1.00-1.52; p=0.048), surgical complications (OR 1.42; 95% CI 1.17-1.73; p<0.0001), reoperation (OR 1.43; 95% CI 1.10-1.87; p=0.008), and readmission (OR 3.15; 95% CI 2.22-4.46; p<0.001). On adjusted analysis, mortality rates were comparable.
Conclusion: Regardless of the bariatric procedure, fellow involvement resulted in a clinically appreciable increase in operative times. In this analysis of multi-institutional data, fellow participation in the operating room was independently associated with worse surgical outcomes following RYGB. Our findings, however, show that fellow involvement does not significantly increase 30-day complication rates after SG. Gradual exposure of fellows from SG to RYGB during fellowship may be associated with better patient care and a reduction in postoperative complications. Moreover, these findings support the need for continuous close supervision of fellows during the learning phase of RYGB and highlight the importance of a strategic approach to improve and assess fellow technical proficiency outside the operating room in surgical simulation laboratories.

A5005

INTRAGASTRIC BALLOON THERAPY FOR OBESE AND OVERWEIGHT PATIENTS: RESULTS IN 200 PATIENTS

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Background: One indication for intra-gastric balloon is weight reduction for mild to moderate obesity. Currently this indication has also been offered for cosmetic reasons in overweight patients. The authors evaluated retrospectively the tolerance and efficacy of the Orbera intragastric balloon (IGB).
Method: From January 2003 to August 2014, an intragastric balloon was placed endoscopically, in 200 patients under IV sedation, with a mean BMI 30 kg/m^2 (25,5-60). It was filled with a mean 568 ml saline (500- 600 ml). Removal was done 6-7 months after balloon insertion, under general anesthesia with OT intubation for airway protection. Insertion and removal were done ambulatory.
Results: Strictly followed by a team of nutritionists, 176 female (88%) and 24 male (12%) underwent IGB placement, that was uneventful. 10% did not complete the 6 months, mainly for intolerance or complication that required early removal., majority within the first 6 weeks. Mean age 34 (12-67). Mean time for insertion and extraction was 20 minutes. Side-effects were: vomiting during the first week (70%), occasional vomiting for >3 weeks (8%), gastro-esophageal reflux (6 %), abdominal pain (5 %), There was 1 gastric perforation (0,5 %) , 2 days after IGB placement, in a patient that had a previous anti-reflux procedure and required emergency surgery, repair and had an uneventful recovery. Total weight loss was a mean of 11,5 % (0.2-28,5 kg.). Average loss of BMI of 3,3 points. Mean excess weight loss was 33 % over 6 months. 91% of patients achieved a total weight loss > 10 %

Conclusions: The IGB appears to be safe, but may have serious complications. It is an absolute contraindication in patients with prior gastric surgery. Its efficacy to reduce weight in association with a well-supervised nutritional guidance might be a good indication for the mildly obese patient and even for cosmetic reasons in the overweight patient.

A5006

A DOUBLE-BLIND SHAM/DEFLATION STUDY EVALUATING REWARD AND SOMATOSENSORY BRAIN ACTIVATION AFTER MILKSHAKE TASTE IN SUCCESSFUL LAPAROSCOPIC ADJUSTABLE GASTRIC BAND PATIENTS

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Background: Bariatric surgery is an effective intervention for morbid obesity, but there is limited understanding of the neuronal mechanisms involved. LAGB is less effective than other procedures for weight loss (Dogan et al. 2014), but unique in that it allows us to test the effects of a restrictive procedure without confounds of malabsorption, and to reverse the band's action acutely in a double-blind manner. One previous LAGB functional MRI study found decreased activation in paralimbic reward centers and increased activation in cognitive and emotional control regions 12 weeks post-LAGB (Bruce et al., 2012). Studies testing milkshake anticipation and taste found that obese subjects had higher activation in somatosensory, gustatory, and reward regions. (Ng, 2011; Stice, 2008; Bohon, 2009) However no research has yet tested neuronal responses to taste in band adjustment, which may be involved in successful weight loss. We examined neuronal differences using fMRI in LAGB patients who had their band deflated and sham-deflated.

Method: Consented patients were 14 adults (M_{Age}= 42.8 years, SD=9.1; 100% female) who had undergone LAGB at least one year prior to fMRI scanning ($M_{PostSurgery}$=3.9 years, SD=1.6), and had an optimally adjusted band and stable weight loss (M_{EWL}=74.1%, SD=16.4). A total of 7 patients were excluded. Patients completed 2 days of scanning after fasting at least 8 hours. One day was an actual deflation day during which approximately 50% of fluid was removed from the band port. A second day involved sham-deflation during which the patient's port was accessed, fluid removed, and immediately replaced with no net change. Patients and assessors were blinded to condition, and deflation/sham-deflation days were counterbalanced. On both days, patients completed a form indicating their estimate (deflation/sham), followed by a milkshake paradigm in the scanner where they viewed cues of milkshake or tasteless solution and received the corresponding taste. BOLD activation to milkshake versus tasteless solution was analyzed using SPM8. Contiguous clusters with $k \geq 25$ were deemed significant at $p < .05$ corrected, determined by 10,000 MonteCarlo simulations (Cox, 1996).

Results: When deflated, patients showed significantly greater activation to milkshake cues versus tasteless solution cues in the cingulate gyrus (emotional control), inferior parietal lobule, and postcentral gyrus (somatosensory), and to the taste of milkshake versus tasteless solution in the thalamus (reward). In the sham-deflation condition, patients showed significantly greater activation to milkshake cues in the caudate (reward) and anterior cingulate cortex (emotion/reward), and to the taste of milkshake in the cingulate gyrus (emotional control), cuneus (visual processing), posterior insula (taste), and postcentral gyrus (somatosensory). Patients correctly identified the procedure as a deflation 66.7% of the time and as sham 75% of the time.

Conclusions: Results indicate increased activation in somatosensory, emotional control, and reward regions to a high-calorie liquid when the band was deflated. In the sham-deflation condition, different regions involved in reward, taste, and emotion showed increased activation compared to the deflation condition. These

regions have been found to be hyperactivated as well in obese adults and emotional eaters, suggesting that even LAGB patients in the "green zone" may still experience underlying neuronal patterns similar to obese adults. Although preliminary, these results suggest that deflation of the band affects neuronal responses involved in emotional control and reward processing. This is more evidence that LAGB is not solely a restrictive procedure, but also has a neuronal pathway which may be a factor contributing to successful weight loss maintenance. Further studies are needed to more clearly elucidate the precise neuronal mechanisms involved in successful weight loss.

A5007

THREE YEAR WEIGHT LOSS OUTCOMES WITH ROUX-EN-Y GASTRIC BYPASS IS SUPERIOR TO SLEEVE GASTRECTOMY IN PATIENTS 65 YEARS AND OLDER

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Background: Very little is known about weight loss outcomes in older patients undergoing laparoscopic sleeve gastrectomy. This study was designed to compare excess weight loss in patients 65 years of age and older undergoing laparoscopic sleeve gastrectomy (LSG) and laparoscopic Roux-en-Y gastric bypass (LRYGB).
Methods: Participants were patients who were 65 years and older who had a LSG or LRYGB between 3/1/2009 and 3/31/2014 from a single bariatric surgery center of excellence (n = 104). Patients' electronic medical records were reviewed for patient demographics, body weight, height, body mass index (BMI) and comorbid conditions at the time of surgery. Percent excess weight loss was calculated using the patient's weight on the day of surgery versus their ideal body weight at a BMI of 25 kg/m^2. The 30 day complications, readmissions and mortality were tracked. The demographics, comorbid conditions and percent excess weight loss for LSG and LRYGB patients were compared using t-tests for continuous variables and chi squared tests for categorical variables.
Results: Out of 104 patients, 79% had LSG (n = 81). The average patient age was 67.3 $\pm$ 2.3, 74% were female, 63% were non-Hispanic white, 58% had diabetes, 88% had hypertension and average BMI at the time of surgery was 41.2 $\pm$ 5.3 kg/m^2. Average length of stay was 1.2 $\pm$ 0.5 days. The overall 30 day complication, readmission, reoperation and mortality rates were 7.9%, 1.9%, 0% and 0% respectively. Average follow-up time was 33.6 $\pm$ 15.4 months across the sample. During this time period, the median percent excess weight loss was 46% with average weight loss at 43.4 $\pm$ 26.5 lbs. There were no significant differences between LSG and LRYGB patients with respect to any demographics, comorbid conditions, BMI at the time of surgery, length of stay, overall 30 day complications and mortality rates, or length of follow-up. However, LRYGB patients had significantly higher percent excess weight loss than LSG patients (67.2% vs 39.5%) [$p < .001$] and higher average weight loss (64.1 $\pm$ 23.2 lbs vs 37.5 $\pm$ 24.5 lbs) [$p < .001$].
Conclusions: In a single bariatric surgery center of excellence, we found that for those patients 65 years of age and older, LSG patients lost substantially less weight than LRYGB patients after nearly three years of follow-up. This has important implications for clinical practice given that the LSG is the fastest growing procedure in the US and may make up 50% of all bariatric operations by 2020. This increase may be based on the perception that LSG patients have fewer complications than LRYGB patients with equivalent weight loss. However, for this elderly patient population, our findings do not demonstrate equivalent weight loss results and 30 day complications appeared to be similar. These findings should be confirmed in a larger more diverse sample of patients. Further research is needed to better understand if older LSG patients also have differential rates of disease resolution compared to LRYGB patients.

A5008

IN THE MEGA-OBESE WEIGHT LOSS, BMI AND RESOLUTION OF WEIGHT-RELATED MEDICAL PROBLEMS AFTER BILIOPANCREATIC BYPASS/DUODENAL SWITCH VARY BY RACE: AN ANALYSIS OF 1,673 BOLD DATABASE PATIENTS

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Background: Biliopancreatic bypass/duodenal switch (Duodenal Switch) is the bariatric operation of choice for many of the most extremely obese patients. Duodenal Switch results for weight loss and resolution of obesity co-morbidities among the mega-obese are known. Variation by race for pre-operative weight, BMI, and the frequencies of obesity co-morbidities in patients presenting to have Duodenal Switch has been reported. However, whether or not treatment responses to Duodenal Switch differ according to racial categories not been investigated.
Objective: To identify racial variations following Duodenal Switch in weight, weight loss, and BMI, and the resolution of obesity co-morbidities.
Methods: Data from the Surgical Review Corporation's BOLD database on 1,673 patients who underwent Duodenal Switch was analyzed retrospectively in four groups: African-American (n=131), Caucasian (n=1,380), Hispanic (n=48), and Other (Pacific Islanders, Native Americans, or >1 race recorded; n=108). Six Asian Duodenal Switch patients in BOLD were too few for statistical analysis. Weight, BMI, and incidence of obesity-related co-morbidities were tabulated in each of the five racial groups pre-operatively at 2, 6, 12, 18, 24, and 36 months following DS surgery. Outcomes analysis used General Linear Models that included baseline and post-operative data, and were modified for binomial distribution of dichotomous variables. Pair-wise comparisons of results for the African-American, Caucasian, Hispanic and Other groups versus each other were made at each interval.
Results: Pre-operative weight (kg) for African-Americans, Caucasians, Hispanics and Other was 161+-31, 148+-32, 145+-33, and 150+-33, respectively ($p<0.05$), and BMI was 57+-10, 52+-9, 53+-11, and 52+-9, respectively ($p<0.01$). Decreasing numbers of African American, Hispanic, and Other patients in follow-up precluded statistical analysis beyond 18 months. African-American weight loss was greatest at 12 months but their weight was highest also ($p<0.01$), as was BMI at 6 months ($p<0.01$). African-American 6 month asthma, stress urinary incontinence, diabetes, back pain, lower extremity edema, and musculoskeletal pain were lowest ($p<0.05$), as was 12 month dyslipidemia ($p<0.05$). Caucasian hypertension at 6 months was lowest ($p<0.01$), but 6 month liver disease and musculoskeletal pain were highest ($p<0.05$), as was 12 month cholelithiasis ($p<0.01$). Diabetes, dyslipidemia, and lower extremity edema were highest among Hispanics at 6 months ($p<0.05$) as was 12 month abdominal skin problems/panniculitis ($p<0.05$). Following duodenal switch, among Hispanic patients the incidence of GERD, stress urinary incontinence, lower extremity edema, depression, and alcohol use all increased, the frequency of diabetes nearly doubled, and pulmonary hypertension tripled from baseline, while these parameters declined in the other racial groups. Stress urinary incontinence, asthma, and back pain were highest among the Other group ($p<0.01$) and dyslipidemia was second only to Hispanics. Liver disease was lowest among Other patients, compared to African American, Hispanic and Caucasian ($p<0.05$). Liver disease increased from the pre-operative percentages in African-Americans, Caucasians, and Hispanics but decreased in Other patients. Early 2 month depression was highest in Caucasians and lowest in the Other group. Outcomes for angina, congestive heart failure, peripheral vascular disease, pulmonary hypertension, obstructive sleep apnea, obesity hypoventilation syndrome, abdominal hernia, GERD, gout, polycystic ovarian disease, pseudotumor cerebri, psychological impairment, alcohol use, substance abuse, tobacco use, and support group attendance did not vary by race.
Conclusions: In the first 12 months after surgery, weight, weight loss, BMI and the

resolution/persistence of weight-related co-morbidities vary significantly by race among the mega-obese patients who choose to undergo Duodenal Switch. African-Americans lost the most weight, but remained heavier than other racial groups, possibly related to higher pre-operative body mass. Nevertheless, African-Americans experienced the greatest resolution of seven obesity co-morbidities. Caucasians resolved hypertension well, but musculoskeletal and hepato-biliary conditions persisted. Hispanic patients benefited somewhat less from Duodenal Switch than did the other racial categories. The Other grouped nationalities benefited less for stress urinary incontinence, asthma, back pain and dyslipidemia, but did well with obesity-related liver disease. Whether or not these findings hold true for longer term outcomes after Duodenal Switch is not clear from the data and will require follow-up in larger populations of African-American and Hispanic patients. Knowing these racial variations in Duodenal Switch outcomes pre-operatively may help to optimize the management of mega-obese patients.

A5009

LAPAROSCOPIC SLEEVE GASTRECTOMY AFTER FAILED GASTRIC BANDING: IS IT REALLY EFFECTIVE?

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Introduction: Several long-term studies have shown that laparoscopic adjustable gastric banding (LAGB) is associated with a high rate of weight loss failure and complications requiring its removal. The laparoscopic sleeve gastrectomy (LSG) is increasingly being performed as rescue procedure after LAGB failure. The aim of the present study was to analyze our personal experience with the LSG in order to evaluate if revisional LSG after failed LAGB was as safe and effective as primary LSG.
Methods: We retrospectively reviewed of our prospectively collected data on consecutive LSG between March 2009 and March 2014. Outcome measures included mortality, postoperative complications and weight loss results. LSG success was defined as percentage of excess weight loss (% EWL) > 50%.
Results: The primary LSG group (PG) contained 496 patients and the LSG conversion group (CG) contained 96 patients. All the conversions to LSG were performed in two steps. The mean time between gastric band ablation and conversion to LSG was 15.7 ± 18.7 (3-123). Mortality was 0 in both groups. The rate of postoperative complications was 6.4% in the PG and 5.2% in the CG (p=ns). Leak rate was 3.2% and 1%, respectively, in the PG and CG (p=ns). The rate of patients who completed the follow-up at 1, 3, and 5 postoperative years was 85.1%, 77.1%, and 92% respectively, in the primary group and 95.6%, 89%, and 87.5% respectively in revisional group. The mean %EWL at 1, 3, and 5 postoperative years was 68.3% , 70.7% and 61% in the PG and 49.3%, 48.77% and 46.4% in the CG (p=ns). Conversely, at the same time during follow-up, the failure rate was 15.3%, 16%, and 29% in the PG and 45.7%, 48.7%, and 50% in CG (p<0.0001, p<0.000, and p= 0.2).
Conclusion: Conversion of failed LAGB to LSG is a safe procedure but with worst weight loss results compared to primary LSG. Furthermore LSG as rescue procedure maintains a long-term failure rate unacceptably high.

A5010

PREGNANCY FOLLOWING BARIATRIC SURGERY: THE EFFECT OF TIME-TO-CONCEPTION ON MATERNAL WEIGHT GAIN AND NUTRITIONAL STATUS

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Background: At our medical center, female patients who have undergone bariatric surgery are advised to defer pregnancy for two years surgery, in an attempt to avoid the following complications: inadequate maternal weight gain (for pregnancy), inadequate maternal weight loss (following bariatric surgery), hyperemesis gravidarum, and nutritional deficiencies.
Methods: We examined our database of bariatric surgery patients from a large, urban, public hospital from March 2011 to July 2013. During that period, we identified 54 women who became pregnant after undergoing bariatric surgery. Of these women, 41 were included in the analysis. Twenty-six pregnancies occurred in women who had undergone bariatric surgery less than 2 years prior to conception, and 15 occurred in women who had undergone bariatric surgery greater than 2 years prior to conception. Gestational age at delivery, number of NICU admissions, weight gain during pregnancy, hyperemesis gravidarum, and nutritional deficiencies (iron, vitamins, protein, glucose) during pregnancy were compared for the two groups.
Results: The women with <2 years between bariatric surgery and conception had a higher percentage of RYGB and LSG surgeries (p=0.0003), and had more weight loss (p=0.018) and BMI loss (0.014) from bariatric surgery to conception. There were no significant differences in pregnancy outcomes when comparing mothers with <2 years and >2 years between bariatric surgery and conception. The rates of full-term deliveries (85% vs. 87%, P=0.321), NICU admissions (4% vs. 7%, P=0.999), hyperemesis gravidarum (31% s. 40%, P=0.548) were not significantly different between the two groups. There were also no significant differences in nutritional deficiences, including iron (58% vs. 60%, P=0.885), vitamin B1(46% vs. 20%, P=0.177), vitamin B6 (12% vs. 0%, P=0.287), vitamin B12 (31% vs. 13%, P=0.277) vitamin D (65% vs. 87%, P=0.168), protein (62% vs. 40%, P=0.183) and low blood glucose (77% vs. 73%, P=0.999).
Conclusions: There were no significant differences in gestational age, rate of NICU admission, pregnancy weight gain, hyperemesis, or nutritional deficiencies when comparing women who conceived within 2 years or after 2 years of their bariatric surgery.

A5011

PREDICTORS OF INADEQUATE EXCESS WEIGHT LOSS 12-MONTHS AFTER LAPAROSCOPIC ROUX EN-Y GASTRIC BYPASS FOR MORBID OBESITY.

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Background: Laparoscopic Roux en-Y gastric bypass (LRYGB) for morbid obesity is efficacious resulting in approx. 70% excess weight loss (EWL) at 2 years. We studied factors predictive of inadequate EWL following primary LRYGB.
Methods: Data on consecutive primary LRYGB performed from Sept 09 to Mar 13 in a regional bariatric centre in the United Kingdom were analyzed. The effects of age, gender, baseline body mass index (BBMI), preoperative EWL, length of time between initial consultation and surgery (TtS), presence of diabetes mellitus (DM), arthritis, obstructive sleep apnea (OSA), and postop length of stay (LOS) on 12-month EWL were studied. General linear regression models were used to evaluate group differences in EWL and assess independent associations between variables and EWL. Stepwise regression analyses estimated individual contributions of independent variables to the variance in 12-month EWL. In this study, inadequate 12-month EWL was defined as <50%.
Results: LRYGB was performed in 227 patients with mean±SD age and BMI of 48.6±11 yrs and 53.6±7.1 kg/m^2, respectively. EWL at 12-months had an inverse correlation with age

(p=0.01), BBMI (p<0.001), TtS (p=0.001), OSA (p=0.039) and DM (p=0.039). Conversely, there was a positive association between EWL during the preoperative period and that at 12-months postop (p=0.009). There was no effect of gender, arthritis, or LOS on 12-month EWL. Multiple regression analysis demonstrated inadequate EWL at 12-months to be predicted by older age (>60 yrs), diabetes, higher BBMI (>60 kg/m^2), preoperative weight gain and in patients who waited longer than 18-months for surgery (p=0.027).
Conclusions: Preoperative factors predictive of inadequate EWL at 12-months following LRYGB include higher initial BMI, older age, DM, and preop weight gain. Patients with these factors should be provided intensive perioperative support to improve clinical outcomes.

A5012
GASTRIC BYPASS SURGERY REGULATES GENE EXPRESSION OF PROMOTING FACTORS OF DIABETIC NEPHROPATHY IN DIABETIC FATTY RATS
Gastric Bypass Surgery Regulates Gene Expression of Promoting Factors of Diabetic Nephropathy in Diabetic Fatty Rats
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Introduction: Favorable effects of Roux-en-Y gastric bypass (RYGB) on glycemic status have been widely shown. However, whether these changes impact end-organ complications of diabetes is not well characterized. Diabetic nephropathy is the leading cause of chronic kidney disease and a prime indication for dialysis in the United States. Transforming growth factor beta (TGF-b) is a key mediator of the hypertrophic and prosclerotic changes in diabetic nephropathy, and high ambient glucose concentration and oxidative stress increases the expression and bioactivity of TGF-b in renal cells. In this experimental study, we used a targeted gene approach to examine the effect of RYGB on diabetic nephropathy in obese diabetic rats.
Method: Forty-two adult Zucker Diabetic Fatty (ZDF) rats were randomized into three groups (sham surgery, RYGB, or pair-fed to RYGB). Five lean non-diabetic rats constituted the control group. Glucose metabolism was assessed using an oral glucose tolerance test before and 30-days after surgery. At completion of the study, kidneys were harvested to assess TGF-b, glutathione peroxidase (GPx), and facilitative glucose transporter 2 (GLUT2) mRNA expression.
Results: At 30-days after surgery, the RYGB group had a significantly lower body weight compared to sham (P<0.02). RYGB also improved glucose tolerance (P<0.05), and decreased fasting glucose levels when compared to both the sham (P<0.01) and pair-fed (P<0.01) groups. Kidney TGF-b expression was higher in the sham-operated diabetic group compared to lean healthy controls (P=0.05). Importantly, RYGB surgery led to a significant reduction in TGF-b expression compared to sham surgery (P<0.01). Kidney GLUT2 mRNA expression was 23% lower in the RYGB group compared to sham controls (P<0.04). Diabetes was associated with an increased expression of GPx gene (P<0.03 for sham vs. lean). However, increased GPx gene expression was not observed in RYGB (p=0.34) and pair-fed (p=0.54) compared to lean non-diabetic rats.
Conclusion: This is the first experimental study to show that in addition to improving glucose metabolism, RYGB surgery may provide renoprotective effects in diabetic rats. The mechanism is unclear, but RYGB may suppress renal oxidative stress and facilitative glucose transport, which can lead to lower TGB-b gene expression. These findings warrant prospective human studies on the role of RYGB in the prevention and regression of diabetic nephropathy.

A5013
DOES PREOPERATIVE RESTING ENERGY EXPENDITURE PREDICT WEIGHT LOSS AFTER BARIATRIC SURGERY?
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Background: Resting Energy Expenditure (REE) affects weight homeostasis but its effect on weight loss after bariatric surgery is not well studied. Further, how the profound weight loss after bariatric surgery affects REE and any differences between bariatric procedures also need further investigation.
Objectives:
1. To determine if patients' measured preoperative REE predicted weight loss after bariatric surgery and if any differences existed by surgery type.
2. To determine whether the changes that occur to REE after bariatric surgery are affected by the type of procedure
Method: Review of prospectively collected data in a bariatric surgery database of a center of excellence was conducted. After IRB approval, patients who underwent laparoscopic Roux-en-Y gastric bypass (LRYGB) or laparoscopic sleeve gastrectomy (LSG) between 2006 and 2013, had recorded preoperative or postoperative REE, and at least 1 year follow-up weight loss data were included in our study. Baseline REE was correlated with %EWL at 12 and 24 month follow-up and a multiple regression model incorporating the patient's age, gender, ethnicity, surgery type, preoperative REE, and baseline BMI as independent variables to predict %EWL at the 12-month follow-up was used. We further assigned each patient to a slow, normal, or fast group based on the relationship of their measured REE and predicted REE according to the Harris-Benedict equation.[1] We used a 2x3 MANOVA to assess whether these groups had a significant effect on %EWL based on procedure performed (LRYGB vs LSG). We also compared the changes in REE after surgery between LRYGB and LSG patients in a subgroup of patients who had both preop and postop REEs performed using a t-test.
Results: 404 patients were included. There were no differences at baseline between LRYGB and LSG patients except for a slightly higher BMI in the LRYGB group. %EWL at 1 and 2 years follow-up did not correlate with preoperative REE for both procedures. In addition, preop REE category did not have a significant effect on the patient's %EWL at 1 and 2 years on MANOVA ($F(2,167) = 2.37$, p = n.s.) but surgery type did ($F(1, 167) = 6.45$, $p < .05$). In multiple regression preoperative REE was not a significant predictor of %EWL (β = -.10, n.s.). The overall model fit was $R^2 = .19$, $F(6, 336) = 12.91$, $p < .01$. REE decreased considerably in both groups a year after surgery but there were no significant differences in the percent change (table 1)
Conclusions: REE at baseline does not predict weight loss up to 2 years after bariatric surgery independent of procedure type; REE declines by about 20% 1 year after both LRYG and LSG. Patients with "slow" metabolism loose similar amounts of weight compared with "fast" metabolism patients; their weight loss is mainly determined by the type of procedure (LRYGB > LSG). This information is important for preoperative counseling of the bariatric surgery patient.

A5014

THE EFFECTS OF BEST PRACTICE MODELS ON 30-DAY READMISSION RATES AT A COMPREHENSIVE CENTER PERFORMING LAPAROSCOPIC ADJUSTABLE GASTRIC BANDING, LAPAROSCOPIC SLEEVE GASTRECTOMY AND ROUX-EN-Y GASTRIC BYPASS

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Background: Best Practice Models following bariatric procedures have been shown to decrease hospital morbidity and mortality. Major insurance carriers, hospital administrators and most recently the American Society for Metabolic and Bariatric Surgery (ASMBS) placed great emphasis on 30-day readmission rates and patient outcomes. Weight loss surgeries present many challenges to patients as well as healthcare providers and so a commitment to best practice guidelines is a crucial part of being a bariatric center of excellence. We adopted center of excellence (COE) best practice protocols since 2005 and implemented 24-hour post discharge phone calls

since 2006. We are looking to show a decrease trend in 30-day readmission rates following bariatric procedures in a Metabolic Surgery Accreditation Quality Improvement Program Accredited Center during a 3 year period.
Method: We identified all patients who underwent a primary bariatric operation for the last 3 years and extracted their records from the hospital's electronic medical database. We also reviewed the Center's Bariatric Program readmission log and identified all hospital readmissions within 30 days of index operation, cause for readmission, type of operation performed, associated risk factors and patient demographics. Once identified, we developed quality improvement projects and initiated practice protocols to decrease and or prevent potential adverse events. The protocols included standardized medications for specific procedure, a discharge checklist outlining specific criteria for pain, amount of liquid consumed and patients' understanding of their discharge instructions. We also implemented a 24-hour post discharge telephone interview conducted by the nurse practitioner to discuss physical and emotional state of health, hydration status, pain satisfaction level and compliance with other postoperative recommendations following the bariatric procedure.
Results: A total of 506 patient records were identified and reviewed. From these patients, 10 (1.9%) patients were readmitted within 30 days of the primary operation. The patients who had Laparoscopic Sleeve Gastrectomy had the highest 30 day readmission rate of 1.0% (6 patients), Laparoscopic Roux-en-Y Gastric bypass had a readmission rate as low as 0.4% (2 patients), and Laparoscopic Adjustable Gastric Band 0.4% (2 patients). Among the Gastric Sleeve Patients, nausea, dehydration, reflux, electrolyte imbalances, (0.4%) and portal vein thrombosis (0.4%) were the most common adverse events identified as the cause for the readmission within 30-days. One patient (0.2%) of the six patients had port site infection and one was readmitted for renal calculi (0.2%). Other causes identified for readmission among the other procedures were lap band port site infection and an intra-abdominal abscess. Best practice protocols were implemented following categorization of all causes which subsequently reflected a decreasing trend towards 30-day readmission rate over time from 4% to nearly a 0% readmission rate consecutively.
Conclusion: With the implementation of 24-hour postoperative phone calls, practice protocols and best practice models, we found an overall improvement 30-day readmission rate of 0% following primary bariatric operations. Taken together, this study supports the concept that hospital readmission rates can be significantly decrease following primary bariatric procedures with the routine use of practice protocols and implementation of best practice models.

A5015

THE ROLE OF CONTROLLABLE ENVIRONMENTAL VARIABLES IN WEIGHT LOSS SUCCESS AFTER BARIATRIC SURGERY

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Background: Bariatric surgery is the most effective intervention for morbid obesity. However, up to 30% of post bariatric surgery patients have suboptimal weight loss outcomes due to weight plateau and/or weight regain. Achieving and maintaining successful weight loss after surgery is a challenge, with weight regain associated with the return or worsening of psychological and health co-morbidities. Several environmental factors that are in the control of the individual (e.g., use of larger plates, having visible fruit on the counter at home) have been shown to serve as either risk-increasing or risk-reducing factors on body weight in non-bariatric populations (e.g., Wansink 2007). However, these factors have not been examined in a post-bariatric sample. The aim of this study is to investigate the impact of such controllable environmental factors on weight loss success in a post-bariatric sample.

Method: In a large (n= 487) anonymous online survey of patients at least 1 year after surgery, participants were asked a series of questions, of which 12 focused on various controllable environmental risk-increasing and risk-reducing factors previously reported in the research literature (e.g., Wansink, 2007)**.** Questions assessed the location of meals in the home, the frequency of dining at restaurants, the size of dishware and serving utensils, and the visibility, accessibility, and packaging for different types of snacks. Post-bariatric outcome success was defined as losing at least 50% of pre-surgical excess body weight. Independent samples t-tests were used for continuous variables and Chi-Square tests were used for dichotomous variables to examine differences between patients with and without successful weight loss outcomes on each individual question. **Results:** The mean age of participants who completed the survey was 53.2 (SD=9.2). Our sample was 95.5% female, 85.7% white, and 63.9% married. Seventy-eight percent underwent gastric bypass, 22.2% underwent gastric sleeve, and on average participants were 5.8 (SD=4.4) years post-gastric bypass surgery. A total of 28.7% were classified as having suboptimal outcomes, having lost < 50% of their excess body weight. The focus of our research was to examine the differences between those with and without successful weight loss outcomes with respect to the various factors that had previously been shown to be either risk-increasing or risk-reducing (e.g., Wansink, 2007). Our results suggest that those who had suboptimal weight loss outcomes report significantly higher tendencies to have previously identified risk-increasing factors than those who were successful with weight loss. These risk-increasing factors include having sweet and salty snacks visible on the counter (X^2=5.7(1), p=0.02), having candy on or in one's desk at work, (X^2=4.4(1), p= 0.04), eating off dinner-size versus salad-size plates (X^2=6.7(1), p=0.01), eating snack foods from large packages (i.e., family size) (X^2=11.4(1), p=0.002), eating potato chips or other salty snacks more frequently (t(485)=3.2, p=.002), eating meals in rooms other than the kitchen and dining room more frequently (t(485)=-3.8, p=0.001), and dining at restaurants more frequently (t(215)=2.7, p=0.02). Subjects with suboptimal weight loss outcomes also report significantly less risk-reducing factors than those who were successful with weight loss. These include having visible fresh fruit on the counter (X^2=13.6(1), p=0.001), leaving food on one's plate more frequently (t(485)=2.8, p=0.007), and eating fruit as an afternoon snack more frequently (t(279)=3.0, p=0.004). No differences were found between participants with successful versus suboptimal weight loss in terms of using large or small sizes of serving utensils, having fresh fruit and vegetables visible in the refrigerator, or typically eating snacks from single serving (i.e., 100 calorie) packages. **Conclusions**: The environmental factors examined here are controllable by bariatric patients and almost all appear to affect post-bariatric patients' success with weight loss. These findings are particularly important because patients can use this information to make changes that are likely to improve their health outcomes after bariatric surgery. Further research into these variables should explore behavioral changes since surgery and inform treatment recommendations for bariatric patients to optimize their likelihood of weight loss success. References: Wansink, B. & Sobal, J. (2007). Mindless Eating: The 200 Daily Food Decisions We Overlook. *Environment and Behavior*, 39(1): 106-23.

Wednesday, November 4, 2015

Posters of Distinction (listed in order of presentation) 12:15pm – 1:15pm in Exhibit Hall A5016

SINGLE-STAGE VS. TWO-STAGE LAPAROSCOPIC SLEEVE GASTRECTOMY AFTER FAILURE OF LAPAROSCOPIC GASTRIC BAND. A META-ANALYSIS REVIEW.

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Introduction: While the laparoscopic sleeve gastrectomy (LSG) can be performed as a primary procedure without prior bariatric surgery, it is most commonly performed as a revisional surgery once laparoscopic gastric band (LAGB) failure has occurred. With its growing popularity, controversy has arisen in the field of bariatrics as to whether the LAGB to LSG conversion should be performed in one stage or two stages. The one-stage (1S) procedure involves the LSG immediately following the LAGB removal in one operation. In contrast, the two-stages (2S) procedure involves a period of recovery between the LAGB removal and the LSG. In order to determine the effectiveness of the two different approaches, a detailed meta-analysis was conducted.

Methods: The analysis primarily consisted of findings of thorough research for each LAGB to LSG approach. The database used to find these specific researches and subsequent scientific articles was PubMed from the National Institutes of Health. Keywords that were generally utilized to perform these searches included: "laparoscopic sleeve gastrectomy", "sleeve gastrectomy", "LAGB conversion", "LAGB one stage", "LAGB two stages", "bariatric surgery complications", "LSG revisional surgery", "LAGB LSG Insurance coverage", "LSG 1 stage complications", "LSG 2 stages complications". Over a number of different searches that utilized various combinations of the keywords, the articles were narrowed down, just by title, to about 15 total for both approaches. Once that list was acquired, the next step was to screen the articles based off of their relevance to our study. Articles that were excluded generally did not provide large case studies, specific data and statistics of criteria such as complications or only included vague or brief information that would not necessarily be useful. The comprehensive meta-analysis of articles from these searches led to further investigation of the references included in those articles. Those cross references in the chosen articles that provided more pertinent information were evaluated using the same procedure as mentioned above to determine significance.

Results: The operative times were somewhat comparable. The 2S procedure consists of an average 47 (13-79) minute band removal and an average 105 (40-240) minute LSG, resulting in 152 (53-319) minutes of total operating time after a period of recovery between procedures. This only differs from the average 1S by about 22 minutes. The total length of hospital stay is predicted to be longer in the 2S approach because the procedure involves two separate hospital admissions. Complications for the 2S approach were seen in 13/76 patients (13.1%). These included anemia, transient food intolerance, transient dysphagia, leukocytosis and fever. The sample size for the 1S was 323 patients, and the sample size for the 2S was 76 patients. The drastic difference in sample size might not be an accurate indicator of complications such as leakage rate amongst various others. Upon further findings however, the German Bariatric Surgery Registry found, within a sample size of 240 containing a mixture of 1S and 2S procedures that the leakage rate for the 1S was 3.3% and the leakage rate for the 2S was 0%. The 2S is more expensive due to hospital readmission and the anesthesia cost for a second procedure, however, the cost presented in the table for 1S was for a completely complication-free procedure. There are higher complication rates for the 1S, and the total cost could easily double to around $40,000 if readmission and reoperation is required to address those complications.

Conclusion: The presented data seems to support the claim that the 2S LAGB-LSG conversion approach is the more effective procedure that surgeons perform. It is beneficial to the patient because of the reduced risk of perioperative complications. Of all the criteria researched, only the cost of procedure was favored over the 2S approach. Another substantial factor is the leakage rate. In both the 240 sample sized and 323 sample sized cases, the leakage rate for the 1S approach was greater than the 2S approach. The debate on whether the 1S or 2S approach to the LAGB-LSG procedure is more efficient is still in its primitive stage. The validity of the conclusions drawn based on this meta-analysis is

in question, primarily due to lack of statistical data regarding the 2S procedure and even less data comparing the two methods. Majority of the 2S studies had extremely small sample sizes and cannot be deemed as a viable representative population. More research must be conducted on the topic before any actual factual conclusions can be drawn and moreover confirmed. A randomized, prospective trial could provide the definitive evidence essential to solving this surgical dilemma.

A5018

FAST TRACK BARIATRIC SURGERY: SAFETY OF DISCHARGE ON THE FIRST POSTOPERATIVE DAY AFTER LAPAROSCOPIC GASTRIC BYPASS

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Introduction: Fast track surgery is an approach using multimodal perioperative care to reduce hospital stay and related costs, and to enhance recovery. The aim of this study was to assess outcomes of early discharge on postoperative day (POD) 1 after laparoscopic Roux-en-Y gastric bypass (LRYGB).
Method: The American College of Surgeons National Surgical Quality Improvement Program (NSQIP) Database was analyzed to identify severely obese patients with age ≥ 18 years and BMI ≥ 35 kg/m^2 who underwent LRYGB in 2012 and 2013. Patients discharged on POD 4 or later were excluded. We compared the patients who were discharged on POD 1 (group 1) with the patients discharged on POD 2 or 3 (group 2). Baseline characteristics and 30-day outcomes were compared between two groups by univariate and multivariate (binary logistic regression) analysis.
Results: Out of 16,968 patients (age: 44.9 ± 11.7 year, BMI: 46.4 ± 8.2 kg/m^2, 79.4% female), 3,078 patients (18.1%) were discharged on POD 1. The two groups had similar age and gender. 20.2% of non-Hispanic whites were discharged on POD 1 versus 15.9% of non-Hispanic blacks and 15.5% of Hispanics ($p<0.001$). BMI was lower in group 1 (45.5±7.8 kg/m^2 vs 46.6±8.3 kg/m^2, $p<0.001$). ASA class and most baseline comorbidities were similar in two groups; however, group 2 had significantly higher frequency of diabetes on insulin (13.5% vs 10.9%, $p<0.001$), renal failure on dialysis (only 1 out of 27 dialysis patients discharged on POD1, $p=0.047$), chronic steroid/immunosuppressive use (1.3% vs 0.7%, $p=0.018$), and bleeding disorder (1.2% vs 0.6%, $p=0.009$). Concurrent procedures including cholecystectomy, band removal, and lysis of adhesions were also performed more frequently in group 2 ($P<0.05$). Multivariate analysis confirmed that all aforementioned factors (except concurrent lysis of adhesion) are associated with length of hospital stay. Group 1 had lower rate of postoperative complication (2.6% vs 4.1%, $p<0.001$) and reoperation (0.8% vs 1.4%, $p=0.01$). 30-day unplanned readmission occurred in 129 (4.2%) patients of group 1 and 801 (5.8%) patients of group 2 ($p=0.001$). **Conclusion**: Discharge on POD 1 after laparoscopic gastric bypass is safe and feasible, if discharge criteria met. Readmission rate is lower in this group of patients. Race/ethnicity, diabetes on insulin, dialysis, steroid/immunosuppressive use, bleeding disorder, and performing concurrent procedures should be considered when planning for discharge on POD1 after gastric bypass.

A5019

LENGTH MATTERS: ADOLESCENTS WITH LAPAROSCOPIC ADJUSTABLE GASTRIC BANDING AT 5 YEARS AND BEYOND

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Background: Adult studies report increasing frequency of patients undergoing band removal over time. We explored “band survival” in our IRB-approved adolescent laparoscopic adjustable gastric banding (LAGB) study group.

Method: We reviewed band survival in 50 morbidly obese adolescents who underwent LAGB from August 2006 to November 2008. Records of patients who were available for follow-up > 5 years after LAGB were also reviewed.
Results: Fifty adolescents, age 14.3 through 19.2 years (mean age of 17 years) underwent LAGB. The mean preoperative weight was 142.1kg, mean BMI was 50.0 kg/m^2 and mean excess body weight (EBW) was 70.2 kg. There were 16 males and 34 females. All patients were followed for at least 5years. Percent EBW loss was 21.3%, 29.4%, 31.4%, 42.5% and 26.7% at 6, 12, 24, 48 and 60months respectively. Twelve of 50 patients underwent band removal within 5 years: 5 were converted to sleeve gastrectomy and 5 to Roux-en-Y gastric bypass. 5 patients underwent band removal >5 years after placement. Weight loss failure and reflux esophagitis were the most common indications for removal.
Conclusions: Long-term follow-up indicates that over one third of patients request band removal for failure of adequate weight loss or for symptoms of discomfort. Two years is inadequate follow-up for anything more than the safety of the surgical procedure.

A5020

SINGLE-ANASTOMOSIS DUODENAL-JEJUNAL BYPASS WITH SLEEVE GASTRECTOMY (SADJB-SG) VERSUS RY GASTRIC BYPASS: MIXED MEAL STUDY

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Background: Laparoscopic single anastomosis duodenal-jejunal bypass with sleeve gastrectomy (SADJB-SG) is a new metabolic surgery specifically designed for the treatment of type 2 diabetes mellitus (T2DM). This study investigates the mechanism of SADJB-SG by comparing the mixed meal results between SADJB-SG and RYGB.
Methods: A total of 35 consecutive patients (21 SADJB-SG and 14 RYGB) with mean age 40.9(9.7) years, BMI 34.7(5.2), HbA1c 9.0(1.8)% and duration of T2DM 4.9(3.8) years were followed up before and at 1 year after surgery. A standard 237ml mixed meal test with (250 Kcal) visual analogue scales in assessment of appetite sensations was performed before and after surgery.
Results: Both groups were compatible at pre-operative characters. One-year after surgery, the mean BMI decreased to 25.1(2.9) with mean weight loss of 25.1(6.3)%. Complete remission of T2DM was achieved in 21(60.0%) the patients and the mean HbA1c decreased to 6.1(0.8)% with no difference between groups. However, SADJB-SG group had a significant less hyperglycemic response at 15 minutes after mixed meal test than RYGB. In addition, SADJB-SG patients felt less hunger and prospective consumption, earlier fullness and higher satiation than RYGB patients, but similar in nausea sensation.
Conclusion: Both SADJB-SG and RYGB is effective in T2DM treatment but SADJB-SG is superior in avoiding post-meal hyperglycemic surge and better satiation than RYGB.

A5021

A 2-WEEK LIQUID HIGH PROTEIN DIETARY INTERVENTION (LHPDI) REDUCES ENDOTOXEMIA, AND IMMUNE AND INFLAMMATORY RESPONSES IN MORBIDLY OBESE DIABETIC PATIENTS

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State University of New York at Buffalo School of Pharmacy[1] State University of New York at Buffalo[2]

Background: Weight loss and antidiabetic effects of gastric bypass (GB) have long been attributed to calorie restriction alone. However, metabolic effects, associated with reduced immune and inflammatory responses, also occur. This study sought to determine the effects of

whey based LHPDI on endotoxemia and several immune and inflammatory markers.
Methods: Ten adults with morbid obesity and type 2 diabetes undergoing GB were studied over a two week normal diet control period and a two week LHPDI preceding GB. The LHPDI was a regimen of four shakes, each containing 7g carbohydrate, 0g fat, and 27g of whey protein. Fasting blood samples were obtained at start of the control period, before LHPDI, and day of surgery to assess change in weight, glucose, insulin, endotoxin, and the immune and inflammatory markers, TLRs, SOCS-3, ICAM-1, MCP-1 and MMP-9.
Results: At completion of the LHPDI subjects had significant reduction in weight by 6.0±0.4%, glucose by 11±3%, insulin by 48±9% and HOMA-IR by 61±14%. The mRNA expression of TLR-2 and SOCS-3 in MNC was reduced by 15±5% and 29±9%, respectively. Plasma concentrations of endotoxin, MMP-9 and ICAM-1 fell following the HP diet by 16±4%, 11±3% and 22±7%, respectively. There was no change in TLR-4 and CD14 expression or in plasma MCP-1. There was no significant change in these indices after the normal diet period.
Conclusion: Two week LHPDI mimics the results of GB by decreasing weight, glucose, and insulin resistance while reducing endotoxemia and markers of immune activation and inflammation. Commonly used as a liver reduction diet preceding GB, further study of this LHPDI should be undertaken to evaluate the magnitude and duration of its effects compared with GB, and may shed light on the metabolic effects of GB.

A5022

PROXIMAL GASTRECTOMY WITH ESOPHAGOJEJUNOSTOMY FOR CHRONIC GASTROPERITONEAL FISTULA FOLLOWING SLEEVE GASTRECTOMY AND REVISIONAL GASTRIC BYPASS

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Background: The most problematic complications following sleeve gastrectomy are leaks and fistulas. The management is often long and cumbersome. The success rate of non-operative management (i.e. stents) is between 40 and 70%. Patients with persistent fistulas are candidates for salvage surgery, including conversion to gastric bypass, or total gastrectomy.
Methods: We present a case of 47 year old female with a chronic gastroperitoneal fistula following a sleeve gastrectomy 1 year prior. In spite of multiple endoscopic treatments and a revisional gastric bypass, the fistula persisted. The fistula outputs were 15cc/24 hrs. A diagnostic laparoscopy with extensive lysis of adhesions, en block fistula resection, and reconstruction with Roux-en-Y esophagojejunostomy with a 50 cm biliopancreatic and 100cm alimentary limb were performed.
Results: The recovery was uneventful. The postoperative UGI ruled out leak and obstruction. She was discharged after 6 days tolerating a full liquid diet. On 1 week follow-up, the drain was removed, and patient's diet was advanced.
Conclusion: More definitive surgical options for chronic fistulas include conversion to esophagojejunostomy, or anastomosis of the jejunal Roux limb to the fistula. Esophagojejunostomy can be safely performed laparoscopically.

A5023

PROVIDER PREDICTION OF SUCCESS AFTER BARIATRIC SURGERY

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Background: At our single institution, a multi-disciplinary team evaluates each bariatric surgery candidate at a monthly meeting. Providers include surgeons, bariatric nurse

practitioners, dieticians, psychologists, and endocrinologists. The evaluation of each candidate includes variables like attendance in the pre-operative education classes and support groups, specific medical and operative considerations, as well as a candidate's behaviors, attitudes and ability to comply with the more subjective NIH criteria. Each provider gives a score reflecting their gestalt as to the candidate's suspected success. This is a one to five score with five being a patient who is an excellent candidate for bariatric surgery. Patients with an average score of less than three are re-evaluated at a later date. Patients with a score of three or greater may proceed on in the bariatric program.

Study Goals: This study was designed to see if our pre-operative prediction scores correlated with actual success after bariatric surgery. Success after bariatric surgery was defined as 40% excess body weight lost (EBWL) for laparoscopic adjustable gastric banding (LAGB) procedures and 60% EBWL for laparoscopic gastric bypass (LGBP) procedures. We also wanted to examine if the role on the multi-disciplinary team (surgeons, nurse practitioners, and 'others' (psychologists, dieticians, endocrinology) had any bearing on the ability to predict success.

Study Design: Data was extracted over a 3-year period (June 2008 to June 2011) at a single institution with a comprehensive, multi-disciplinary bariatric center of excellence for patients undergoing LAGB and LGBP procedures. Data regarding preoperative weight, operation type, operation date, all follow up appointments and weights were collected from the Bariatric Outcomes Longitudinal Database (BOLD). A total of 416 patients were identified for this time period. 70 patients were excluded (revisional surgery, lost to follow up, no scores or only one score). This provided 346 patients for analysis. Follow up ranged from 10 to 26+ months. 26 patients were only seen one time in follow up. One year follow up was defined as 10-14 months after surgery and this included 218 patients (126 band and 92 bypass patients). Two-year follow up was defined as 22-26 months after surgery and included 148 patients (97 band and 51 bypass patients). Three surgeons operated on all 346 patients (115/136/95 split). For statistical analysis, success was defined as 40% EBWL for band patients and 60% EBWL for bypass patients as described above. Scores were grouped by surgeons (3 different surgeons), nurse practitioners (NPs of which there are two), and 'others' (psychologists, dieticians, endocrinology of which there were 5 different individuals). Only one score was given for each patient from both the surgeon the nurse practitioner following the patient. The 'others' scores were averaged if there was more than one score for a patient.

Results: There was no statistically significant difference between pre-operative scores and success at one or two years post surgery for either bypass or band patients. These data were tested using the Wilcoxon Rank Sum test. When bypass and band patients were separated for analysis, this finding continued in each group except for band patients at one year. For band patients at one year, the surgeons gave statistically significant higher scores to patients who were unsuccessful (p-value 0.07). Additionally, the 'other' group (psychologists, dieticians, endocrinology) did give higher scores to all patients when compared to just the surgeon's scores (4.6375 vs 4.3275, $p<0.01$), when compared to just the NPs scores (4.6375 vs 4.5475, $p<0.05$), and when compared to both groups combined (4.6375 vs 4.4375, $p<0.01$). The NPs scores were also statistically significantly higher when compared to the surgeons' scores (4.5475 vs 4.3275, $p<0.01$). Overall, we had excellent success with our laparoscopic bypass patients with 78.3% and 76.5% achieving success (>60%EBWL) at the one and two year marks, respectively. Our success with band patients is also in line with the slower rate of weight loss with 16.7% achieving success (>40% EBWL) at one year and 28.9% at two years.

Discussion: Clearly it is advantageous to be able to 'weed out' patients who will ultimately be unsuccessful at weight loss following bariatric surgery. Our study shows that provider gestalt and subjective scores are not an adequate preoperative evaluation tool to identify successes and failures. Limitations to this study include the slower rate of weight loss with the LAGB vs. the LGBP. It would be interesting to

follow these patients out to 5 or 8 years post op to see if there is any correlation with long term success and maintenance of weight loss. Future endeavors from these study results would be to find or create a standardized, objective tool to evaluate patients preoperatively for bariatric surgery success.

A5024

ROUX-EN-Y GASTRIC BYPASS VERSUS SLEEVE GASTRECTOMY WITH JEJUNAL BYPASS FOR THE TREATMENT OF TYPE 2 DIABETES. RESULTS AT 12 MONTHS OF FOLLOW-UP

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Introduction: Laparoscopic Sleeve Gastrectomy with Jejunal Bypass (SGJB) has been performed since 2004 in our institution and, together with Laparoscopic Roux-en-Y Gastric Bypass (RYGB), has been published with good results in terms of Type 2 Diabetes Mellitus (T2DM) remission. The objective is to present the results of both techniques on diabetic obese patients at one year of follow-up.
Methods: A prospective cohort of obese patients (≥30 kg/m^2) and T2DM (according to ADA) was begun on November 2011, being non-randomly assigned to either SGJB or RYGB. We collected all data from programmed visits. Primary endpoint was the proportion of patients of each group with complete remission at 12 months. This variable was defined as glycemic control and glycated hemoglobin (HbA1c) ≤6.0% without anti-diabetic medications. Secondary endpoints are percentage of excess weight loss (%EWL) and surgical complications. For continuous variables Mann Withney or t-student test were used. Chi-square was used for reporting T2DM remission.
Results: A total of 56 patients met the inclusion criteria, 28 in the SGJB group and 28 in the RYGB group. There were no significant differences between the two groups in gender, age, BMI, glycemia, HbA1c or co-morbidities. The % of patients in the SGJB and RYGB group who achieved T2DM remission at 12 months was 67.9% and 57.1% respectively (p=0.41). 89.3% (SGJB) and 82.1% (RYGB) where without T2DM and no medications at 12 months (p=0.45). %EWL in SGJB and RYGB at 12 months was 95.8±30.5% and 85±30% respectively (p=0.29). One patient presented self-limited gastrointestinal bleeding in the SGJB group, and there was no mortality.
Conclusions: In this prospective cohort, there were similar results between both groups, although not significant. This study may show that duodenal exclusion is not the most important factor in T2DM remission. SGJB is a secure and effective technique and, with a longer follow should be considered as an alternative to RYGB.

A5025

3D CT VOLUMETRIC ANALYSIS OF GASTRIC SLEEVE ON POST OPERATIVE DAY 1 (POD 1) AND AT 1-YEAR POST-OP (PO) AFTER A STANDARDIZED LAPAROSCOPIC SLEEVE GASTRECTOMY (LSG): DOES IT HAVE ANY CORRELATION WITH PERCENT EXCESS WEIGHT LOSS (%EWL)?

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Background: LSG is the most common procedure for treatment of morbid obesity worldwide. Weight loss usually plateaus one year after the surgery possibly due to expansion of the sleeve. However, objective data on the natural history of the gastric sleeve volume and its correlation with weight loss remains sparse. The aims of our study were to: 1. Describe a novel model to estimate the size of the gastric sleeve volume in its physiologic state at POD 1 and 1-year PO, 2. Determine whether there is a correlation between gastric sleeve volume and

%EWL, and 3. Analyze whether there is any association in sleeve volume, %EWL, and total weight loss in superobese (BMI>/=50) and non-superobese (BMI<50) patients **Method:** A prospective observational study comprising of all patients undergoing LSG at our institution who elected to have CT scans at 1-year PO. Laparoscopic sleeve gastrectomy was performed over a 36F silicone bougie. Stapling was started 3 cm proximal to pylorus and ended 1cm lateral to angle of His. The gastric sleeve volume was evaluated on POD 1 and 1-year PO by utilizing a 128 Slice Dual-Source CT Scanner. 200 ml oral gastrograffin was given just before scanning (on table) to adequately fill the sleeve. No premedication was given to contract the pylorus or distend the sleeve in order to evaluate the sleeve in a physiologic state. Volume was calculated by manually tracing the outline of the gastric sleeve (region of interest or ROI) on each CT slice from the gastro-esophageal junction to the pylorus. Continuous variables are reported as mean +/- standard deviation (SD). Volume of sleeve at POD 1 and at 1-year is analyzed. Correlation between sleeve volume and %EWL is also evaluated (Rank correlation with Spearman's ρ). Subset analysis of superobese (n=8) versus non-superobese (n=22) is done using Wilcoxon rank-sum test. **Results:** 30 patients (12 males and 18 females) with pre-operative BMI of 46.5 +/- 8.9 kg/m^2 were included in the study. Sleeve Volume at POD 1 was 59.1+/-11.0 ml and 1-year PO was 123.3+/-20.1 ml. Significant increase in volume was observed over one year ($p<0.05$). Overall there was no correlation between %EWL and the sleeve volume on POD 1 and 1-year PO. Subset analysis (superobese vs. non-superobese) showed that there was no difference in the POD 1 sleeve volume. There was also no difference in the increase of sleeve volume (1-year PO minus POD1) (Table 1). However, during this period, the total weight loss (kg) was significantly higher in the superobese group ($p<0.01$) but the %EWL was lower, almost reaching statistical significance (Table 1).
Conclusion: A standard model to estimate the size of the gastric sleeve in a physiologic state is devised. When surgery is standardized, there is no significant variation in the initial or the 1-year sleeve volumes. Sleeve volumes increase significantly at 1-year PO and probably account for weight plateau in most patients at that stage. There is no difference in sleeve volume between superobese and non-superobese patients both on POD 1 and 1-year PO. The superobese group tends to lose more weight but with lower %EWL. Patient related factors like diet and exercise play a significant role in lower %EWL in superobese patients. Further studies are needed to tease out the factors that play a role in the difference in %EWL between superobese and non-superobese patients.

A5027

CHARACTERISTICS OF ADOLESCENTS WITH A POOR MENTAL HEALTH OUTCOME AFTER BARIATRIC SURGERY

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Background: Even if a majority of adolescents experience an overall improvement in mental health following bariatric surgery, some do not. About 1 in 5 report substantial depressive symptoms two years after surgery. This study explores differences between adolescents with a poor mental health (PMH) two years after bariatric surgery and adolescents with an average or good mental health (A/GMH).
Methods: Subjects were 82 Swedish adolescents with severe obesity from the Adolescent Morbid Obesity Surgery (AMOS)-study cohort, undergoing gastric bypass surgery. Mean age was 16.8 years (± 1.19; range 13-18), mean BMI was 45.4 (± 6.05; range 35.1-68.5) at inclusion and 67% were girls. Generic mental health variables (anxiety, depression, anger, disruptive behavior, and self-concept) as well as obesity-related problems were assessed by self-report questionnaires at baseline, 1 year and 2 years after gastric bypass. Standardized cut-offs on two different variables, depression and obesity-

related problems, were used to classify adolescents as either PMH or A/GMH two years after surgery. Mixed-model was used to analyze differences in outcomes between the groups.
Results: In total, 16 (20%) of 82 adolescents were classified as having a PMH two years after surgery. There were more girls (n=14) than boys (n=2) in this group and the inequality in gender distribution had a trend towards significance (p=0.053). No significant age difference was found (p=0.30). Anxiety and depression differed significantly (P=0.004 and P=0.028) between the groups at baseline, as adolescents with a PMH after two years had more symptoms of anxiety and depression already before surgery. One year after surgery more differences were observed as adolescents with a PMH in addition to reporting more symptoms of anxiety (P=<0.0001) and depression (P=0.003) also reported more anger (P=0.005) and obesity-related problems (P=0.006) than adolescents with a A/GMH. Still no differences in self-concept (P=0.345) or disruptive behavior (P=0.296) were seen. Two years after surgery, all measured aspects of mental health were worse in adolescents with PMH (all Ps<0.0001). BMI did not differ between groups at baseline nor at any follow-up (P=0.228, year 2).
Conclusions: A substantial number of adolescents, 20%, report PMH two years after undergoing gastric bypass which is much higher than expected from previous studies in adults. This indicates that there is an unmet need for psychological and psychiatric interventions in adolescents undergoing bariatric surgery. Pre-op identification appears difficult, but higher scores for anxiety and depression before surgery indicate need for increased support and close follow up. At the one year follow-up differences between the groups are prominent, except for self-concept and disruptive behavior, and targeted interventions should be offered to adolescents with more mental health problems already one year after surgery. Weight loss did, however, not differ between the groups demonstrating PMH and A/GMH.

A5028
THROMBOPHYLAXIS IN PATIENTS UNDERGOING BARIATRIC SURGERY
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Background: Patients undergoing bariatric surgery are at increased risk for developing symptomatic venous thromboembolism (VTE). The incidence of symptomatic VTE ranges from 0%-6%. Although the overall incidence of clinical VTE is lower than that seen with other general and orthopedic surgical procedures, pulmonary embolism is an independent predictor of death after gastric bypass surgery. The optimal strategy for perioperative thrombophylaxis in bariatric surgery has yet to be elucidated. The current available published literatures vary on the optimal type, dose and length of pharmacologic thrombophylaxis and the benefit of prophylactic IVC filter. Prior 2010 our institution used unfractionated heparin 5,000 units prior to induction of anesthesia, then twice daily during hospital stay. In 2010 our institution has proposed a guideline for perioperative thrombophylaxis for bariatric surgery based on risk stratification. Patients will be considered to be at high risk if they have one or more of the following: previous VTE or BMI >/= 60 kg/m^2 Or two or more of the following: Age > 50, BMI >/= 50 kg/m^2, male sex, recent history of smoking, obstructive sleep apnea, venous insufficiency, varicose veins, oral contraceptive or post-menopausal hormone use within 30 days The proposed guideline recommends pharmacologic thrombophylaxis using enoxaparin 40 mg SC at induction of anesthesia and then twice daily throughout hospitalization. High risk patients will continue enoxaparin injections after discharge for a total of 10-14 days postoperatively. Prophylactic IVC filter is not recommended.
Methods: We propose a retrospective study to evaluate the incidence of VTE rates and bleeding complications in all bariatric surgery patients at Dartmouth Hitchcock Medical Center (DHMC) from 1/2013-12/2014 after initiation of the current proposed guideline for perioperative thrombophylaxis.
Results: Of 254 patients undergoing bariatric surgery at DHMC, none of them (0%) developed VTE and 6 patients (2.6%) developed postoperative bleeding complications within 30

days post-operatively. As compared with the other MBSAQIP sites, our site has a lower incidence of VTE (0% vs 0.1%), but higher incidence of postoperative bleeding (0.5% vs 2.4%) within 3 months after surgery.
Conclusions: Our proposed guideline for perioperative thrombophylaxis for bariatric surgery based on risk stratification appears to be effective to minimize the risk of VTE, but may need to be modified in patients with high bleeding risk.

A5029
DESCRIPTION OF REVISIONAL BARIATRIC SURGERY OPERATIONS PERFORMED IN A DIVERSE POPULATION OF PATIENTS FROM A LARGE INTEGRATED HEALTH CARE SYSTEM

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Purpose: This study was designed to describe the characteristics and weight outcomes for revisional bariatric surgery that converted one bariatric operation to another from a large integrated healthcare system.
Methods: Participants were 349 patients who had a revisional bariatric surgery between 1/1/2004 and 3/31/13. Revisions for these analyses were defined as an initial bariatric operation converted to a second bariatric operation. This was distinct from revisions that were done to remove or revise laparoscopic adjustable gastric bands or to address complications with other initial operations such as laparoscopic sleeve gastrectomy or Roux-en-Y gastric bypass without conversion to another operation. Electronic medical records were abstracted before and after surgery to include patient demographics, body weight, and body mass index (BMI) at the time of surgery. Percent excess weight loss was calculated using weight on the day of surgery and a BMI of 25 kg/m^2 for ideal weight. The demographics and percent excess weight loss were compared between the three main revisional surgeries in the sample using t-tests for continuous variables and chi squared for categorical variables. These three revisional surgeries were: laparoscopic adjustable gastric band removal converted to sleeve gastrectomy, laparoscopic adjustable gastric band removal converted to Roux-en-Y gastric bypass, and sleeve gastrectomy converted to bypass. In addition to these statistical analyses, cases were chart reviewed to determine the reasons for conversion to another procedure.
Results: Of the 349 patients in the sample, 65% (n = 228) had their bands converted to sleeve gastrectomy, 22% (n = 78) had their bands converted to bypass, and 12% (n =43) had their sleeve gastrectomy converted to bypass. Each group had similar post-operative follow-up (39.5 $\pm$ 42.3 months overall) and had similar racial/ethnic backgrounds (45% non-Hispanic white, 29% Hispanic, 22% non-Hispanic black, and 4% other/missing/mixed overall), gender (89% women overall), and age (44.6 $\pm$ 11.4 years overall). Patients who had their band removed and converted to bypass were heavier at the time of surgery (BMI 39.9 $\pm$ 8.6 kg/m2) than patients who had their band converted to sleeve gastrectomy (BMI 36.6 $\pm$ 6.5 kg/m2; p = .002). Patients whose bands were converted to bypass also lost more weight than the band patients who converted to sleeve gastrectomy (46% vs. 34% excess weight loss; p = .004). Patients who had their sleeve gastrectomy converted to bypass had similar weight at the time of surgery to the band to sleeve gastrectomy patients (BMI 37.1 $\pm$ 7.2 kg/m2) but had higher excess weight loss (51% vs. 34%; p = .004). The sleeve to bypass patients had similar weight loss (51%) as the band to bypass patients (46%). When the reasons for conversions were chart reviewed we found that 43% of the cases where sleeve gastrectomy was converted to bypass were done due to

insufficient weight loss, 43% were due to severe reflux and/or hiatal hernia, and 14% were from complications associated with the sleeve gastrectomy operation. Conversions of bands to either sleeve gastrectomy or bypass were done 73% of the time for insufficient weight loss, 7% due to severe reflux, and 20% because of complications with the band device. **Conclusions:** In this large study of revisional bariatric procedures where one bariatric operation was converted to another bariatric operation we found that the majority of these revisions were done for insufficient weight loss. Once patients were revised to another operation, they demonstrated significant excess weight loss varying from 34% to 51% excess weight loss over three years of follow-up. A large proportion of the sleeve gastrectomy revisions to Roux-en-Y gastric bypass were due to severe reflux and/or hiatal hernias (43%).

A5180

Factors Influencing Withdrawal from Preoperative Bariatric Surgery Process

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Background: Many morbidly obese patients who seek consultation for bariatric surgery do not proceed to surgery. However, no research has explored the reasons that lead to patients to withdraw from the process. **Objectives:** This study sought to identify those potential reasons for patient drop-out. The setting was an academic medical center. **Methods:** The charts of patients who had failed to have bariatric surgery or proceed with the preoperative work up within at least 15 months of commencing the process and who had been contacted for standard follow up regarding their decision to withdraw from the process were reviewed. These reasons were compiled into 6 categories – patient lack of motivation, fear, loss of weight without surgery, provider decision due to risk assessment, insurance factors and miscellaneous. **Results:** A total of 450 charts were reviewed. Only 44% of patients stated that a lack of motivation to complete the pre-operative requirements impeded their ability to proceed with bariatric surgery. Fear of surgery and possible complications was the reason for 17.1% of patients. Only 11.4% of patients said that they had lost adequate weight and felt they did not need surgery. Insurance factors such as loss of coverage or not having bariatric coverage resulted in 9.3% of patients not proceeding with surgery. Provider risk assessment, including health literacy levels and ability to comply with post-operative requirements, concluded with 7.8% of patients not proceeding with surgery. Miscellaneous reasons were stated by 1.6% of patients. 8.3% of patients had surgery elsewhere because of relocation or patient preference. **Conclusions:** Withdrawal from the preoperative bariatric surgery process was most influenced by lack of motivation to complete the requirements. Fear, loss of weight without surgery, and insurance were also factors.

Thursday, November 5, 2015

Posters of Distinction (listed in order of presentation) 12:15pm – 1:15pm in Exhibit Hall

A5031

BARIATRIC SURGERY IN MORBIDLY OBESE PATIENTS INFECTED WITH THE HUMAN IMMUNODEFICIENCY VIRUS

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Objective: The aim of this study is to analyse if bariatric procedures are safe for HIV+ patients. **Background:** HIV + patients are at higher risk of obesity and metabolic syndrome due to their

treatment with Highly active antiretroviral treatment (HAART) which reduces their viral load and prolongs survival. Bariatric procedures were historically thought not to be a safe weight loss option for these patients do to the risk of malabsorption.

Methods: In this retrospective study we included HIV positive patients who underwent bariatric surgery from 2002 to 2014 and compared them to a control group of 1125 HIV negative patients operated from December 2010 to November 2014. Data included demographics, operations performed, and outcome metrics. Continuous variables were described by their quartiles and categorical variables were described by counts and percentages. Comparisons of categorical variables between groups were done using the Pearson chi-squared test for nominal variables and the proportional odds likelihood ratio test for ordinal variables. Comparisons of continuous variables between groups was done using the Wilcoxon rank-sum test. A significance level of 5% was used for all testing.

Results: Fourteen HIV+ patients were identified, of which 79% (n=11) had undergone laparoscopic Roux-en-Y gastric bypass (LRYGB) and 21% (n=3) a laparoscopic sleeve gastrectomy (LSG). Age at original procedure was significantly different between groups, 49 years of age for HIV- patients and 38 for HIV+ (p<0.001). Also, mean preoperative BMI was significantly higher in HIV+ patients, 50 kg/m^2 compared to 42 kg/m^2 in HIV- patients (p<0.001). No significant difference was found in other comorbidities including diabetes (p=0.72), Dyslipidemia (p=0.94) or Hypertension (p=0.31). HIV+ patients were however, significantly more prone in having a to have a history of depression (p=0.013). HIV + patients stayed on average of one day more in hospital after their surgery than HIV- patients (p=0.037) but their risk for readmission demenstrated little varience (p=0.73). When post surgical complications were analysed HIV+ had a higher risk of vomiting and nausea (p=0.03,p=0.006), but none of the other post surgical complication including obstruction, gastric ulcers, marginal ulcers, diarrhea, abscess, GERD, pneumonia, dehydration or incisional hernia, were significantly different.

Conclusions: Bariatric procedures, both laparoscopic Roux-en-Y gastric bypass and laparoscopic sleeve gastrectomy, appear to be a safe and effective treatment modality in HIV patients affected by obesity.

A5033

LONGITUDINAL ASSESSMENT OF SUBSTANCE USE AND MISUSE AMONG ADULTS FOLLOWING ROUX-EN Y GASTRIC BYPASS AND LAPAROSCOPIC ADJUSTABLE GASTRIC BANDING: 7 YEAR FOLLOW-UP

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University of Pittsburgh Medical Center[3] Weill Cornell Medical College[4] Neuropsychiatric Research Institute[5] University of Washington[6] Duquesne University School of Nursing[7] Oregon Health Sciences University[8] Brody School of Medicine, East Carolina[9] Oregon Health Sciences Univ, Portland[10] NIDDK[11]

Background: Prior work indicates an increase in alcohol misuse following Roux-en-Y gastric bypass (RYGB), but not non-adjustable or adjustable gastric banding. In addition, pharmacokinetic studies provide evidence that RYGB affects alcohol absorption and metabolism. However, longitudinal data collection with long-term follow-up of alcohol or other substance use following these procedures is lacking.

Methods: The Longitudinal Assessment of Bariatric Surgery-2 is a 10-center observational study of adults who underwent bariatric surgery

(n=2458). Pre-surgery and annually (years 1-5, and year 7) post-surgery, past year alcohol use was assessed with the Alcohol Use Disorders Identification Test (AUDIT); past year recreational drug use (i.e., "other than as prescribed by a physician"), and counseling or hospitalization for alcohol or non-prescribed drug use were assessed with study-specific forms. Change in prevalence over time among participants who underwent RYGB or laparoscopic adjustable gastric banding (LAGB) with baseline and follow-up data (2003 of 2348; 85%) was tested with generalized linear mixed models, controlling for baseline factors that were related to missing follow-up data (i.e. age, site and baseline smoking status). Age at each time point was also entered in models to control for the effect of aging. Both linear and quadratic trends were considered.
Results: Participants who underwent RYGB (n=1481) were 80% female and 85% white, with median body mass index (BMI) 47 kg/m² and median age 46 years; those who underwent LAGB (n=522) were 76% female, 89% white, with median BMI 43 kg/m² and median age 48 years. Modeled prevalence rates by time point, stratified by surgical procedure, are reported in table 1. Following both procedures, there were significant increases over time in the proportion of participants reporting any alcohol consumption and regular alcohol consumption (i.e., at least twice/week); more than double as many participants consumed alcohol regularly by year 7 vs. baseline. Following RYGB, but not LAGB, there were also significant increases in the proportion of participants reporting alcohol problems, recreational drug use, and related treatment. While recreational drug use and treatment for alcohol and drug abuse remained uncommon throughout follow-up (<5% and <2%, respectively), by year 3 approximately one in ten participants reported alcohol problems in the past year, a 2-fold increase from baseline.
Conclusion: In this observational study of adults with severe obesity who underwent bariatric surgery, alcohol use increased over time following RYGB and LAGB. There was also an increase in alcohol problems and non-prescribed drug use, and related treatment, following RYGB only, such that more than double as many participants reported alcohol problems in years 3-7 compared to baseline. These data, in conjunction with previous pharmacokinetic studies, suggest that patients considering RYGB or who have had RYGB should be educated on the potential risk of developing alcohol problems, and screened for alcohol problems as part of regular post-operative clinical follow up**.**

A5035

WEIGHT LOSS AFTER REVISION FROM LAPAROSCOPIC ROUX EN- Y GASTRIC BYPASS TO DUODENAL SWITCH.

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Background: Morbid obesity is chronic insidious disease which leads to range of diseases and reduces the health related quality of life. Bariatric Surgery has been found to be a reliable treatment for morbid obesity, giving better long term weight reduction. One of the widely used bariatric surgeries is Roux en-Y Gastric Bypass (RYGB) which yields a very satisfactory result, however in some patients it may fails to give adequate result. We performed the duodenal switch (DS) in patients for whom Roux-en-Y gastric bypass have failed .The purpose of this study was to evaluate the outcomes of the patient who had failed RYGB and were converted to DS, in terms of their weight loss.
Methods: We evaluated 20 patients who underwent DS (6 underwent regular DS and 14 underwent Loop DS) after their failed RYGB. All surgeries were performed by single surgeon at single institute. We retrospectively reviewed the data that included age, BMI, estimated blood loss and length of stay. Change in BMI and weight loss between pre-op and post-op follow up were evaluated.
Results: Of 20, 15 patients are 1 year post-operative mark. 1 patient lost to follow up. The mean age and BMI before conversion was 51.55 yrs and 45.644± 10.007 kg/m2 respectively. The mean weight was 281.79 ± 69.76 lbs. Mean

estimated blood loss during the surgery was 39.64 cc and length of stay was 4.16 days. At 3 months, change in BMI was 6.33kg/m² which correlate with 34.50 % of excess BMI lost (EBMIL) and 15.16% of total body weight loss (TBWL). At 6 months, change in BMI was 43.45kg/m², with EBMIL of 43.45% which correlate with 19% TBWL. At 1 year, change in BMI was 12.64 kg/m², with EBMIL of 62.10% which correlate with 27% of TBWL. For the patients with greater than 1 year follow up (range= 12.7 to 25.9 months), EBMIL reached a mean of 69.7% and TBWL of 29.20%.
Conclusion: Laparoscopic revision from Gastric Bypass to Duodenal switch shows effective weight loss results in short term follow up of 1 year. The risk of dumping syndrome is comparatively low as compared to gastric bypass as DS preserves the pylorus when compared to GBP. Future analysis is needed on long term follow up, evaluation of quality of life and risk of micronutrient deficiency.

A5036
LAPAROSCOPIC DUODENAL SWITCH: ONE OR TWO LOOPS?
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Background: Malabsortive bariatric procedures are not common practice worldwide. Results and safety of Duodenal Switch (DS) have been widely published. From 2007 SADI-S has evolved as a simplified DS with comparable results from preliminary series. This paper compares both procedures from two high volume and experienced Centers.
Methods: Retrospective review from prospective databases was done from two different Centres, one specialized on SADI-S and the other on DS. SADI-S was constructed with a 54F bougie for the Sleeve gastrectomy and with a common channel of 250cm. DS was constructed over a 36F with a 200cm Roux limb and 100cm common channel. Patients with primary procedures and comparable in terms of age, BMI and comorbidities were included for analysis. We evaluated weight loss, early and late complications profile, comorbidities evolution and biochemical profile.
Results: 176 DS and 160 SADI-S were included. Both groups were comparable at baseline parameters. Overall morbidity rate was 5% in the SADI-S and 11% in the DS group (p=0.047) and reoperation rate was 3.1% vs 6% (p=0.265). There was no mortality at any group. Weight loss was greater at the SADI-S group from 18 to 72 months of follow up, being 93.06% EBMIL vs. 73.89% at 5 years of follow-up. SADIS-S was also less likely to have failure to weight loss at follow-up. Comorbidities resolution was similar in both procedures, with no significant differences. During follow-up 7 patients in the SADI-S group needed reoperation due to protein malnutrition, none at the DS group.
Conclusions: This study has a strong limitation due to the different channel in both groups (250cm vs 300cm). Though this difference, SADIS-S seems to be superior to DS in terms of weight loss, but it takes more risk of malnutrition. The simpler technique of the SADI-S shows less early complications and reoperations.

A5038
LAPAROSCOPIC REMOVAL OF ERODED GASTRIC BAND
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Background : Laparoscopic placement of gastric band after a gastric bypass has been used to help patients achieve additional weight loss after a gastric bypass. However, certain complications include infection, band erosion, and migration might be expected to occur similar to primary placement. Band erosions may occur in up to two percent of patients and can be treated by endoscopic or laparoscopic removal of the implant.

Methods : We present a fifty nine year old female with a history of laparoscopic placement of gastric band after a gastric bypass who presented with worsening epigastric and chest pain, nausea and inability to tolerate solids over the past several months. All fluid in her band was removed, her upper gastrointestinal series was normal, and an esophagoduodenoscopy demonstrated normal band impression on the gastric pouch. A computed tomography of her abdomen revealed free air around her band; erosion into the remnant stomach was suspected.
Results : This video illustrates the laparoscopic approach for removing an eroded gastric band into the remnant stomach. The key to this is to approach a difficult field in a safe manner.
Conclusion : Erosion of gastric band can occur into neighboring structures as demonstrated in this case. Laparoscopic removal of an eroded gastric band can be technically challenging due to adhesions and inflammation, but can be performed in a safe manner. Wide drainage with external drains and use of a gastrostomy tube should be used.

A5039

DISCREPANCIES IN THE RELATIONSHIP OF BMI AND TRADITIONAL CARDIOVASCULAR RISK FACTORS IN SUBJECTS WITH DIFFERENT LEVELS OF OBESITY

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Introduction: Obesity is related to increased cardiovascular risk. This relationship is based on the negative effects of body weight on several traditional risk factors. It remains unknown whether this association also holds at higher levels of obesity. The purpose of this study was to investigate this relation in a cohort with wide ranges of BMI.
Methods: Lean subjects participating in observational studies in our out-patient clinic and obese subjects scheduled for bariatric surgery were included. Baseline characteristics and laboratory values were collected according to a standard protocol. Both, the group of lean subjects (i.e. BMI < 30) and the group of obese subjects (i.e. BMI ≥ 30) were categorized in quintiles according to BMI. The relation between BMI and cardiovascular risk factors were analyzed using ANOVA.
Results: The cohort consisted of 953 subjects (591 women, 362 men; mean age±SD, 49.9±14.8 years). The lean group consisted of 377 subjects, with a mean BMI of 25.0±2.81 kg/m^2. 576 Subjects were included in the obese group, with a mean BMI of 43.8±7.58 kg/m^2. The obese group included significantly more women, more T2DM, more HT and more smokers than the lean group. Mean values of LDLC, apolipoprotein B, systolic en diastolic blood pressure were significantly higher in the obese group and HDLC was significantly lower in the obese group. No significant differences were seen in the mean value of triglycerides and total cholesterol. Diastolic blood pressure, apolipoprotein B and LDLC showed a significant dose–response relationship with increasing BMI in the lean group ($p=0.002$, $p=0.005$ and $p=0.034$, respectively), but this association was not observed in the obese group. In the lean group, triglycerides increased with increasing BMI ($p=0.001$) but decreased in the obese group ($p=0.009$). HDLC decreased with higher BMI in both groups, but the association was weaker in the obese. Inflammatory markers like CRP, leukocyte count and C3 increased with increasing BMI in the obese group ($p<0.001$ for all markers). In the lean subjects this association with BMI was also observed for C3 ($p<0.001$), but not for CRP and leukocytes.
Discussion: Lipid associated risk factors showed a significant dose-response relationship with increasing BMI especially in lean subjects, but this association was weaker in obese subjects. The association with inflammatory markers and BMI was strongest in obese subjects. The relationship between cardiovascular risk factors and BMI is lost in higher levels of obesity. In

that case, inflammation seems to be clinically more prevalent.

A5040

PRIMARY REPAIR OF VENTRAL HERNIA DURING INITIAL LAPAROSCOPIC BARIATRIC SURGERY RESULTS IN VERY LOW LONG TERM RECURRENCE RATES

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Background: The presence of a ventral hernia (POVH) presents a challenge during laparoscopic bariatric surgery and particularly during Roux-en-Y gastric bypass (LRYGB). The incidence of ventral hernias during laparoscopic bariatric surgery (BS) is reported to be around 5% with no consensus regarding optimal treatment. The extent of the fascial defect warrants consideration of either primary repair, synthetic or biologic mesh repair or delayed repair. Our study aim was to evaluate the outcomes of laparoscopic primary sutured repair of POVH in patients with a single abdominal wall fascial defect undergoing bariatric surgery.
Methods: We performed a retrospective cohort study from a single institution using our prospectively maintained research database. Records of 2763 patients undergoing LRYGB or laparoscopic sleeve gastrectomy (LSG) with a concomitant ventral or umbilical hernia repair were reviewed. All patients had defects in which direct fascial approximation could be achieved with desufflation of the abdomen. Hernias were repaired primarily through a small skin incision overlying the defect with trans-fascial interrupted permanent sutures using a Carter-Thomason suture passer device under laparoscopic guidance. Exclusion criteria included lap converted to open surgeries, redo surgery, hernias initially repaired with mesh, and patients with early post op complications requiring an open re-operation. Primary endpoint was the recurrence rate of the ventral hernia. Secondary endpoints included time to recurrence, EBL at recurrence, operative time, EBL, weight loss, and follow-up. Patient characteristics include age, gender, weight /BMI, and comorbidities (diabetes mellitus, gastroesophageal reflux disorder , obstructive sleep apnea) were also evaluated. Data are presented as mean and median. Statistical analysis was performed with Student's t-test.
Results: A total of 2763 patients underwent consecutive laparoscopic bariatric surgery (LRYGB or LSG). Of these, 144 underwent concomitant laparoscopic repair of a ventral hernia, an incidence of 5.2% in our patient population. After excluding re-operative bariatric surgeries, hernias initially repaired with mesh, and patients with early post-operative complications requiring open re-operations, 2598 patients remained. 15 patients had a recurrence of their hernia. Median overall follow up was 32 months, with 92% of the patients having at least 12 months follow up. 4 of these recurrences were excluded. 1 had a biologic mesh used in the initial repair, 1 was initially a redo RYGBP, and 2 required early open re-operations due to leaks. There were no significant differences between patients with POVH recurrence and those without when considering preoperative factors, types of bariatric surgery, operative factors or postoperative adverse events. [Table #1] Surgical site infections at the hernia site occurred in 9/141 patients (6.4%), and only 1 of these was in the recurrence group. Median time to recurrence was 14 months (shortest 1 day, longest 30 months). 3 patients recurred <30d post-op and 2 of those 3 had another recurrence at a later time. Mean BMI and %EWL at recurrence was 36.5% and 22.9%, respectively.
Conclusions: Ventral hernias range from single, simple defects to loss of abdominal domain. This range in POVH complexity has made it difficult to understand recurrence rates and therefore to create clear guidelines for management at the time of bariatric surgery. Mesh has been shown to improve recurrence rates with laparoscopic and open POVH repair but its use with concomitant bariatric surgical procedures increases the technical complexity and cost as well as creating the risk of mesh and surgical site infections. We collected data on

92% of patients with at least a 12 month follow up and a mean of 32 months undergoing concomitant primary ventral hernia repair. A primary sutured repair resulted in few complications and a very low recurrence rate of 7.8%. Our study suggests that when fascial approximation can be achieved with primary sutured repair of POVH, this results in a low recurrence rate and should be the first option in bariatric surgical procedures.

A5041

BONE MINERAL DENSITY IN WOMEN 12 MONTHS AFTER BARIATRIC SURGERY: COMPARISON BETWEEN LAPAROSCOPIC SLEEVE GASTRECTOMY, GASTRIC BYPASS AND SLEEVE GASTRECTOMY WITH JEJUNAL BYPASS.

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Background: Bariatric surgery (BS) generates high nutritional disorders caused by a decreased absorption of nutrients. One of them is an altered bone mineral density (BMD), which is affected by many factors such as weight loss secondary to either surgical or medical treatment. The goal of this study is to compare BMD in obese women at one year after Roux-en-Y Gastric Bypass (RYGB), Sleeve Gastrectomy (SG) or Sleeve Gastrectomy with Jejunal Bypass (SGJB) and to evaluate BMD association with calcium and vitamin D and/or multivitamins supplements and percentage of excess weight loss (%EWL). **Methods:** Analytic observational retrospective study. Records of 90 pre and postmenopausal women, who underwent bariatric surgery between 2009 and 2013, were reviewed. 30 patients for each technique were included. The following variables were registered pre and post-surgically (at 12 months): %EWL and use of calcium-vitamin D supplements. BMD at 12 months was evaluated according to ISCD criteria. For continuous variables Mann Withney or t-student test were used. For the primary endpoint presence or absence of BMD in different techniques, chi-square test was used. To analyze relation between BMD and the other variables, models of ordinal logistic regression were constructed, with a 95% of confidence. **Results:** Patients in RYGB group were significantly older than the other two groups ($p<0.05$) and SG group presented a lower weight and BMI than the others ($p<0.05$). Calcium intake was similar between the three groups. Normal BMD in RYGB, SG and SGJB are 75.9%, 96.7% and 86.7% respectively. The difference is significant between SG and RYGB. Older age and lower preoperative weight are strongly associated with altered BMD diagnosis, with no relation to calcium and/or vitamin D intake. At 12 months, there are no significant relation between weight loss and BMD. Regarding surgical techniques, SG has significantly lower risk of developing bone mineral disease when compared with RYGB and SGJB, which is consistent in every built model. **Conclusion:** SG compared with RYGB and SGJB has significant lower risk of BMD disease at 12 months after surgery. Explanation for these results are yet to be dilucidated with further studies, because of heterogeneity between groups.

A5042

IS THERE ANY RELEVANT ADVANTAGE USING A RING AMONG RYGBP PATIENTS?

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Introduction: Roux-Y Gastric Bypass (RYGBP) is an effective tool for long-term weight loss success. However, Roux-en-Y Gastric Bypass patients generally suffer unexpected difficulties with food intake because of resultant physiological changes from the surgery. In some patients, a gastric containment ring is placed to avoid dilated gastrojejunostomy and, theoretically, reduce chances of weight regain. Currently, much of bariatric surgery is done without this ring due to evidence of its

obstructing protein intake, critical to post-operative (post-op) nutritional recovery and the decrease of vomiting.
Objective: Compare caloric intake, considering the quantity of protein and other macronutrients ingested, along with any occurrence of vomiting in two groups of operated patients, one with and the other without a containment ring.
Methods: This retrospective study analyzed medical records collecting data from two groups of Roux-en-Y Bypass patients, one with and the other without the placement of the containment ring around the gastric pouch. Analyses of food consumption were based on four randomly chosen 24-hour post-op recall records during consultations with nutritionists. Percentage of excess weight loss data was collected based on the most recent weight in relation to the collection period. The occurrence of vomiting was recorded from the first post-op consultation until the most recent. All patients had more than 2 yeas of surgery. Exclusion criterias were: pregnant patients, patients with dental problems e/or any sign of infection. **Results:** 100 medical records were analyzed, 50 of each group mentioned. Mean time since surgery for the ring patients was 130.08 ± 3.44 months, while for those without the ring it was 81.21 ± 3.72 months. In the ring group, there was a significant increase in the average percentage of carbohydrates and lipids consumption along with occurrence of vomiting and a decrease in the average percentage of protein and fiber ingested. No statistical differences in excess weight loss were found between the two groups. Patients among the group without the ring consumed higher quantity of protein per day (p=0,0244). We found in both groups that there was a positive correlation between protein consumpition (per Kg of body weight) and excess weight loss (with ring: r=0,30459; p=0,0294 and without the ring r-=0,52087;p<0,001) highlying the importance of adequate protein eating consumption among bariatric population.
Conclusion: Placement of the ring presents no relevant advantage for weight loss. It increases the incidence of vomiting and also hinders the intake of a balanced diet, while reducing the amount of fiber and protein which affects the development of healthy eating habits of among patients.

A5026

PREDICTING T2DM REMISSION AFTER LAPAROSCOPIC SLEEVE GASTRECTOMY: A COMPARISON OF Dia Rem and ABCD SCORING SYSTEM

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Background: Laparoscopic sleeve gastrectomy (LSG) is becoming a novel treatment for type 2 diabetes mellitus (T2DM). DiaRem and ABCD scoring systems have been developed from gastric bypass surgery for the selection of T2DM patients who are eligible for metabolic surgery. This study compares these 2 scoring systems with regards of remission of T2DM after LSG
Methods: Outcomes of 100 (51women and 49 male) patients who underwent LSG for the treatment of T2DM with one year follow-up were assessed. The DiaRem score is composed of age, HbA1c, medication and insulin usage. The ABCD score is composed of the age, BMI, C-peptide levels and duration of T2DM (years). The remission of T2DM after LSG was evaluated using both scoring system.
Results: At one year after surgery, the weight loss was 26.5% and the mean BMI decreased from 38.7 to 28.8 Kg/m^2. The mean HbA1c decreased from 8.2 to 6.1%. 53(53.0%) patients had complete remission (HbA1c < 6.0%), 23(23.0%) patients had partial remission (HbA1c < 6.5%) and 11(11.0%) patients improved (HbA1c < 7%). Both groups can predict the success of metabolic surgery but ABCD score has a better differentiating prediction than DiaRem score at all categories (Table).
Conclusions: Both DiaRem and ABCD score grading system can predict the success of T2DM

remission after LSG but ABCD score has a better differentiating power.

A5044

Revisional bariatric surgery: conversion from LSG to RYGB with results after 3 years of follow up

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Background: The need of revisional interventions has become a topic of great relevance in bariatric surgery. The frequency of these procedures varies among clinical series but it is estimated in 20% incidence, and their indications go from simple weight regain (WR) to severe surgery-derived complications. In this study we report our experience in laparoscopic sleeve gastrectomy (LSG) that lead to a revisional laparoscopic Roux-en-Y gastric bypass (LRYGB).
Methods: Restrospective analysis of our bariatric surgery database. Patients submitted to laparoscopic sleeve gastrectomies (LSG) that afterwards were reoperated with a LRYGB between 2005 and 2015 were followed. Demographics, anthropometrics, symptoms, bariatric surgery related complications, comorbidities and percentage of excess body weight loss (%EWL) were retrieved.
Results: 50 patients were identified; mean age 39±8.3, 42 (84%) were women. Median BMI previous to LSG was 36.5 (28.9-60.2), median BMI previous to revisional LRYGB was 33.8 (17.6-47). Mean interval between surgeries was 46.7±23 months. Revisional bariatric surgery indications and frequencies were as follows: WR 28 (56%), GERD 11 (22%), sleeve stenosis 6 (12%) and GERD+WR 5 (10%). Among those operated due to WR, mean %EWL at 1, 6, 12, 24 and 36 months after revisional LRGYB was 26±17, 49±20, 62±31, 65±36, 50±43, respectively. Considering initial weight (previous to first surgery), at 36 months cumulative %EWL was 62±32. In patients with GERD, 63.6% resolved symptoms, 27.3% improved and 9.1% remained stable. All patients with gastric stenosis resolved symptoms. There were 4% early complications (1 gastrojejunal stenosis resolved by balloon dilation and 1 pseudomembranous colitis) and there were no late complications.
Conclusions: Revisional bariatric surgery is a safe and feasible procedure in this series. Among patients reoperated due to weight regain, second surgery produces progressive %EWL up to 65%, although weight regain is observed at 3 years, therefore multidisciplinary management is of utmost importance. In patients reoperated for bariatric surgery derived complications, LRYGB achieved symptoms improvement or resolution in almost all patients, except for 9.1% of GERD patients who maintained stable.

A5045

GALLSTONES IN OBESE PATIENTS UNDERGOING BARIATRIC SURGERY: STUDY AND POSTOPERATIVE MONITORING

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Introduction: Chile is one of the countries with higher prevalence of gallstone disease in the world. Among the risk factors for gallstones are female sex, age and obesity. These factors, associated with rapid weight loss, are characteristic of obese patients undergoing bariatric surgery .It has been observed that patients undergoing these surgeries have a higher incidence of cholelithiasis in the first 12 months postoperatively.
Objectives: To characterize the prevalence of gallstone disease in obese patients undergoing bariatric surgery, and analyze the occurrence of this disease during the postoperative follow-up.
Methods: Retrospective cohort study including 221 patients undergoing surgery in our center, with follow-up to 5 years. Review of clinical records and telephone survey was conducted. The statistical analyzes were performed using STATA 11. Significance was considered with $p < 0.05$. Results: 18.09% of patients had a history

of previous cholecystectomy. A 13.57% of patients had preoperative cholelithiasis. Monitoring was performed in 151 patients. In ultrasound at 1 year, 6.6% had cholelithiasis. At follow-up three years later 4.63% of the patients required a cholecystectomy. The EWL at 1 year was 83.84%, and 88.42% at 3 years. There were no significant differences in the occurrence of cholelithiasis with the type of surgery or weight loss.

Conclusions: There is a high prevalence of cholelithiasis in the population undergoing bariatric surgery. The emergence of this disease in the first year was lower than that reported in the literature. There were no differences in incidence between the amount of weight loss or the surgery performed.

A5017

IMPROVEMENTS IN PSORIASIS AND PSORIATIC ARTHRITIS WITH SURGICAL WEIGHT LOSS

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Introduction: Several studies have shown that obesity is more common among patients with psoriasis and psoriatic arthritis, and this correlation may be related to the systemic inflammation associated with obesity. Although bariatric surgery has been shown to improve several obesity-related comorbidities, the effects of surgical weight loss on psoriasis and psoriatic arthritis have not been adequately studied. Our objective was to investigate the effects of weight loss from bariatric surgery on psoriasis and psoriatic arthritis.

Methods: A retrospective database of 9,073 bariatric surgeries performed at a single center between 2002 and 2013 was queried. Patients with a diagnosis of psoriasis prior to bariatric surgery were identified. Preoperative demographic, anthropometric, and comorbidity data were collected. Patients were contacted about their history of psoriasis, changes in symptoms after surgery, diagnosis of psoriatic arthritis, and treatment modalities for psoriasis and psoriatic arthritis pre- and postoperatively. The primary outcome was the percentage of patients who reported improvement in psoriasis after surgery. Secondary analyses were performed to define factors associated with improvement in psoriasis.

Results: We identified 128 patients with a preoperative diagnosis of psoriasis. Seventy-four (58%) patients completed the study. Baseline patient characteristics are listed in Table 1. The mean time from surgery was 6.2 years, with a mean excess weight loss (EWL) of 46.5%. At the time of contact, forty-one (55%) patients reported improvement in their psoriasis, 24.3% reported improvement with subsequent relapse, 6.8% had no change, and 12.6% reported that their psoriasis progressively worsened. Sixteen (22%) patients also had a preoperative diagnosis of psoriatic arthritis; 62.5% reported improvement in their psoriatic arthritis, whereas 19% had no change and 19% worsened. In secondary analyses, lower preoperative BMI ($43.7 kg/m^2$ vs. $48.4 kg/m^2$, p=0.004) was found to be independently associated with postoperative improvement in psoriasis. Patients with severe psoriasis at the time of surgery and significant postoperative improvement, excluding those whose improvement may have been due to escalation in medication class, demonstrated greater weight loss (101.4 lb vs. 66.0 lb, p=0.025) and EWL (63.7% vs. 44.7% EWL, p=0.028). Similarly, improvement in psoriatic arthritis was associated with greater EWL, but this did not reach statistical significance (51.4 vs. 48.3, p=0.815).

Conclusion: Although the natural history of psoriasis and psoriatic arthritis is typically chronic, a majority of patients experience improvement after bariatric surgery. Based on our results, there is an association between excess weight loss and symptomatic improvement in severe cases of psoriasis. Factors such as lower preoperative BMI may be used to identify those patients with a greater likelihood of remission. Additionally, ours is the first study to show an improvement in psoriatic arthritis after bariatric surgery and a possible association between surgical EWL and improvement in psoriatic arthritis. Larger prospective studies are needed to further define

the true effect of surgical weight loss on psoriasis and psoriatic arthritis.

Posters on Display in Exhibit Hall
November 4-6, 2015

TOPIC: ADJUSTABLE GASTRIC BANDING

A5046

ANTERIOR VERSUS GREATER CURVE TECHNIQUE OF GASTRIC BANDING WITH EXTENDED IMBRICATION

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Laparoscopic adjustable gastric banding (LAGB) has been performed in the United States with varying degrees of success since it was approved by the US Food and Drug Administration in 2001. There have since been distinct modifications in the design of the band and in surgical techniques to reduce post-operative problems and improve outcomes. Despite efficacy studies demonstrating approximately 50% excess weight loss (%EWL) for LAGB, there remains considerable disagreement over its benefit versus other currently performed weight loss operations. Recent small scale reports have suggested that the addition of an extended imbrication to the already effective LAGB procedure could produce even better weight loss outcomes without contributing additional risk. We recently reported a combined series of two groups of patients who underwent LAGB using the Lap-Band™ system with the addition of an extended imbrication below the band. A different technique was used for each group. The results indicated significant improvement in Body Mass Index (BMI), %EWL, and % Total Body Weight Loss (%TBWL) in the first post-operative year for the combined groups compared to a convenience control group who underwent traditional placement of the Lap-Band™. The present study aimed to compare outcomes for the two different extended imbrication techniques to see if one offers improved outcomes over the other.

Method: A retrospective cohort analysis of 1,121 patients from two surgical practices was conducted. Patients in Group 1 (n=127) underwent pars flaccida technique with an anterior extended imbrication incorporating serosal sutures from the lesser curvature to the greater curvature anterior to the insertion of the greater curvature vessels and omentum. Group 1 was compared to Group 2 (n=584) who underwent standard pars flaccida technique by the same surgeon. Group 3 (n=264) underwent a pars flaccida technique with a takedown of the greater curvature vessels from the band site to opposite the incisura angularis, incorporating serosal sutures from the anterior stomach to the posterior stomach incorporating the greater curvature. Group 3 was compared to Group 4 (n=146) who underwent standard pars flaccida technique by the same surgeon. Both Group 1 and Group 3 extended imbrication techniques used a sizing device (calibration tube) to avoid obstruction. Mean baseline BMI was as follows: Group 1 = 43.51 kg/m^2, Group 2 = 43.55 kg/m^2, Group 3 = 45.24 kg/m^2, Group 4 = 44.20 kg/m^2. BMI, %EWL, and %TBWL were compared at baseline, 3 (M3), 6 (M6), 9 (M9), and 12 (M12) months for Groups 1 and 2, and for Groups 3 and 4. Data were analyzed using a mixed model repeated measures ANOVA.

Results: Change in BMI was greater for Group 3 compared to Group 4 (F=12.84, p=.0004) at M3 (-5.1 versus -4.2), M6 (-7.2 versus -6.0), M9 (-8.6 versus -7.5) and M12 (-9.5 versus -8.5). %EWL was greater for Group 3 compared to Group 4 (F=4.30, p=.0384) at M3 (28.1 versus -23.9) and M6 (39.4 versus 34.2). %TBWL was greater for Group 3 compared to Group 4 (F=9.88, p=.0017) at M3 (-11.3 versus –9.5),

M6 (-15.8 versus -13.5), M9 (-18.9 versus -17.2) and M12 (-21.0 versus -19.3). Group 1 and Group 2 were not significantly different for change in BMI (F=2.60, p=.1073), %EWL (F=2.62, p=.1060), or %TBWL (F=2.98, p=.0843). There were no significant differences in complication rates. There were two explants in the imbrications groups. One was due to infection, presumed to be secondary to microperforation. The other was due to pain, presumed to be secondary to erosion. There were no mortalities.
Conclusions: The greater curvature [TG1] extended imbrication technique appears to result in improved changes in BMI, %EWL, and %TBWL during the first year compared to the traditional placement of the Lap-Band™ without adding an increase in explantation or complication rate. This suggests that the extension of the greater curvature imbrications to a standard pars flaccida approach improves outcomes in the first year without compromising the safety of this procedure. [TG1]So to be clear the anterior approach did not have as good of weight loss as the greater curve technique? I just want to be sure bc that will mean Dr. Smith's approach is more effective than Dr. Snow's. Which is fine but Smith takes down the greater curve which increases costs? I am just making sure w have it straight bc that will effect the cost per procedure.

A5047

GASTRIC BAND REMOVAL FOR DEVICE-RELATED COMPLICATIONS MAY BE ASSOCIATED WITH SIGNIFICANT MORBIDITY

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Intro: Laparoscopic adjustable gastric banding is well-known for its safety profile. However, band removal, especially for a device-related complication, may be more complex due to the scar tissue created by the band. The objective of this study is to review perioperative outcomes of patients requiring band removal for device-related complications.
Methods: A retrospective review was conducted of all band removals over a 13 year period (2001-2014) for a device-related complication (e.g. slippage, erosion, gastric necrosis). Bands removed for weight loss failure or intolerance were excluded from this review. Perioperative complication, readmission and reoperation/re-intervention was defined according to the Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program standards.
Results: A total of 104 patients required band removal for a device-related complication. In the same time frame 7633 bands were implanted. The average age at band removal was 44 years old and the average BMI was 35.6. The most common reason was slip (42%) and erosion (28%). The 30-day complication rate from the removal was 26% (27/104) - most commonly pneumonia and perigastric abscess. The 30-day readmission rate and reoperation/re-intervention rate were 15% and 10%, respectively. There was one mortality (1%) from septic shock secondary to erosion. There were no statistically significant differences in age ($p = 0.452$) or BMI ($p = 0.523$) between those who had a 30-daycomplication and those who did not.
Conclusions: Band-related complications are rare. Band removal for device-related complication may be associated with significant morbidity.

A5048

FAIR WEIGHT LOSS AFTER GASTRIC REBANDING FOR SLIPPAGE

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Background: Laparoscopic adjustable gastric banding (LAGB) is one of the recognized

bariatric surgery procedures performed in the United States. LAGB results in safe and satisfactory weight loss, but it is often complicated with slippage, a complication requiring rebanding. There is a paucity of studies and no uniform consensus on weight loss after rebanding. The purpose of this study is to assess the effects of revision /rebanding for slippage after LAGB.
Methods: This is a historical cohort study of 866 patients who underwent LAGB (techniques perigastric 83, pars flaccida 781) from 2001 to 2013. Rebanding was performed in 103 (11.8%) patients. Primary outcome of interest was percent excess weight loss (% EWL) which was categorized as good (>50% EWL), fair (>25-50% EWL) and poor (<25%EWL) after rebanding. Twenty-four patients were excluded from analysis, because their bands were removed. Of the remaining 79 patients, 76 were matched with 76 controls without slippage using propensity matching. Statistical analysis: A paired t-test was used to compare weights. A Chi-square test was used to compare EWL rate between groups. Multivariate logistic regression was performed to determine predictive probability for propensity matching of slippage.
Results: The majority of patients were female (82.9%). Mean age was 44 (±11.3) years, mean preoperative BMI 48 kg/m^2(± 8.0) and mean preoperative Excess weight of 171 lb. (±52.0), median follow up after LAGB was 63.63 months (range 0.0-162.4) and median time to slippage of 54 month (range 0.0-162) During follow-up, 103 patients (12%) underwent reoperation for slippage (31.3% perigastric /9.9% pars flaccida). All rebandings were performed laparoscopically with 60 % repositioned, 16%.replaced and 23 % removed with 4 (3.8%) converted to another bariatric procedure. Four patients (3.8%) had recurrent slippage. There was a significant difference between initial weight and weight at rebanding. The weight loss is sustained after rebanding. There was a significantly higher fair weight loss in patients with slippage compared to matching controls (60% vs 40%), P=0.0006) at first year. (Fig.1).
Conclusion: Rebanding of the LAGB is safe and feasible with satisfactory and sustainable weight loss. Recurrence after rebanding is rare.

A5049

ALCOHOL USED DISORDER AFFECT POOR WEIGHT LOSS AND INCREASE ADVERSE EFFECTS FOLLOWING LAPAROSCOPIC GASTRIC BANDING

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Introduction: Obese people seeking bariatric surgery may have higher prevalence of lifetime substance abuse disorders including alcohol and drugs. The effect of bariatric surgery has not proven yet on alcohol metabolism and incidence of alcohol used disorder (AUD). Laparoscopic gastric banding surgery (LAGB) has no anatomical alteration for metabolic change unlike other bariatric surgeries. LAGB cannot restrict mechanically drinking alcohol even after proper adjustment of the filling volume. Patients are also easily exposed to the environment in which socially able to drink alcohol in Korea. The theory of this study is that AUD produce delayed weight loss and increase risk of band related side effects.
Method: All data were recorded prospectively by patients' hospital visits and regular phone interview who undertook the same day LAGB using LAP® APs (Allergan, USA) at Seoul 365mc Hospital, Korea for 5 years. Patients was limited to response alcohol consumption survey who was able to follow up more than 1 year. AUD was classified by DSM-5 Criteria for alcohol abuse/dependence. Patients were allocated into non-AUD group who had less than one presence of AUD symptoms and AUD group including all severity classifications.
Result: Total 582 patients were enrolled with the non-AUD (n=436) and AUD (n=146). 47.1% of patients (n=274) were not drinking. Average age, weight, and BMI was 31.6 years-old, 97.6kg, and 35.4 kg/m^2, respectively. Alcohol consumption was starting at 8.4 months in the non-AUD and 3.7 months in the AUD

(p<0.001). %EWL at 1, 3, 6, 9, 12, 16, 24, 30, 36, 42, and 48 months was 21.7, 33.8, 48.6, 58.7, 63.2, 69.4, 73.2, 73.9, 76.4, 76, and 76.7 in the non-AUD, and 19.3, 24.5, 32.5, 38, 36, 40, 16.8, 32.4, 30.6, 51.4, and 43.7 in the AUD, respectively (P<0.001). Achievements of %30EWL at 3 month and %100EWL were significantly higher in the non-AUD (48.6% vs. 32.9%, and 32.8% vs. 13.7%, P<0.001, respectively). The developed time and filling volume of non-anatomical outlet stenosis, anatomical stenosis and pouch or esophageal dilatation were not significantly different between the groups. Incidence of non-anatomical outlet stenosis, anatomical stenosis and pouch or esophageal dilatation were significantly higher in the AUD (40.8% vs. 57.5%, 11.5% vs. 21.2%, and 17.9% vs. 32.9%, P<0.001, respectively). The incidence of nutcracker esophagus was not significantly different (1.8 % in the non-AUD vs. 3.4 % in the AUD). The cause of explantation related to band complication was slippage (n=4 vs. n=1), erosion (n=1 vs. n=1), and irretrievable esophageal dilatation (only n=2 in the AUD). **Conclusion:** This study revealed that AUD following LAGB affect poor and delayed weight loss and more frequently developing outlet stenosis as well as pouch and esophageal dilatation. AUD may be one of important unfavorable factors during follow-up after LAGB. Preoperative and postoperative education and warning for risk of alcohol consumption and psychological support for minimizing AUD development are supposed to reduce band related side effects and improve weight loss.

A5050

DIFFICULT REMOVAL OF AN ERODED GASTRIC BAND: AN UNCONVENTIONAL APPROACH TO MINIMIZE TISSUE DAMAGE

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Introduction: Laparoscopic adjustable gastric banding (LAGB) is a commonly performed weight-loss procedure and has a published long-term complication rate of 16%; 1-3% of these are related to erosion of the band[1]. The most common manifestations of band erosion are loss of restriction and port site infection and abscess. Gastric band erosion is often associated with inflammation of the surrounding tissues, which can significantly increase the difficulty of surgical or endoscopic removal of the band. We present a case of eroded gastric band complicated by associated port-site abscess and impenetrable adhesions, necessitating a novel surgical approach for safe removal of the band. A 50-year-old female underwent LAGB and had a subsequent 80-pound weight loss over the next 1.5 years. She presented two years after band placement with fever, epigastric pain, and swelling around her access port. She underwent an esophagogastroscopy demonstrating approximately 50% of the band visible in the stomach lumen. She was found to have a large abscess at the port site with marked abdominal tenderness, leukocytosis, and tachycardia. Therefore, we undertook urgent removal of the gastric band.
Methods: Laparoscopic exploration showed inflammation associated with the band at the cardia of the stomach. The inflammation resulted in dense adhesions, and the band was not visible even after initial blunt dissection over the suspected site of the band buckle. The position of the band could be palpated with the laparoscopic grasper; however, it was completely covered by both inflamed gastric tissue and fatty tissue from the lesser curvature. Given that the band appeared to be completely incorporated into the gastric wall without any visible portion, we evaluated endoscopically. The erosion could be readily seen endoscopically. The position of the band was verified, and again, it appeared that the band was completely incorporated into the gastric wall and covered by inflammatory tissue. Consequently, an anterior gastrotomy was made at approximately the mid body of the stomach in order to perform intraluminal removal. The Harmonic scalpel was used to make an anterior gastrotomym and the eroded band was identified through this gastrotomy. The band was cut using the laparoscopic scissors and removed, although removal was difficult due to tenacious adhesions between the band and the gastric wall. Upon

removal of the band, a defect in the anteromedial aspect of the cardia at the point where the band was incorporated was apparent. There were no further gastrotomies from the band removal, and the anterior gastrotomy that was made to remove the band was closed with a single firing of an endoscopic triple-linear cutting stapler 60-mm purple load. We cleared the edges around the gastric erosion of inflammatory scar and adipose tissue, and then closed the gastrotomy in two layers, which was performed with the gastroscope within the body of the stomach. On completion, there appeared to be excellent closure of this gastrotomy where the band had been incorporated into the anterior abdominal wall. Leak test showed air-tight closure. The port was removed and abscess was irrigated and packed. **Results:** The patient did well postoperatively. Her diet was advanced to pureed diet on postoperative day number three, and she was dismissed from the hospital on postoperative day number four. She experienced no immediate complications.
Conclusions: Erosion of laparoscopic gastric band presents a complex challenge for surgeons and gastroenterologist. Surgical removal is aimed at minimizing damage to the gastric cardia. A gastrotomy through the healthy tissue of the fundus of the stomach is one practical surgical approach to limit dissection of the cardia in removing an adjustable gastric band that is densely-incorporated. 1. Flegal KM, Carroll MD, Ogden CL, et al. Prevalence and trends in obesity among US adults, 1998-2008. JAMA 303:235-241.

A5286

The explant rate of laparoscopic adjustable gastric bands: Data from 2 carefully monitored US studies.

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Laparoscopic adjustable gastric band explantation rates have varied greatly in the literature. The rate at 5-years in the Lap-Band® (LB), pivotal A-trial was 32.5% at 5 years and a current rate of significantly less than this was defined as a safety target in the 5 year pivotal. OBJECTIVES: To assess the AP (Lap-Band®) explant rates in two carefully monitored and FDA-regulated U.S. prospective multi-centre studies. I) The 5-year sponsor-funded LB BMI 30-40 pivotal study for lowering the BMI indications for LB surgery. II) The 5-year HERO study, a prospective, carefully monitored, sponsor-funded, multi-centre study of clinical and health economic outcomes. SETTINGS and METHODS: Study I included 149 participants and was conducted at seven U.S. sites implants (Dec. 2007 t0 May 2008), and study II included 576 participants at 16 US sites (Aug, 2009 to March, 2011). All were private practices with only 1 practice participating in both studies. At the time of closing out data collection, trial I was complete and 5-year data on all participants available; and for trial II, all had completed 3 years, so only data to 3 years was included. Explants were defined as removing the LB without simultaneous replacement. RESULTS: Yearly explant numbers and rates are presented for both studies for 3 years and study I for years 4 and 5. (See Table) ** Of the 9 in year 5, 7 were from one practice where patients were offered free removal of the LB at the end of the study. All 7 were performed in relation to the study end and several of these in the months following study closure but were planned within the study period. CONCLUSIONS: Explant rates in both studies are similar and much lower than the 32.5% safety signal at 5 years. This report reflects the literature from practices using LAGB surgery and mirror the change with time reported in these practices. There have been changes in band design, placement technique and adjustment practices, all of which may have contributed to the major fall in LB explants.

TOPIC: BARIATRIC SURGERY IN ADOLESCENTS

A5052

ASMBS

BARIATRIC SURGERY IN ADOLESCENTS : BAND VS SLEEVE VS GASTRIC BYPASS

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Background: Approximately 33% of adolescents in western countries are overweight and obese, and 80 % of them will become adult obese with associated severe co-morbidities. Medical and behavioral intervention remains largely ineffective in this group. We report our experience with bariatric surgery in adolescents at a high volume center in Chile over the last 12 years
Methods: From 2002 to 2014, 107 adolescents between 13-19 years old underwent bariatric surgery at Clinica Las Condes, a large private medical center in Chile. All of them were assessed by a multidisciplinary team and discussed in a Committee. At the beginning patients only underwent laparoscopic gastric banding (LGB), but over the last 9 years, sleeve gastrectomy (LSG) and Roux en Y Gastric bypass (RYGB) were added

Results: Over this period the number of patients for each surgery were: 38 LGB, 62 LSG and 7 patients had a RYGB. The average age and BMI for LGB was 16 and 38, for LSG 18 and 36 and for RYGB 18 and 41. All of them had 3 or more comorbidities and the majority resolved after surgery. Major complications included 2 cases of slippage (5,3%) in the LGB that required removal. No complications in the LSG and 1 micronutrient deficiency (14%) in the RYGB group. No mortality. Mean excess weight loss at 1 year F/U was 54% for LGB. 85% for the LSG group and 72 % for the RYGB.
Conclusions: Laparoscopic bariatric surgery is safe in obese adolescents. In adequately selected patients and with strict multidisciplinary team follow up, bariatric surgery is an effective means to treat obesity in the adolescent. Of the 3 most common bariatric procedures, it appears to be more effective, in terms of weight loss and safety, the LSG and RYGB over the LGB.

A5054

PROXY MEASURES FOR VITAMIN D STATUS CORRELATE WITH ADVERSE SURGICAL OUTCOMES IN ADOLESCENTS AFTER BARIATRIC SURGERY IN THE NATIONWIDE INPATIENT SAMPLE, 2001-2010: A RETROSPECTIVE COHORT STUDY

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Importance: In the United States (US) 20.5% of 12 to 19 year olds are obese (BMI $\geq$ 35 kg/m^2). Currently, bariatric surgery is the most effective long-term weight loss treatment for adults and adolescents. However, vitamin deficiencies are common in obesity and may contribute to adverse surgical outcomes. In particular, vitamin D (VitD) deficiency compounds the chronic inflammation of obesity, increasing the risk of poor wound healing and surgical site infection.
Objective: To investigate the association between the risk of adverse surgical outcomes in adolescents after bariatric surgery and proxy measures of VitD status (season and latitude) in the Nationwide Inpatient Sample (NIS).
Design, Setting, and Participants: In a retrospective cohort study using Nationwide Inpatient Sample (NIS) data from community hospitals in the US from 2001 to 2010, we assessed proxy measures of group VitD status (season and latitude). We compared surgeries in

VitD Summer (July to September), Winter (January to March), and Fall/Spring (October to December and April to June) and in the North (≥ 37°N) versus the South (< 37°N). We restricted our analysis to bariatric surgery patients aged 13 to 21 years.
Main Outcome Measures: Adverse surgical outcomes including wound infection and dehiscence as well as extended length of stay (LOS) in the hospital (> 3 days).
Results: We identified 15,510 adolescent bariatric surgeries; 79.3% were women and 68.3% were white. Median age was 19.2 years. Most surgeries occurred in northern latitudes (66.0%). Overall adverse surgical outcomes were uncommon with rates ranging from 0.10% for dehiscence to 33.5% for prolonged LOS. There was a non-significant trend towards decreasing frequency with increasing VitD status (seasonality) for dehiscence and any complication. Extended LOS was less frequent in VitD Summer than Winter, but was not significant. Prolonged LOS was more common in the North (p=0.012). The increased occurrence of complications in the North versus the South did not reach statistical significance.
Conclusions and Relevance: Low VitD status may be a risk factor for prolonged LOS as well as adverse surgical outcomes, such as dehiscence. In this study, we were only sufficiently powered to detect a difference in LOS by latitude (North vs. South), yielding a significant negative correlation between VitD status and prolonged LOS (p=0.012). Improving VitD status prior to surgery could prove to be a simple and cost-effective measure to decrease the risk of prolonged LOS and negative outcomes in adolescents as well as adults. Therefore, further study into this relationship is merited for both age cohorts.

A5055

THE NATIONAL INCIDENCE OF ADOLESCENT BARIATRIC SURGERY

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Background: A relatively small number of adolescents who meet criteria for Class II or Class III obesity undergo bariatric surgery. Previous data suggest that yearly rates of inpatient adolescent bariatric surgery have been stable at between 1000-2000 cases a year, though procedure types may be changing. The aim of this study is to provide an updated estimate of the national incidence of inpatient adolescent bariatric surgery and describe the associated procedure characteristics.
Methods: We used the most recent release of the Healthcare Cost and Utilization Project Kids' Inpatient Database (KID) to identify hospital admissions for pediatric (defined as under 21 years of age) patients undergoing bariatric surgery. Bariatric surgical procedures and comorbidities were identified by ICD-9 diagnosis and procedure codes. Using sample weights provided by the KID, a stratified random sample of hospital discharges, we estimated the national incidence of inpatient adolescent bariatric surgery. We also determined length of stay, demographics, complications, insurance coverage, and hospital charges associated with each surgical admission.
Results: The incidence of inpatient adolescent bariatric surgery in 2012 remained stable at approximately 1624 procedures per year. This represents less than 1% of the total population of adolescents with Class III obesity (BMI ≥ 40 kg/m^2). Laparoscopic sleeve gastrectomy (48.4 percent) and laparoscopic Roux-en-Y gastric bypass (41.3 percent) accounted for the majority of cases. Only 5.6% of identified cases were laparoscopic adjustable gastric bands. The in-hospital post-operative complication rate was 2.9%. The average length of stay was 1.97 days. Private insurance was the primary payer for 66.4% of procedures, and the mean hospital charges were $46, 555. The patients were predominately female (78.4%), with a mean age of 18.6 years. 34.8% of patients had 3 or more chronic conditions. The most common comorbidities included obstructive sleep apnea (18.2%), hypertension (15.1%), diabetes mellitus (11.9%), hyperlipidemia (9.9%), and depression (8.2%).
Conclusions: It appears that the overall rate of inpatient bariatric procedures among adolescents remains stable, with a shift towards the use of sleeve gastrectomy.

A5056

CREATING AN INNOVATIVE STAFF TRAINING PROGRAM TO MEET MBSAQIP STANDARDS FOR ADOLESCENTS ON A GENERAL CARE PEDIATRIC FLOOR

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Intro/Background: Childhood overweight and obesity affect approximately 1/3 of US children. Many have one or more comorbidities such as abnormal blood pressure, dyslipidemia, non alcoholic fatty liver disease, metabolic syndrome, polycystic ovarian syndrome, pre-diabetes, diabetes, obstructive sleep apnea, psychological problems, impaired quality of life, as well as others. Treatment of childhood obesity can be time consuming, difficult and complex and many pediatric practices have limited resources to offer interventions within an office setting. To provide guidance in the primary care settting Spear and others, created evidenced-based recommendations for obesity treatment and described it as a step or staged approach for weight management. It provides a practical way to address childhood obesity and the staged care is divided into four stages including prevention plus utilizing healthy lifestyle changes, structured weight management, comprehensive multidisciplinary intervention and tertiary care intervention. Our Adolescent Weight Loss Surgery Program is a part of a comprehensive multidisciplinary intervention program through the Healthy Lifestyles Center where the pediatric surgery team evaluates adolescents for surgery during the tertiary care intervention phase. With the new Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program, (MBSAQIP)Standards, only the centers who have achieved this designation may perform bariatric operations. While the Virginia Commonwealth University Health System has been a pioneer in adult bariatric surgery, we only recently received our accreditation as a Comprenhensive Center with Adolescent Qualifications. In order to qualify and maintain accreditation, specific educational training is required for all staff who care for this population.

Purpose: The purpose of this project was to develop an innovative educational plan for all staff caring for overweight and obese adolescents. In addition, special training sessions were developed for staff to care for adolescents during the post-operative period following surgery. Additional goals for this project included improved safety and decreased complications.

Methods: Modeled after the MBSAQIP training sessions outlined in the resource manual, three teaching modules were created utilizing self-learning modules accompanied by hands-on training with the staff. Topics included: Signs and Symptoms of Postoperative Complications, Sensitivity Training, and Patient Transfer and Mobilization as described in Standard 2.9. These initially consisted of notebooks with printed materials, a post test and answer key with rationales, and a sign-in roster.

Results: Following implementation of the project, the self-learning modules were placed on the hospitals' computerized learning exchange for easier access for all staff and for more consistent documentation. Analysis of results is incomplete at present. Project outcomes will be available and provided at the conference.

Conclusions: Providing organized and easily available educational modules on the pediatric floor in a printed and digital format will result in improved care provider satisfaction and, we theorize, improved compliance with adhering to the MBSAQIP educational requirements. Initial satisfaction results have been positive.

TOPIC: BYPASS PROCEDURES

A5058

THE EFFECT OF LAPAROSCOPIC SINGLE ANASTOMOSIS GASTRIC

BYPASS (LSAGB) ON TYPE 2 DIABETES MELLITUS

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Objectives: Laparoscopic single anastomosis gastric bypass (or mini-gastric bypass) started to become popular among bariatric surgeons and is being increasingly preferred in morbid obese patients who have body mass index over 50 kg/m^2 or who have concomitant systemic diseases such as diabetes mellitus. The present study aims to evaluate the effect laparoscopic single anastomosis gastric bypass (LSAGB) on Type II diabetes mellitus (T2DM).
Methods: Morbidly obese patients who underwent LSAGB in our department in two years period were analyzed in terms of remission of T2DM and related metabolic parameters.
Results: 183(43M) patients with a mean (range) age of 49,6(29-62)years, underwent LSAGB with a mean follow up period of 18(2-26)months. Mean hospital stay was 4.5(4-7)days. None of the patients had any mojor complications after surgery. 110(30M) patients were diabetic and 73(13M) patients were non-diabetic. Mean body weight of the diabetic patients was 139 (102-220)kg. At the end of the follow up period, mean body weight dropped to 85.5(65-130) kg. Of the 110(60%) patients with T2DM; 62(56%) were on oral anti-diabetic and 48(44%) were on insulin. Mean preoperative blood glucose level of 152(111-250)mg/dl was dropped to 84(70-160)mg/dl in one year. Mean HBA1C dropped from 9.1% (5.7-10.9) to 5.1% (4.3-6.9). Furthermore, preoperative serum insulin and C-peptide which were 15.4 (4.9-36.4)IU/mL and 4.37(1.3-7.5)IU/mL dropped to 10.1(3.8-29.5)IU/mL and 3.3(1-6,5)U/ mL Oral anti-diabetic requirements in the diabetic patients who underwent LSAGB were eliminated. Only 3 patients in insulin group needed oral anti-diabetics for postoperative 3 months which gradually subsided and these patients also became drug free. In other 2 patients insulin dosage was dropped gradually and stopped at 1 year in one patient and the other patient is still on low dose insulin.
Conclusion: LSAGB seems to be an effective treatment modality for treatment of morbidly obese patients with diabetes. It is very effective in weight loss and resolution of comorbidities, has a better safety profile and technically less demanding than other types of gastric bypass procedures. Therefore it might be a procedure of choice for patients with severe obesity and T2DM.

A5059

EVIDENCE FOR AND POTENTIAL CAUSES OF HIGH POSTOPERATIVE RADIATION EXPOSURE IN GASTRIC BYPASS PATIENTS

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Background: The anatomic rearrangement of Roux-en-Y gastric bypass (RYGB) makes plain films less useful for the evaluation of postoperative abdominal pain, and because of the significant risk of missed diagnoses in these patients, there is evidence that RYGB patients undergo more frequent CT scanning than does the general population. This exposes such patients to a higher lifetime dose of ionizing radiation and may predispose them to future cancers. We hypothesized that a relatively high rate of postoperative CT scanning would be seen in our series of RYGB patients, and that a significant number of these CT scans would show “normal post-gastric-bypass anatomy,” resulting in no subsequent major interventions. Additionally, we hypothesized that certain preoperative clinical and psychological factors might lead to increased use of CT scanning in this population.
Methods: With IRB approval, we proposed the retrospective review of the electronic health records (EHRs) of all adult patients undergoing laparoscopic RYGB at the Penn State Hershey Medical Center from June 2006 through December 2014. We sought to determine the number of patients undergoing abdominal/pelvic CT scanning for abdominal pain at any time after RYGB. The total amount of ionizing

radiation received per patient was then calculated in order to compare this to a general population estimate based on ambient radiation. We then reviewed whether any given scan led to a significant intervention, including admission for treatment, an operation, or another invasive procedure, allowing us to compare the relative necessity of each scan. EHRs were also analyzed for preoperative factors that we considered could have the potential to increase the use of scanning in RYGB patients. This included the nature of psychological clearance determined by our program psychologist in the following categories: "green light," meaning cleared to proceed without further intervention versus "yellow light," indicating clearance to proceed but with recommendations for ongoing or additional treatment. In addition, we collated various psychological diagnoses such as depression, anxiety, bipolar disorder, medication use, and others, regardless of whether the patient still received a "green light" to proceed with surgery. Finally, we specifically assessed chronic narcotic use for pain syndromes prior to surgery.

Results: There were 983 patients in our database who underwent RYGB during the period of study. Of these, it was notable that 327 patients (33.3%) underwent abdominal/pelvic CT scanning at least once postoperatively, not surprisingly with 127 of these patients (12.9% of total) having their first scan within 30 days of surgery. The range of scans per patient was 1-24, with 52.9% of scanned patients having 1, 24.5% having 2, 8% having 3, 3.4% having 4, and 2.8% having 5 scans. Table 1 shows the number of scans per patient grouped by fives. Because of the laborious nature of individual chart review with a large amount of data, a preliminary dataset of 421 patients has been analyzed. (We anticipate full review within 3 months.) The average ionizing radiation delivered per scanned patient was 4116mGy, compared to an annual mean background radiation exposure in the world of 2.4mGy per person. Among patients who were scanned, 63.9% were admitted for treatment, 27.9% of scans led to an invasive intervention, and 19.7% of scans showed significant, potentially adverse clinical findings specifically related to the RYGB. 72.9% of scans showed normal post-RYGB anatomy and no clinically significant findings, meaning many patients were admitted based on symptoms and not based on adverse scan findings. Comparing scanned and non-scanned patients, among the charts reviewed there was no significant difference between the percent of patients with "green light" psychological evaluation (69%) versus "yellow light" evaluation (31%). On average, 32.6% of patients in both the scanned and unscanned groups used at least one antidepressant medication. There were, however, interesting trends in the scanned group that may prove significant on further evaluation, including an increased history of alcohol abuse (14.7% vs. 1%), as well as an increased rate of unmedicated anxiety disorder (14.7% vs. 5.2%), binge eating disorder (8.8% vs. 1.5%), chronic narcotic use (5.9% vs. 2.1%), and prior suicidal ideation (2.9% vs. 0.8%).

Conclusions: In our patient population we confirmed that RYGB patients are at significant risk for undergoing postoperative CT scanning and therefore receive much higher doses of ionizing radiation than the general population. A large percentage of postoperative abdominal/pelvic CT scans in RYGB patients demonstrated normal post-RYBG anatomy and did not of themselves indicate a need for treatment. Psychological and preoperative clinical factors may contribute to increased use of CT scanning after RYGB surgery, and better understanding of this may help in selecting patients to possibly undergo a different procedure. We hope to study this in sleeve gastrectomy patients for comparison purposes. In addition, we plan to investigate the alternate use of MRI to evaluate bariatric patients in order to expose them to less ionizing radiation in the future.

A5060

AN EXPANDED RETROSPECTIVE REVIEW OF TROCAR-SITE HERNIAS IN PATIENTS UNDERGOING LAPAROSCOPIC GASTRIC BYPASS

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Background: Trocar site hernias are potentially serious complications of laparoscopic surgery. The rate of clinically diagnosed trocar site hernia in laparoscopy is reported between 0.3 and 5.4%, depending on the trocar diameter, trocar type, and type of surgery. Most such hernias are found at incisions where trocars of 10mm or greater are used, or where incisional extension for specimen extraction or open cut-down technique is used. Many authors recommend routine closure of such defects, with reports of sutured closure, mesh closure, or obliteration with a collagenous plug. Such closure, however, requires time, costs and other drawbacks such as postoperative pain and increased potential for wound infection. All prior series related to laparoscopic port site hernias are based on clinical presentation alone. We sought to examine the prevalence of asymptomatic trocar site hernias on postoperative CT scans in a series of laparoscopic gastric bypass (LGBP) patients where surgery was performed with unclosed port site fascia. Our aim was to determine if the presence of such hernias may be underreported.
Methods: After IRB approval, a retrospective review of all patients undergoing LGBP at the Penn State Hershey Medical Center from 2005-2014 was performed. All procedures were performed in an identical fashion by four surgeons, using dilating optical trocars (Endopath Xcel, Ethicon, Cincinnati, OH). All ports were placed above the level of the umbilicus and no fascial closures were performed. The standardized technique including placement of one 11mm port, two 12mm ports and two 5mm ports. Any patients undergoing postoperative abdominal CT scanning for any reason at any time in the study period were included; patients who had undergone a separate laparoscopic operation after LGBP but prior to CT were excluded.
Results: 1095 patients underwent LGBP during the study period. Of these, 244 patients (22.3%) underwent at least one postoperative CT scan without an intervening laparoscopic procedure, providing 732 port sites of 11 or 12mm diameter to study. Only 2 defects (0.27%), each in a different patient, through the abdominal wall musculature and fascia were identified. One was present in an 11m port site, and one in a 12mm port site. Both defects were plugged with fat, were not palpable, and were asymptomatic. Incidentally, 59 patients (24%) were noted to have umbilical hernias on these scans, many of which had been appreciated preoperatively.
Conclusions: The rate of incisional hernias in dilating optical access trocar sites is extremely low in patients with clinically severe obesity undergoing LGBP with trocars as large as 12mm. This may be particularly true with ports placed above the arcuate line, as is most common in weight loss surgery. Our data suggests that even when such hernias are found, they are asymptomatic and such patients are at low risk for bowel strangulation. We conclude that routine closure of the fascia of such port sites is unnecessary.

A5061

DEEP VENOUS THROMBOSIS AND PULMONARY EMBOLUS AFTER GASTRIC BYPASS AND SLEEVE GASTRECTOMY: A NSQIP ANALYSIS

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Introduction: Patients undergoing bariatric surgery are at high risk for deep venous thrombosis (DVT) and pulmonary embolus (PE). Efforts have been made to minimize this risk while also avoiding increased hemorrhage in this high risk group. The laparoscopic sleeve gastrectomy (LSG) is a newer operation which has comparable weight loss outcomes to laparoscopic Roux-en-Y gastric bypass (LRYGB). We sought to evaluate a national database for any differences in DVT and PE rates between these operations.
Methods: The ACS-NSQIP Database was queried for all LRYGB and LSG operations performed from 2005 – 2011. The patients were evaluated for their comorbidities, age, BMI and gender. DVT and PE rates were calculated. Multivariate analysis was then performed to isolate risk factors for DVT and PE in these patients.
Results: We identified 52,389 patients, of which 47,356 (90%) underwent LRYGB, while 5,033 (10%) underwent LSG. The two patient subgroups were of similar age, gender makeup

and BMI (Table1). DVT rate was higher for LSG (0.48% vs. 0.26%, $p < 0.05$) while PE rates was lower (0.18% vs. 0.21%, $p < 0.05$). Risk factors for DVT include age, dyspnea at rest and CHF (Table 2). Risk factors for PE include age, COPD, CHF, ESRD, CVA, paraplegia, > 10% unintentional weight loss in last 6 months and bleeding disorders (Table 3).
Discussion: The LSG appears to confer a higher risk for DVT than LRYGB. The reasons for this are unclear. Continued vigilance in the post-operative period should be maintained. Further studies with a larger LSG population will help clarify this issue.

A5062
EFFECT OF LAPAROSCOPIC SINGLE ANASTOMOSIS GASTRIC BYPASS (LSAGB) ON SUPER- AND SUPER-SUPER OBESITY
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Background: Surgery is widely accepted as the best treatment option for morbid obese patients. On the other hand, the management strategy including the choice of the procedure for the super-obese(SO) (BMI≥50) and super-super obese(SSO) (≥60) patients is still unclear. We herein present our experience with single anastomosis gastric bypass (LSAGB) as compared to single-stage sleeve gastrectomy (LSG) in patients with BMI over 50kg/m^2.
Patients and Methods: 83(10M) patients with BMI≥50kg/m^2 were grouped as super obese (65patients) and super-super obese (18patients) underwent surgery were included in the study. LSAGB was the procedure of choice in 70 patients (16 super-super obese) whereas LSG used as single-stage procedure in only 13 patients (2 super-super obese) due to patients choice. Patients were followed-up regularly and weight loss (WL) (kg), excess weight loss (EWL) (%), blood glucose, HbA1C, insulin, C-peptide and lipid profiles were measured and recorded.
Results: During last 2 years period 427(114M) patients underwent surgery for morbid obesity. There were 344 patients with BMI≥40kg/m^2. 231(67%) underwent LSG whereas 113(33%) underwent LSAGB. In 83(10M) patients with BMI≥50, 70(84%)underwent LSAGB and 13(16%) underwent LSG. Preoperative BMI were 53(50-58,7) and 64(60-67,7)kg/m^2 for super-obese and super-super obese group respectively. Rates of T2DM were higher in super-obese and super-super obese patients than morbid obese group(%47.7%, 44.4% vs 31%). Whereas HT was higher in super-super obese group than super-obese and morbid-obese group(33% vs %13). Mean follow-up was 15.3(2-24)months. Both WL(kg) and EWL(%) were better after LASGB than LSG and were also better than morbid-obese group but not differed between SO and SSO groups. Remission of T2DM-based on blood glucose, HbA1C, insulin and C-peptid levels- were achieved in all patients after LSAGB. Only 2 patients with T2DM underwent LSG and one had remission(50%). However, effect of LSAGB on T2DM was not differed between SO and SSO patients.
Conclusion: Based on WL(kg), EWL(%), and remission of diabetes we obtained similar results in SO(≥50) and SSO(≥60) patients for LSAGB which is better than the morbid obese patients(BMI between 40-50kg/m^2). LSAGB was also found to be more effective in achieving better outcome than LSG in these group of patients.

A5063
LONG-TERM SURVEILLANCE FOR INTERNAL HERNIA AFTER MESENTERIC CLOSURE IN RYGB: INCIDENCE AND OUTCOMES
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Introduction: One complication of laparoscopic gastric bypass (LRYGB) is the development of an internal hernia (IH). The true incidence of this problem remains elusive. More problematic is predicting when IH may lead to serious complications such as bowel obstruction with ischemia or perforation. Although the incidence of IH is reported to be around 1-5%, there is still paucity of data available regarding its occurrence over an extended follow-up period. The aim of this study is to evaluate the incidence of IH after LRYGB over a long-term follow-up.

Method: This is a retrospective review of 2370 consecutive patients who underwent a LRYGB from 10/2001 to 2/2015 at our institution. Only patients who developed an IH after LRYGB done at our institution were included in this study. Antecolic/gastric gastrojejunal anastomosis was performed in 2225 patients (94%). All mesenteric defects were closed with permanent sutures at the time of LRYGB. All patients had 100% initial follow up. In the IH group, the range of follow up was 2 to 138 months with 91% of patients having at least 24 months follow up. In the IH group the prevalence of IH, clinical presentation, correlation between the acuteness of presentation and operative and radiographic findings as well as operative outcomes were analyzed.

Result: There were 92 internal hernias over the mean follow up of 43 months (IQR: 19,74) for incidence rate of 3.9%. The rate of IH for AA and RR anastomosis were similar at 3.8% and 4.1% respectively (p=0.869). The mean time to IH repair was 21 months (IQR: 12,41). 57 (62%) IH patients were repaired electively while 35 (38%) required emergent repair. 23 (25%) IH patients were found incidentally during operations performed for other reasons. Abdominal pain, especially in the epigastric and left upper abdomen, was the most common complaint at presentation (89/92; 97%). Nausea was present in 75% (69/92) and post prandial pain was noted in 43% (40/92) of patients. CT scan was the most commonly utilized imaging study (75/92). 42 out of 75 CT scans showed findings consistent with IH for an overall sensitivity of 56%. However, sensitivity of CT was higher (88%) when performed on patients who needed emergent repair of IH versus those who underwent an elective repair (31%) (P<0.001) UGI and abdominal x-ray had lower sensitivity for detecting IH, 11 % and 9% respectively. All repairs were attempted laparoscopically with a total of 3 conversions (3.3%). Mean OR time and EBL was 66 minutes and 8 mLs. IH was found at the Petersen's space in 83% (76/92), at both Petersen's and jejunal mesenteric closure in 7% (6/92) and at the mesocolon in 5% (5/92). Defect without herniation of bowel was found in 19% (17/92), herniation without obstruction/incarceration in 48% (44/92), herniation with obstruction/incarceration in 29% (27/92) and strangulation/ischemia in 4% (4/92). There was no incidence of bowel necrosis or need for bowel resection. Sensitivity of CT for diagnosing IH when patient had defect without herniation was 23 %, 40% for herniation without obstruction, 91% for IH with incarceration and 100% for IH with strangulation. Patients who underwent emergent repairs had a higher incidence of incarceration (51% vs 15%; p<0.001) and strangulation (12% vs 0%; P=0.009) compared to the elective repair group; conversely, the incidence of defect without herniation (30 % vs 0%; p<0.001) and herniation without incarceration (54% vs 37%; P=0.108) was higher in the elective repair group. Mean LOS was 1 day (IQR: 0-2). At 30 days post-op, there were 19 ER visits (21%), 7 readmissions (7.6%) 4 reoperations (2 for bleeding, 2 for wound infection) and no mortalities.

Conclusion: In our series, the incidence of IH after laparoscopic gastric bypass is 3.9% with a mean follow up of 43 months. Mean time to development of IH was 21 months. At the time of the repair, IH group had similar amount of weight loss compared to the no hernia group. Laparoscopic repair was possible in 97% of cases with low morbidity and short LOS. Acute presentation requiring emergent operation for IH was associated with higher rates of incarceration and strangulation but for patients with an initial IH, bowel necrosis/ischemia requiring resection was avoided.

A5064

ASMBS

ROBOTIC-ASSISTED PARAESOPHAGEAL HERNIA REPAIR AND ROUX-EN-Y GASTRIC BYPASS

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Introduction: Obesity is a risk factor for hiatal hernia. In addition, much higher recurrence rates are reported after standard surgical treatment of hiatal hernia in morbidly obese patients.
Material and Methods: Patient is a 51 year old female with hypertension and long time history of obesity.She enrolled our bariatric program. An upper GI identified a paraesophageal hernia as it's shown above. Patient was offered to undergo a robotic assisted paraesophageal hernia repair and roux-en-y gastric bypass.
Results: The procedure started with dissection of the hiatus. The esophagus was dissected circunferencially at least 15 cm into the mediastinum , then the GE junction was brought back into the abdomen. The fat pad and teh hernia sac was ressected. Then the hiatus was closed with several interrupted non absorbables sutures. In order to reinforce the closure a 10x10cm mesh was suture to the hiatus with a keyhole to allow for the esophagus . The mesh was suture with interrupted absorbables sutures. Then attention was turned to the construction of the gastric pouch. A 30 cc pouch was constructed firing a stapler. Satisfied with the creation of the gastric pouch , then we proceeded to perform the jejuno-jejunal anastomosis. The transverse colon was retracted cephalad. Then the ligament of Treitz was identified. We then measured approximately 50 cm distal to the ligament of Treitz, and the jejunum was divided there. We then measured out 120 cm more to construct the Roux limb. The site was identified at the anastomosis. A stitch was placed between the biliopancreatic limb and site on the jejunum where the anastomosis would be formed to begin the common limb. Two enterotomies were made with the robotic hook. An stapler was then introduced into the jejunal limbs and was fired. A 3/0 absorbable suture was used to close the enterotomy. The second layer was made with 4-0 absorbable. After the completion of a Jejuno-jejunal anastomosis , the gastrojejunal anastomosis was constructed. The omentum was divided to allow bringing the alimentary limb with less tension. The alimentary limb was brought to the GE junction and the jejunal limb was suture to the gastric pouch.The posterior outer layer was made with running 3-0 absorbable. Gastrotomy and enterotomy was done with cautery. The anastomosis was constructed in two layers in a running fashion with 3/0 absorbable. The mesenteric gap of the jejuno-jejunostomy was closed with running 3/0 PDS sutures. An intraoperative EGD was performed to rule out bleeding or leaks. A postoperative Upper GI showed a normal anatomy. There were no complications registered and patient was discharged on postoperative day 5.
Conclusion: Concomitant paraesophageal hernia repair with Roux-en-Y gastric bypass appears to be safe and feasible. Rouling out hiatal hernias should be a priority during the preoperative evaluation and intraoperatively. Robotic assistance faciliatates dissection and precision in these complex cases.

A5065

TOTALLY ROBOTIC ROUX-EN-Y GASTRIC BYPASS FOR HIGH-RISK BARIATRIC PATIENTS

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Introduction: Older age, a high BMI, and male gender are predictors of morbidity and mortality with Roux-en-y gastric bypass. Recent studies find that the robotic surgery system may reduce morbidity in high risk bariatric patients. In this study, we examine the safety and effectiveness of totally robotic Roux-en-Y gastric bypass (TR-RYGB) on high risk patients (males, superobese, elderly).
Methods: The study is a retrospective analysis of 1,234 consecutive TR-RYGB patients, average age=49.4y, BMI=48.5 with a

Female/Male distribution=72%/28%. A relatively large percentage (40%) of patients were superobese (BMI ≥50) and more than ¼ of the population (25.3%) were elderly (≥60 years of age). Outcomes included: 1) total operative time, 2) intraoperative complications and conversions, 3) length of hospital stay (LOS), 4) In-hospital complications and reoperations, 5) 30-day readmissions due either to malaise (nausea, vomiting, dehydration, benign pain, constipation/diarrhea) or physical issues (strictures, leaks, infections, ulcers, pneumonia, hematomas, cardiac events, abscess and more), 6) 30-day mortality rates, and 6) weight loss success (% change in BMI at 6, 12, 24, and 36 postoperative months).
Results: With TR-RYGB, intraoperative complication and conversion rates for all patients, i.e. 0.32% and 0.16%, respectively, were low, and, there were no differences in intraoperative complications or conversions for males vs. females, the superobese vs. non-superobese, or older (≥60 y) vs. younger (<60 y) patients. Total operative times averaged 123.7±27.2(SD) minutes and mean LOS was 2.2±1.0 days. Operative times were significantly ($p<0.0001$) higher for the superobese (126.8 min) and males (130.1 min) than for their respective counterparts and LOS was longer for patients ≥ 60 y (2.4 days). In-hospital complication and reoperation rates for the population, at large, averaged 2.43% and 2.10%, respectively, and there were no significant differences (chi sq $p>0.05$) between these rates for the high risk patients in comparison to their respective controls. In the all-inclusive population, 30-day readmission rates averaged 5.83%, with malaise responsible for the majority (64%) of cases. Similar readmission patterns occurred for the super- vs. non-superobese and for the males vs. females. However, patients ≥60 y had considerably lower readmission rates resulting from malaise than did than did their younger cohort (1.60% vs. 4.44%, respectively). Out of the 1,234 cases, only 1 anastomotic leak occurred for a rate = 0.08%. Risk status had no effect on 30-day mortality (rate = 0.24%). As for weight loss success, total % changes in BMI (34%) for all patients peaked at 12 months and remained relatively unchanged, thereafter. Gender had no effect on weight loss. However, % changes in BMI were less for the older vs. younger patients at 6 and 12 months and greater for the super- vs. non-superobese at 12 and 24 months.
Conclusions: TR-RYGB is a safe and efficacious procedure for high risk bariatric patients including those of male gender, the elderly and superobese. The robotic procedure is particularly beneficial in lowering the risk for intraoperative complications and conversions, as well as anastomotic

A5066

LAPAROSCOPIC ROUX-EN-Y GASTRIC BYPASS AS DAY SURGERY PROCEDURE

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Although large series of 2000 patients returning home the day after their laparoscopic Roux-en-Y gastric bypass (RYGB) have been published, a very short hospital stay is far from being the norm. Concern about major complications developing at home and the analysis of the BOLD database suggesting higher risk and even higher mortality rate for day surgery. Since July 2013 we have performed 22 attempts of Roux-en-Y gastric bypasses (RYGB) as day surgery within a systematic discharge from hospital the day after surgery for every primary RYGB. The day surgery protocol was offered to BMI<50 patients, living less than 1 hour drive from our center. Except insulin requiring type 2 diabetes, comorbidities were not regarded as contraindications. All the patients were female aged 36.8 ± 8.5 years with a body mass index of 41.1 ± 2.3 kg/m² . 8 patients presented with at least 1 comorbidity: 6 had hypertension, 2 type 2 diabetes and 3 sleep apnea. Our standard RYGB procedure was used with 7.5 mg/mL Ropivacaine port site infiltration. 7 ports were used, the gastric pouch was fashioned with 1 transversal 60 mm linear stapler/cutter application and 2 vertical applications towards the angle of His. A 100 cm biliopancreatic limb and 150 cm alimentary limb was measured. The

gastrojejunal anastomosis was performed by a 30 mm linear stapler with the aperture closed by a 3-0 absorbable barbed running suture. The same technique was applied to the jejunojejunal anastomosis. The anesthesiology procedure avoided morphinomimetics. Pain killers were given exclusively per oral after return to the ward. Clear liquids and soft food were allowed 3 hours after surgery and were to be taken before returning home. Blood check as well a Chung score ≥ 9 were mandatory to clear discharge home. Patients were called the following day and the day after by the dietician and the bariatric coordinator. They were usually seen at the clinic between 3 and 4 days postoperatively. Low molecular weight heparin twice a day for 1 week and once for the raining 2 weeks was precribed in accordance with French anaesthesiology guidelines. Nurses at home were instructed to check heart rate as well as temperature when doing the injections during the first 3 days at home. As part of an ongoing experiment some patients were monitored for 72 hours for pulse rate, body temperature and respiratory frequency using a skin patch continuously transmitting data via the cellular network. Procedure duration was 76.6 ± 15.0 minutes and a cholecystectomy was associated with 2 cases. 2 patients were kept overnight (9%): 1 at the beginning of the program reported diziness and the other was not allowed to return home because her gastrojejunal anastomosis had to be redone due to a technical failure. 2 patients were readmitted within 30 days: 1 had to be reoperated on for a peritonitis of unknown origin more than 3 weeks after surgery after an uneventful postoperative course and the other received blood transfusion for an hematemesis within the first 24 hours. Despite being limited by a number of factors, day surgery RYGB appears feasible with excellent pain control as well as the ability of resuming light food early. As outlined by some studies, pulse rate is the key parameter that can suggest bleeding or leakage when tachycardia is around 120 beats per minute. Ultimately, the implementation of this day surgery program has led to numerous changes in our bariatric program with a successful systematic discharge home the day after RYGB.

A5067

THE SAFETY AND EFFICACY OF LAPAROSCOPIC ROUX EN-Y GASTRIC BYPASS IN OLDER PATIENTS WITH MORBID OBESITY

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Background: The UK National Obesity Observatory reported bariatric surgery mostly performed in patients below age 55. Older patients may not be considered good surgical candidates due to concerns regarding increased operative risk and reduced effect on established co-morbidities. This study evaluated clinical outcomes of morbidly obese patients aged >55 years compared to younger counterparts.
Methods: We interrogated a prospectively maintained database of consecutive primary laparoscopic Roux en-Y gastric bypass (LRYGB) performed from Sept 09 to Mar 13 in a UK regional bariatric centre. Demographics, preoperative co-morbidities, operative outcomes, excess weight loss (EWL) and remission of diabetes at 12-months were compared in patients aged >55 and ≤55 years.
Results: LRYGB was completed laparoscopically in 304 patients (220 [72%] female) of which 80 (26%) were aged >55. Median (IQR) age was 44 (39-54) and 61 (58-68) years in each respective group (P<0.0001) with no gender differences (P=0.70). Mean±SD baseline body mass index (BMI) was 54±6.9 and 52±6.5 kg/m^2 in the ≤55 and >55 groups respectively (P=0.40). There was a significantly higher incidence of co-morbidities (diabetes, hypertension, ischemic heart diseases, sleep apnea, and arthritis) in the older group (P<0.001). No postoperative mortality occurred in either group. There was no difference in occurrence of early or late postoperative complications. At 12-month follow up, there was comparable EWL [median (IQR) 72 (54-83) % *vs* 67 (53-83) %, P=0.80], and diabetes remission [75% *vs* 82%, P=0.46] in patients

aged ≤55 *vs* >55 years, respectively.
Conclusions: Although older morbidly obese patients have higher incidence of obesity-related co-morbidities, LRYGB provides benefits akin to those seen in younger patients. Age, *per se*, should not preclude older patients being considered for LRYGB.

A5069
OUTCOMES OF POSTERIOR CRURAL REPAIR IN MORBIDLY OBESE PATIENTS UNDERGOING LAPAROSCOPIC ROUX EN-Y GASTRIC BYPASS
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Background: In patients undergoing laparoscopic insertion of gastric band or sleeve gastrectomy simultaneous repair of hiatus hernia (HH) improves outcomes. Hitherto, there is paucity of data on the effects of simultaneous repair of HH found during laparoscopic Roux en-Y Gastric Bypass (LRYGB). We studied the outcomes of LRYGB with simultaneous HH repair (LRYGB-HH) compared to LRYGB only.
Methods: We analyzed a prospectively maintained database of 304 consecutive LRYGB performed from Sept 09 to Mar 13. Data included patient demographics, baseline co-morbidities, operative outcomes, % excess weight loss (EWL) and diabetes remission at 12-months. Outcomes were compared for patients who underwent LRYGB-HH (posterior crural suture repair) *vs* LRYGB only.
Results: LRYGB was performed in 280 patients whilst 24 (8%) underwent LRYGB-HH. Median (IQR) age and mean±SD body mass index (BMI) at presentation were 48 (41-56) *vs* 54 (48-59) years (P=0.02), and 54±6.7 *vs* 52±8.1 kg/m^2 (P=0.10) for LRYGB and LRYGB-HH, respectively. There were no differences in baseline co-morbidities (diabetes, hypertension, ischemic heart diseases, & sleep apnea). Preoperative reflux symptoms occured more common in patients who needed simultaneous HH repair (P<0.0001). Respective mean±SD operating times were 124±33 and 139±32 min for LRYGB and LRYGB-HH (P=0.10). There were three postoperative complications in the LRYGB-HH group (one postoperative bleed and two anastomotic strictures that required OGD & dilatation). There were no instances of postoperative dysphagia relating to posterior crural repair in the LRYGB-HH group. At 12-month follow-up, there was comparable EWL (mean±SD 70±20% *vs* 65±13 %, P=0.30), and diabetes remission (87% *vs* 80%, P=0.20) for LRYGB-HH and LRYGB respectively.
Conclusions: LRYGB with simultaneous posterior crural HH repair in patients with significant preoperative reflux symptoms was safe, feasible, and associated with low postoperative morbidity.

A5070
SAFETY AND EFFICACY OF STAND-ALONE OPTICAL TROCAR ACCESS IN LAPAROSCOPIC GASTRIC BYPASS PATIENTS WITH MULTIPLE PRIOR ABDOMINAL OPERATIONS
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Background: Access to the peritoneal cavity is a critical step in laparoscopic gastric bypass. Severely obese patients and patients with prior abdominal operations are special populations at risk for complications during laparoscopic surgery. In severely obese patients, access to the peritoneal cavity is complicated by increased thickness of the abdominal wall and preperitoneal fat compared to the non-obese. This sometimes dictates variation in angles of insertion in order to avoid trocar torque, but may lead to an increased potential for internal injury. Similarly, laparoscopic surgery in patients with prior abdominal operations may present challenges. 75%-90% of patients with prior abdominal operations have peritoneal adhesions, either at the site of the previous operation or present at more distant locations. There are several peritoneal access techniques for laparoscopy, including blind Veress needle

placement and insufflation followed by optical access trocar (OAT); open cut-down technique; and OAT alone. The Veress needle technique may facilitate OAT placement but can itself cause vascular and visceral injuries which may not be immediately apparent because of the relatively small needle size, leading to potential for missed injuries. The open cut-down technique is considered safest, but major vascular injuries have still been reported with its use. Open cut-down can also be difficult in severely obese patients, leading to the need for a larger incision, trocar instability, and leakage of CO2. While OAT is not foolproof, it allows visualization of the sequential abdominal layers during access. A low vascular and visceral injury rate (0.3%) has been previously reported with the use of OAT in obese and non-obese patients. Although use of OAT has been shown to be safe for use in laparoscopic surgery in the severely obese, safety of OAT use in obese patients with prior abdominal operations has not been specifically assessed.

Methods: We conducted a retrospective chart review of patients at Penn State Hershey Medical Center, with and without prior abdominal operations, who were scheduled for primary laparoscopic Roux-en-Y gastric bypass (LGBP) using OAT, from August 2006 to January 2014 by 4 surgeons. 985 adult patients were included, meeting NIH guidelines for bariatric surgery, and completing a six-month medically supervised weight loss program. Exclusion criteria included revisional LGBP, and patients converted from laparoscopic to open surgery for non-OAT-related reasons. Demographics, BMI, intraoperative complications due to OAT, number of ports, number and type of prior abdominal operations, and post-operative follow-up times were collected. Tubal ligation and inguinal hernia repairs were excluded from the definition of prior abdominal operation. Major complications were defined as injury to abdominal or retroperitoneal visceral or vascular structures during peritoneal access. Minor complications were defined as failure to achieve peritoneal access with OAT.

Results: The mean age and BMI of the 985 patients were 44.3 and 45.8, respectively. Of the 985 patients, the majority (56.1%) had prior abdominal surgeries. 293 patients (29.9%) patients had one prior abdominal operation, 156 patients (15.6%) had 2 prior abdominal operations and 103 (10.6%) had 3 or more prior abdominal operations. The remaining 432 patients (43.9%) had none. No distinction was made between prior laparoscopic or open procedures. In each LGBP, an 11mm pistol-grip OAT (Endopath Xcel, Ethicon Endosurgery, Cincinnati, OH) over a 10mm, 0-degree laparoscope was used to gain peritoneal access. Out of the 985 patients, there were no major complications secondary to OAT. There was a single minor complication (0.1%), of failure to achieve peritoneal entry with OAT, followed by failed attempt at open cut-down, and subsequent conversion to an open procedure; this was in a patient with one prior cesarean section. The mean length of follow-up was 8 months. No OAT-associated complications were noted in the postoperative period in patients who did follow up.

Conclusion: Our retrospective chart review suggests OAT is safe for primary access in severely obese patients with prior abdominal operations. Our study showed no injuries from use of OAT to gain peritoneal access in morbidly obese patients with or without prior abdominal operations, comparing favorably with the 0.3% rate of major complications from OAT use in non-obese patients with no prior abdominal operations. In addition, there was almost universal ability to access the peritoneal cavity through this modality. The ability of direct visualization of consecutive layers of the abdominal wall with OAT allows for increased safety during peritoneal access. There is relatively low risk for injury to viscera or vessels and efficient entry into the peritoneal cavity. Clinical judgement and surgeon experience will likely impact the success of OAT use.

A5071

OUTCOMES OF ROUX-EN-Y GASTRIC BYPASS IN THE SUPER OBESE: COMPARISON OF BMI 50-60KG/M2 AND ≥60KG/M2 TO THE MORBIDLY OBESE

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Background: Reports on the outcomes of Roux-en-Y gastric bypass (RYGB) in super obese patients are limited, not to mention those of patients with body mass index (BMI) ≥ 60 kg/m^2.
Purpose: The aim of our study was to evaluate and compare the safety and efficacy of RYGB in the super obese, by comparing patients with a BMI 50-60 kg/m^2 and a BMI ≥60 kg/m^2 to those with a BMI 40-50 kg/m^2.
Setting: Academic Practice
Material and Methods: Between January 2004 and November 2013, a total of 2,717 patients underwent RYGB at our institution. Of these, 661 (24.3%) had a preoperative BMI between 50-60 kg/m^2 and 230 (8.5%) had a BMI ≥ 60kg/m^2. A retrospective review of outcomes and complications was performed, comparing these patients to 1,555 patients with a BMI between 40-50 kg/m^2.
Results: Fifty-two (3.3%) patients in the BMI 40-50 kg/m^2 group, fifteen (2.3%) patient in the BMI 50-60 kg/m^2 group and three (1.3%) patients in the BMI ≥ 60 kg/m^2 had less than 30 days of follow-up. Readmission rate was 10.7%, 9.2%, and 11.7%, and reoperation rate was 7.3%, 5.0%, and 6.1% in the BMI 40-50, 50-60 and ≥ 60 kg/m^2 group, respectively. No significant difference was found in readmission rate among the three groups, and reoperation rate was significantly lower in the BMI 50-60 kg/m^2 group. Mean percentage of excess BMI loss (%EBMIL) was 58.3%, 80.6%, 85.8%, 83.3%, and 80.9% in the BMI 40-50 kg/m^2, 44.9%, 65.0%, 70.1%, 72.1%, and 65.9% in the BMI 50-60 kg/m^2, and 38.5%, 57.4%, 62.2%, 62.8%, and 59.1% in the ≥ 60 kg/m^2 group at 6, 12, 18, 24, and 36 month, respectively. The differences in %EBMIL were statistically significant among all three groups at all checked point. All groups showed a significant decrease in their mean number of comorbidities after the procedure. **Conclusions:** Readmission and reoperation rates were similar in BMI 40-50, 50-60, and ≥ 60kg/m^2 group. Although the degree of weight loss decreased in accordance to higher preoperative BMIs, super obese and super-super obese patients are not at greater risk for surgical complications when compared to those with lower BMIs.
Comparison of readmission rate, reoperation rate, mortality rate and weight loss failure rate in super obese RYGB patients

A5072

EARLY DISCHARGE – SCREENING CRITERIA AND RESULTS IN A METABOLIC AND BARIATRIC CENTER IN BRAZIL (SRC CREDITED)

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Background: The risks of complications and mortality in bariatric surgery are associated to many factors regarding both patients' condition and surgical procedure. For this reason we propose criteria able to promote early discharge (discharge in 36 hours after the admission), thus reducing costs and risk of complications associated to hospital stay.
Methods: Inclusion criteria were (1) absence of indication to ICU, (2) patients living in São Paulo, and (3) absence of intra-operatory complications. Exclusion criteria were patients with 3 or more comorbidities. In order to compare results concerning such criteria, we have compared the mean time of hospitalization of our patients operated in 2013 (n= 589).
Results: Of the 634 bariatric surgeries performed in 2014, 476 patients (75%) were included in our criteria of early discharge and 447 patients (93% criteria included patients) received early discharge. Mean time of hospitalization of patients in 2014 was 37.3 hours and that of all 2014 patients was 43 hours. Compared to the patients operated in 2013 (mean time of hospitalization = 60 hours), patients screened by these criteria had a significant reduction in time of hospitalization
Discussion: Comparing both groups, we have found that the adoption of early discharge criteria in patients submitted to bariatric surgery can provide a useful method to reduce the mean time of hospitalization, thus potentially able to reduce costs and risks associated with a longer hospital staying.

A5074

CHRONIC ABDOMINAL PAIN 5 YEARS AFTER ROUX-EN-Y GASTRIC BYPASS

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Background: Abdominal pain is a known, but not well-described complaint after Roux-en-Y gastric bypass (RYGB). We aimed to study the prevalence and predictors of chronic abdominal pain 5 years after RYGB.
Methods: Patients operated at Oslo University Hospital with RYGB for morbid obesity, not previously operated with bariatric surgery, from December 2008 to December 2009 (n=246) were invited to the study. Demographics, symptoms and comorbidities were registered. Patients completed questionnaires concerning chronic abdominal pain (> 3 months duration), depression and anxiety symptoms (HADS), and health related quality of life (SF-36v2). The SF-36v2 is organized into 8 domains, scored 0 (max disability) to 100 (no disability) and was scored using the QualityMetric Health Outcomes Scoring Software 4.5. The HADS is organized into depression and anxiety domains and patients respond using a 0 (minimal) to 3 (maximal) scale. The sum scores of the two domains were used to calculate the odds ratio.
Results: 151 (61%) met to the scheduled 5-year follow-up; of whom 133 (89%) completed the questionnaires, 85 patients (64%) were women. The mean (+/- SD) age, BMI and % total body weight lost were 49 years (8.7), 34 kg/m2 (6.2), and 24% (10.5). At 5 years 22 patients (15,8%) reported surgical complications after RYGB; early postoperative complications (< 30 days) included gastric remnant leakage (2), accidental intestinal perforation (1), acute abdominal pain (1) all in need of reoperations, and intra-abdominal hematoma (1) and gastrointestinal bleeding (1) without need of transfusion or surgical intervention. Late complications included internal herniation (9), cholecystectomy (4), and hospital observation for acute abdominal pain of unknown cause (3). 46 patients (35%) reported that they experienced chronic abdominal pain. Predictors, odds ratio (OR) (95% CI), were female gender OR 5.0 (2.0-12.3), fibromyalgia OR 4.4 (1.2-15.5), symptoms of depression OR 3.5 (1.5-8.6) and anxiety OR 2.7 (1.2-5.7) and surgical complications after RYGB OR 2.7 (1.1-6.9), all $p<0.05$. Patients who reported chronic abdominal pain had lower scores in 7 of the 8 SF-36v2 domains, and both summary scores (Table 1).
Conclusion: Our findings indicate that patients frequently report chronic abdominal pain 5 years after RYGB and that this complaint is associated with reduced health related quality of life. Chronic abdominal pain should be addressed in the follow-up after RYGB.

A5075

WEIGHT LOSS EFFECTIVENESS IN PREGNANT POST BARIATRIC SURGERY PATIENTS: A CASE-CONTROL STUDY AT A PUBLIC BARIATRIC CLINIC IN MEXICO CITY

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Background: More than 80 percent of patients who have bariatric surgery are women; the average age of women undergoing these procedures is around 42 years old. Thus, many tens of thousands of women of childbearing age have had bariatric surgery. Maternal obesity is associated with increased risks of gestational diabetes, large for-gestational-age infants, preterm birth, congenital malformations, and stillbirth. Maternity it self is associated with

gaining weight and most women do not come back to their original weight even they are not obese previous their pregnancy. Because nutrition is a vital component of pregnancy and producing a healthy baby, it is imperative to understand the effects of bariatric surgery, both positive and negative, on fertility and pregnancy outcomes as well as the effect weight loss effectiveness after bariatric surgery.
Objectives: The aim of this study is to analyze the impact of pregnancy on bariatric surgery and weight loss in this group of patients. Method: We identified 19 pregnancies in 749 women who had previously undergone bariatric surgery in the Bariatric Surgery Center "Clínica Integral de Cirugía para la Obesidad y Enfermedades Metabólicas" at the General Hospital "Dr. Rubén Leñero", Mexico City, from March 2009 through December 2014. A randomized control group was assigned of no pregnant post bariatric surgery patients. We performed a retrospective review of the patient's medical records, included variables: age, height, body mass index (BMI), pre surgery weight, post operatory time of pregnancy, pregnancy BMI, actual weight, post operatory BMI and excess weight loss. Statistical analysis was performed using IBM SPSS Statistics V 22.0. Independent samples Student T test was used for parametric variables and Mann-Whitney U test for non parametrical variables. Kolmogorov-Smirnov was used to determine normal distribution.
Results: We performed a retrospective observational study of 54 patients, 19 of these patients where pregnant post bariatric surgery and 35 patients were randomized controls. Mean age of the patients was 32.9 ± 8.3 years old. Mean post operatory time of pregnancy was 24 ± 13.6 months after surgery, mean pre operatory BMI 46 ± 6 kg/m^2 (35 - 64 kg/m^2), mean pregnancy BMI 33 ± 5.6 kg/m^2 (24 - 46 kg/m^2). We found no difference in pre operatory demographic data. Post operatory BMI in the pregnancy group was 29.88 ± 4.8 kg/m^2 and 30.93 ± 5.82 kg/m^2 for the control group (p=0.610) and mean excess weight loss of 75 ± 15.8% and 70.11 ± 19.71% for the control group (p=0.225).
Conclusion: No evidence of change in the effectiveness in the post operatory excess weight loss and final BMI among pregnant post operatory bariatric patients in comparison to control group was observed in our study. A higher sample size and longer follow up might be needed to confirm our results.

A5076

HIATAL HERNIA DEVELOPMENT AFTER MASSIVE WEIGHT LOSS AS A CAUSE OF INTERNAL HERNIA YEARS AFTER ROUX-EN-Y GASTRIC BYPASS

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Introduction: A significant percentage of patients undergoing bariatric surgery are found to have hiatal hernia at the time of surgery. It is generally accepted that Roux-en-Y gastric bypass (RYGB) is a potent procedure to prevent reflux symptoms in morbidly obese patients as well as to treat their underlying obesity.
Methods: We conducted a retrospective chart review of a patient undergoing diagnostic laparoscopy for intermittent abdominal pain three years after RYGB. Results A 58 year old non-ambulatory man had elective laparoscopic RYGB (retrocolic) in April 2012 for a weight of 499 pounds and a BMI of 64 with coronary artery disease, type 2 diabetes, hypertension, gastroesophageal reflux (GERD), and sleep apnea (OSA). He did well postoperatively getting down to his current weight of 242 pounds. He has had remission of his type 2 diabetes, OSA, and GERD, is ambulatory and employed. He was started on ASA and plavix by his cardiologist two years after his weight loss surgery in May of 2014 after losing 85% of his excess weight for ongoing small vessel coronary artery disease. He complained of reflux and was started on a proton pump inhibitor with resolution of his symptoms. He takes his supplements, follows the program recommendations, excercises consistently and has been feeling well until about six weeks prior. He called in January of 2015 with a six week history of postprandial substernal and left lower quadrant pain occuring twice per week. He described it as if the food was not emptying properly from his pouch. A CT scan

of his abdomen and pelvis was read as normal by the radiologist but there appeared to be a significant amount of small bowel in the left upper quadrant. Diagnostic laparoscopy revealed hiatal hernia with his entire pouch and gastrojejunostomy in the chest and an internal hernia at the mesocolon with his entire small bowel above the transverse colon- biliary limb and common limb included. The hiatal hernia was repaired by excising the hernia sac and closure of the crura posterior to the esophagus and then the small bowel was reduced and the petersen's space and mesocolic window repaired with permanent suture. His symptoms resolved immediately.

Discussion: In our practice up to 80% of patients undergoing a vertical sleeve gastrectomy or adjustable gastric band are found to have a hiatal hernia that is repaired at the time of surgery. Over the past 15 years we have increasingly repaired hiatal hernias at the time of Roux-en-Y gastric bypass. On reviewing this patient's chart there was no mention of hiatal hernia seen at primary surgery. Perhaps he had fat occupying the hiatus and his gastroesophageal junction was in his abdominal cavity when he weighed 499 pounds. Certainly at his diagnostic laparoscopy he had a large hernia sac and his gastric pouch, left gastric artery and gastrojejunostomy with proximal jejunum were in his posterior mediastinum. Perhaps the development of his hiatal hernia with weight loss caused enough tension on the mesocolic closure to disrupt it and help his small bowel migrate thru the mesocolic window resulting in his internal hernia. At a BMI of 64, repair of a hiatal hernia would be challenging and be at high risk of recurrence but perhaps would have avoided the development of an internal hernia.

A5077

MID-TERM OUTCOMES OF ROUX-EN-Y GASTRIC BYPASS IN VENEZUELAN PATIENTS WITH TYPE 2 DIABETES MELLITUS.

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Background: The goal was to describe the mid-term results of laparoscopic Roux-en-Y gastric bypass (LRYGB) on excess weight loss, remission of diabetes and complications in patients with type 2 diabetes mellitus (T2DM) in a bariatric program located at Caracas, Venezuela.
Method: Observational retrospective study of 80 obese patients with DM between 1999 to 2010 for a period of 31 months with initial body mass index (BMI) of 49.3kg/m^2. An 81.3% underwent laparoscopic RYGBP and 18.8% open. The mean preoperative T2DM was 3 years. The remission and control rate, diabetic medication usage, complications and changes in the anthropometric values were measured.
Results: At the end of follow-up we founded BMI 30.9kg/m^2, the median percentage of excess weight loss (%EWL) was 69.7% and the percentage of weight loss (%WL) 37.0%. Glycemia decreased from 178 mg/dl to 85 mg/dl, with final value glycosylated hemoglobin of 6.4%. T2DM remission was achieved in 93.75% and control in 6.25% of patients. Diabetic medication requirement was reduced from 87.6% to 6.3% (p=0,001). The preoperative T2DM time influenced the rate of remission (p=0.034). Early complications were 11% and the long term 3.7%, without mortality.
Conclusion: LRYGB is effective for obese patients with T2DM achieving a high remission rate with the early intervention at diagnosis, maintains a successful %EWL at mid-term with a low morbi-mortality.

A5078

ROUTINE ULTRASONOGRAPHY FOR DIAGNOSIS OF NONALCOHOLIC FATTY LIVER DISEASE IN PATIENTS WITH BMI ≥40 KG/M2

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Background: Liver biopsy is the gold standard diagnostic test for Nonalcoholic fatty liver disease (NAFLD), however expensive imaging tests such as MRI and CT have excellent accuracy. The aim of this study is to evaluate ultrasound results obtained in routine ultrasound examinations in patients with BMI ≥40 kg / m^2.
Methods: We analyzed the data of 750 patients with BMI ≥40 Kg/m^2 who were submitted to surgery for morbid obesity at the Centro de Obesidade e Síndrome Metabólica do Hospital São Lucas da PUCRS, Brazil. Every patient underwent ultrasonography before surgery and liver needle biopsy at the beginning of the surgical procedure. The degree of steatosis (Burt' score) on biopsy was compared to its presence on ultrasonography.
Results: All the patients analyzed had NAFLD, 178 (23.7%) mild steatosis, 238 (31.7%) moderated steatosis, 333 (44.4%) severe steatosis and 1 (0.1%) had cirrhosis, and 526 (70.1%) patients ultrasonography presented steatosis. When accessed separately, the ultrasonography presented steatosis in 97 (54.4%) cases of mild steatosis, in 161 (67.6%) moderate steatosis and in 268 (80.4%) of severe steatosis, qui-square = 38.573, P <0.001.
Conclusion: It was observed an increase on ultrasonography sensibility as the degree of steatosis increase in this group of patients.

A5079

CORRELATION BETWEEN DYSLIPIDEMIA IMPROVEMENT AND CHANGES AT BODY FAT PERCENTAGE IN MORBIDLY OBESE PATIENTS SUBJECTED TO GASTRIC BYPASS

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Background: Body Mass Index although it`s practicality have limitations. The aim of this study is evaluate the correlation between dyslipidemia improvement and body fat percentage changes.
Methods: We conducted an observational, retrospective cohort study of patients subjected to gastric bypass. We selected patients who underwent bioimpedance analysis and laboratory tests before surgery at 3, 6 and 12 months postoperatively.
Results: We studied 228 patients with a mean age of 37.4 ± 11.7 years old. Most patients were female (76.3%). Initially, 143 patients (66.2%) showed criteria for dyslipidemia, and 6 months after surgery, this number fell to 83 patients (50.6%) and continued falling over time to only 45 patients (28.5%) 12 months after surgery. In relating different variables with the decrease in percent body fat at 12 months, a significant association was seen with weight loss (r=0.258; p=0.009), BMI (r=0.272; p=0.005) and waist circumference (r=0.357, p <0.001). However, the only biochemical parameter showing a significant association was HDL-C level (r=-0.267; p=0.009). Patients with the greatest decrease in body fat percentage were those with the largest decrease in weight, BMI and waist circumference and highest increase in HDL-C level.
Conclusion: This study demonstrated the association of decrease in percent body fat with increase in HDL-C, regardless of sex and age. The same association was also observed when using the parameters BMI, weight loss and waist circumference.

TOPIC: COMPARATIVE TRIALS

A5080

ABC STUDY: RESULTS OF THE FIRST US RANDOMIZED TRIAL OF BARIATRIC SURGERY FOR TREATMENT OF OBSTRUCTIVE SLEEP APNEA

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Background: Obesity is the most common risk factor for obstructive sleep apnea (OSA) and current treatment with continuous positive airway pressure (CPAP) is often poorly tolerated. Bariatric surgery has been shown to improve OSA severity but these studies have primarily occurred in patients seeking weight loss surgery who are incidentally found to have OSA. We initiated an NIH-sponsored randomized trial of CPAP versus bariatric surgery as initial therapy in patients presenting to a sleep disorders clinic with symptomatic severe OSA (NCT01187771).

Methods: Adult patients with severe OSA and body mass index (BMI) of 35-45 kg/m^2 were recruited from two academically affiliated groups of sleep centers and randomized to either CPAP therapy or laparoscopic gastric banding surgery (LAGB). Follow-up evaluations to assess weight, OSA severity and OSA symptoms were performed at 9 months and 18 months following randomization by blinded observers.
Results: Out of 481 patients meeting eligibility criteria, 97 (20%) attended an informational meeting and 53 enrolled in the study with 49 being randomized (Table 1). There were no major surgical complications. Incidences of adverse events between the 2 treatment groups were similar. LAGB patients had a greater degree of weight loss and reduction in apnea hypopnea index (AHI), although the improvement in effective AHI (AHI accounting for CPAP use) and Epworth Sleepiness Scale (ESS) were similar. Satisfaction with treatment assignment was similar between the 2 groups. The differences in outcomes were persistent at the 18-month evaluation time point.
Conclusion: LAGB is a viable alternative to CPAP at reducing AHI and improving OSA symptoms. Patient satisfaction and incidence of adverse events is similar between LAGB and CPAP. Further studies randomizing patients to more invasive surgeries with greater weight loss are needed and can be justified.

A5081

IMPACT OF LAPAROSCOPIC ROUX-EN-Y GASTRIC BYPASS VERSUS SLEEVE GASTRECTOMY ON POSTOPERATIVE LIPID VALUES

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Background: Bariatric surgery has been shown to significantly improve many obesity-related comorbidities, including dyslipidemia. Previous research in the early postoperative period has demonstrated inconsistent results in lipid values after laparoscopic Roux-en-Y gastric bypass (LRYGB) compared to laparoscopic sleeve gastrectomy (LSG); with some indicating significantly greater reductions in total cholesterol and LDL in LRYGB vs. LSG, and others reporting no significant differences. Our objective was to evaluate the postoperative lipid values in LRYGB vs. LSG.
Methods: A retrospective review of our prospective database was completed to identify patients who underwent either LRYGB or LSG at our institution from 2001 through 2013. Lipid values available at 6-18 months postoperative were evaluated. Statistical analysis included Wilcoxon Rank Sum and χ^2 tests with *P* values adjusted for multiple tests. A *P* value <0.05 was considered significant.

Results: There were 872 and 71 patients who underwent LRYGB and LSG during the study period, respectively, for whom measurements of lipid values from 6-18 month postoperative period were available. The mean preoperative BMI was 47.3 kg/m^2 in the LRYGB group and 45.3 kg/m^2 in the LSG group (P<0.003). Postoperatively, the mean BMI was reduced by 13.9 kg/m^2/year and 12.3 kg/m^2/year in LRYGB and LSG patients, respectively (P=0.002). Postoperative mean total cholesterol, LDL, and triglyceride values were lower in LYRGB vs. LSG patients (Table). Postoperatively, 11% and 30% of LRYGB and LSG patients had a total cholesterol value >200 mg/dL (P<0.001); 5% and 23% had LDL values >130 mg/dL (P<0.001); and 8% and 10% had triglyceride levels above 130 mg/dL (P=0.49). HDL values were within the recommended range in 95% and 92% of LRYGB and LSG patients, respectively (P=0.58). \

Conclusions: Patients who underwent LRYGB had lower postoperative total cholesterol, LDL, and triglyceride values compared to those who underwent LSG. In patients with significant preoperative hypercholesterolemia who are candidates for both procedures, LRYGB may be more appropriate than LSG.

A5082

MICRONUTRIENT DEFICIENCIES IN PATIENTS AFTER LAPAROSCOPIC ROUX-EN-Y GASTRIC BYPASS VERSUS SLEEVE GASTRECTOMY

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Background: Nutritional deficiencies after laparoscopic sleeve gastrectomy (LSG) are common but poorly understood. Perioperative clinical practice guidelines recommend the same minimal daily nutritional supplementation for patients with LSG and laparoscopic Roux-en-Y gastric bypass (LRYGB). However, if LSG is less malabsorptive compared to LRYGB, LSG patients should require less dietary supplementation. The objective of this study is to compare the postoperative nutritional lab values in LSG and LRYGB patients to determine if LSG patients require altered supplementation.

Methods: A retrospective review of our prospective database was completed to identify patients who underwent either LRYGB or LSG at our institution from 2010 through 2013. Nutritional lab values obtained at 6-18 months postoperative were evaluated. All patients received recommendations for dietary supplementation consistent with clinical practice guidelines. Statistical analysis included Wilcoxon Rank Sum and χ^2 tests with P values adjusted for multiple tests. A P value <0.05 was considered significant.

Results: There were 444 and 121 patients identified who underwent LRYGB and LSG, respectively, with lab values available during the study period. The mean age at time of surgery was similar in the two groups at 46.7 years in the LRYGB group and 46.3 years in the LSG group. Mean preoperative BMI was 47.0 kg/m^2 and 45.1 kg/m^2 in the LRYGB and LSG group, respectively. Postoperatively, the mean BMI was reduced by 13.8 kg/m^2/year in the LRYGB group and 12.4 kg/m^2/year in the LSG group. Postoperative mean nutrient values were similar in the two groups and there was no difference in the rate of nutrient deficiencies (Table).

Conclusions: Nutritional deficiencies after LSG are common. Current clinical practice guideline adherence results in similar rates of deficiencies between LSG and LRYGB. Specifically, LSG patients still require supplementation with Vitamin B12 and iron.

A5083

COMPARATIVE ANALYSIS OF BODY FAT PERCENTAGE VERSUS BODY MASS INDEX TO PREDICT WEIGHT LOSS AFTER BARIATRIC SURGERY

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Introduction: Body mass index (BMI) has become the preferred anthropometric parameter in obesity and bariatric medicine as it provides a convenient, noninvasive approximation of body habitus. However, BMI is limited by its neglect of overall body composition. This study aims to examine the utility of body fat percentage (%BF) as an anthropometric parameter and investigates its efficacy to predict postoperative weight loss. **Methods:** From 03/2003 to 03/2015, 2209 patients undergoing laparoscopic Roux-en-Y gastric bypass, sleeve gastrectomy, and gastric banding were prospectively enrolled. Demographic and anthropometric data were collected preoperatively and at 3 and 6 months postoperatively. %BF was determined by bioelectrical impedance analysis for 182 subjects from 11/2013 to 03/2015. Subjects were divided into %BF quartiles: %BF below the 25th percentile (≤48.95 %BF) designated "Low %BF" while %BF above the 75th percentile (≥54.15 %BF) designated "High %BF". Post-surgical weight loss was reported as percent excess weight loss at 3 and 6 months (%EWL3/6); %EWL was also divided into quartiles with %EWL below the 25th percentile (%EWL3≤29.7%; %EWL6≤43.7%) designating "Low Response" and %EWL above the 75th percentile (%EWL3≥47.5%; %EWL6≥85.2%) designating "High Response". Student's t-test and Fisher's exact test were used to compare continuous and dichotomous variables respectively. Multivariate logistic regression was also performed to determine if %BF was correlated to weight loss. Analysis was performed with GraphPad Prism 6 and SAS version 9.3
Results: "Low %BF" subjects had a mean pre-op BMI of 41.5 kg/m^2 (range: 32.2 -55.3) and mean waist circumference of 49.5 in (range: 40.6-62.6). "High %BF" subjects had a mean pre-op BMI of 53.1 5 kg/m^2 (range: 34.3-76.7) and waist circumference of 55.7 in (range: 42.9-73.0). Patients with "Low %BF" lost significantly more weight than those with "High %BF" at both 3 (%EWL 54.5 vs. 34.1%, p<0.0001) and 6 months (%EWL 68.5 vs. 52.5%, p=0.024). Furthermore, subjects with "Low %BF" preoperatively had lower rates of "Low %EWL Response" at 3 months (p=0.0202) and higher rates of "High %EWL Response" at both 3 months (p=0.0031) and 6 months (p=0.0128). There were no differences in complication, readmission, or reoperation rates based on %BF classification. Pearson correlation demonstrated %BF to be significantly correlated with various of weight loss outcomes at both 3 and 6 months including weight, BMI, %EWL, and waist circumference (all p's <0.05). Multivariate logistic regression adjusted for age, sex, and diabetes status showed preoperative %BF was significantly predictive of %EWL at 3 months (OR: 0.31; 95%CI: 0.12-0.84; p=0.021). A second regression adjusting for the same variables showed that "Low %BF" significantly correlated to %EWL at 3 months (OR: 6.94; 95%CI:1.70-28.33; p=0.007). When the regression was adjusted for pre-operative BMI, there was a strong trend correlating "Low %BF" and %EWL at 3 months (OR: 5.44, 95%CI: 0.98-30.23, p=0.0532).
Conclusions: In addition to variability of BMI, there is significant variability in %BF within the bariatric population. Multivariate logistic regression identified %BF to be significantly correlated to post-bariatric weight loss outcomes (subjects with lower %BF had superior weight loss). These results suggest that in addition to BMI, %BF may be an important

A5084
EARLY EXPERIENCE IN MULTI-MODALITY TREATMENT FOR OBESITY
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Introduction: Several new prescription weight loss medications have recently gained approval for use in the United States. Among these are Qsymia (phentermine/topiramate) and Contrave (naltrexone/bupropion). These pharmacologic agents may be useful in a diverse array of settings, including primary weight loss and weight loss in the context of bariatric surgery. We report our experience and early outcomes using these agents for weight loss.
Methods: Subjects were retrospectively identified through a custom EMR data extraction

in partnership with the Center for Clinical Informatics. EMR files from patients presenting to our bariatric/weight management clinic between January 2013 and March 2015 were queried to retrieve all patients prescribed Qsymia or Contrave. A total of 110 patients were identified. Patient demographic data, medication start/stop dates, and anthropometric data were obtained. Wilcoxon matched-pairs signed rank test was used to compare weight loss outcomes over time. All analysis was performed with GraphPad Prism 6.
Results: Prior to treatment, mean weight was 248 lb and BMI was 41.3 kg/m^2. Distribution of medications showed 31.6% of subjects were prescribed Qsymia, 65.0% Contrave, and 3.4% took both Qsymia and Contrave simultaneously. At the time of analysis, 73.5% of subjects had an active prescription while 26.5% had discontinued medication use. Average length of time on medication was 4.3 months with a range of 0.4 to 21.1 months. Of participants on medical weight loss therapy, 50.0% underwent prior bariatric surgery: 41.8% Roux-en-Y gastric bypass, 29.1% sleeve gastrectomy, 5.5% gastric banding, 7.3% StomaphyX, 16.4% Apollo OverStitch. Of these patients, 85.5% initiated medical weight loss therapy following bariatric surgery (mean 46.1 months post-surgery) and 14.5% initiated prior to surgery (mean 6.8 months pre-surgery). Subjects showed significant decrease in BMI from baseline at 1 month ($p=0.0010$) down to 39.1 kg/m^2 at 3 months ($p=0.018$). BMI continued to trend downward at 6 months ($p=0.22$). Average total weight loss trended positively and was 0.93% at 2 weeks, 2.07% at 1 month, 2.13% at 3 months, and 3.74% at 6 months (all p's <0.16).
Conclusions: This study reports early experience with two prescription weight-loss medications in a clinical setting. In this early experience, reductions in BMI and percent weight loss were observed early within treatment initiation. These results shed light on a new paradigm in obesity treatment.

A5085

COMPARISON OF OMEGA LOOP GASTRIC BYPASS VERSUS SLEEVE GASTRECTOMY IN A MAINLY SUPER-OBESE PATIENT GROUP – SHORT- AND MID-TERM RESULTS

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Introduction: Laparoscopic sleeve gastrectomy (LSG) is a well – established bariatric procedure especially in patients with a BMI > 50 kg/sqm. However, there are doubts that all LSG patients are able to conserve their remarkable short – term results in the long run when being compared to the results of bypass procedures. There is on the other hand increasing evidence that the omega loop gastric bypass (MGB) is a safe and effective operation especially, but not only in super-obese patients. We also use MGB as a surgical option in super – obese patients and compared our results with those of our LSG patients.
Material and methods: The data of all the patients who underwent either of the 2 procedures as a primary operation in hospital (1) were prospectively collected over the last more than 7 years and compared for perioperative and mid – term postoperative results.
Results: Since 2007, 169 patients were operated by MGB, while 118 patients underwent LSG. Both groups were comparable for age, gender distribution and BMI (54.1 kg/sqm in the MGB group vs. 54.6 kg/sqm in the LSG group). Mean operation time (81.7 min. vs. 112.1 min.) as well as hospital stay were lower in the MGB group (4.5 vs. 7.2 days). Perioperative (30 days) mortality was 0.96% in the LSG group (1 patient) vs. 0% in the MGB group. Perioperative complication rate (Clavien/Dindo grade 3 or higher) was as well lower in the MGB group (2.4% vs. 7.6%). Mean excess weight loss (EWL) after LSG reached its maximum afters 2 yrs. (60.3%) and then started to drop to 57.7% after 3 yrs. and 42.3% after 6 yrs. On the other hand, EWL after MGB is so far still on the incline: 69.1% after 2 yrs. and 77% after 3 yrs..
Conclusions: Both MGB and LSG are safe and feasible options of surgical treatment in super-obese patients with comparable results within the first 2 years. However, our mid – term data

suggest that MGB might be superior regarding continuing EWL, although long – term results need to be waited for.

A5087

RESULTS CONCERNING PERIOPERATIVE COMPLICATIONS IN A METABOLIC AND BARIATRIC CENTER IN BRAZIL (SRC CREDITED).

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Background: Bariatric surgery is the most effective and safe method to treat morbid obesity and its comorbidities. The risks of complications and mortality are associated to many factors regarding both patients' condition and surgical procedure, including age higher than 65 years old, comorbidity with conditions such as cardiovascular, lung, hepatic and kidney diseases, previous abdominal surgical procedures, and also to the expertise of the surgical team, especially concerning diagnosis and treatment of complications.
Methods: During 2013 and 2014, we have performed 1.223 bariatric surgeries in a bariatric and metabolic center in Brazil (São Paulo). We have performed quantitative and qualitative analysis of perioperatory complications observed in these patients, including bleeding, intestinal obstruction, fistulae, infections, thromboembolic events, and mortality.
Results: Of the 1.223 patients operated, there were 64 patients suffering perioperative complications (5.2%). From them, 57 (4.6%) presenting nausea/vomits, dehydration, thromboembolic events and bleeding were observed and clinically resolved. Seven patients (0,5%) showing bleeding and intestinal obstruction were treated surgically. There was an intraoperatory complication related to iatrogenic spleen lesion, treated by mean of conversion to an open technique necessary to splenectomy, with good evolution. There was no mortality.
Discussion: Comparing with the literature, where rates of intraoperatory complications and hospital readmissions are related to be around 5-6%, our results on 2013 were3,7% and on 2014 were1,5%, been better.

A5088

THE EFFECT OF NUTRITIONAL AND PSYCHOTHERAPEUTIC VIDEO-TELECOMMUNICATIONS ON WEIGHT LOSS FOR MORBIDLY OBESE PATIENTS POST-BARIATRIC (SLEEVE GASTRECTOMY) SURGERY.

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Morbid obesity has become a national and global health problem. It has been identified as a chronic life-long multifactorial disorder influenced by medical, psychosocial, physical and economic issues.
Purpose: The purpose of this study evaluated the benefits of obtaining weight loss and the ability to maintain weight loss long term with an intervention of video- telecommunication. The study also examined different patient trajectories of weight loss over time which provided information regarding individual differences in patterns of weight loss after bariatric surgery and counseling. The experimental arm of the intervention provided the patients with the convenience and accessibility of participating in the recommended nutrition/psychotherapy follow-ups after bariatric surgeries by video-telecommunication instead of the current standard of care of face to face nutrition/psychotherapy follow-up. Theoretical framework: The intervention of video-telecommunication, in providing after care to bariatric patients, supported the "Health Promotion Theory". This theory provided pathways for the practitioners as a guide to improving the health, functional ability of patients and quality of life. Review of the Literature: The literature included a total of 29 studies, 19 are population based non-randomized and 10 are database reviews.
Method: Study had 2 randomly assigned groups of a convenience sample of LSG patients from the same practice. One group received nutrition/psychotherapy with the assistance of video-telecommunication and the other group

without video-telecommunication while receiving nutrition/psychotherapy with the current standard of care of face to face followup. Both groups followed up at 1 week, and every month for initial 6 months, post-surgery. The random assignment was by generated random number assignment. This was a pilot study, and power analysis was not indicated. The expected minimum sample was 20 which investigated the patterns of weight loss and the sustained effect of weight loss between and within groups.

Results: A total of 20 participants from Bariatric facility were enrolled in the study. The participants were primarily female (75%). The data was analyzed by the Ancova design which compared the pre-intervention body mass indexes (BMIs) to the final post-intervention BMIs and it estimated the mean differences between the two groups and their compliance with participation in the nutritional/psychotherapy sessions. This pilot study was underpowered for ANCOVA analysis ($p = .122$). However the mean differences in 95 % Confidence Intervals constructed around the time 4 BMIs overlapped with each other(video intervention group= (Lower Bound – 21.8, Upper Bound 58.7); face to face control group= (Lower Bound – 32.9, Upper Bound – 47.3), so no difference in final BMIs estimated between groups. The study showed differences across trajectories of compliance and BMIs both within each group respectively, and between groups.

Conclusion: The completed data did not exhibit a statistical significance in the first arm of study using video-telecommunication with nutritional and psychotherapeutic sessions as compared to the face to face sessions with weight loss post LSG. In the second arm of the study, there was a comparison of the compliance with follow-up participation in the face to face group (90%) to the video-telecommunication group as seen in the (30%) recidivism rate.

TOPIC: COMPLICATIONS

A5089

LOW HOSPITAL READMISSION RATES ACHIEVED AT RURAL BARIATRIC CENTER THROUGH EDUCATION AND A STANDARDIZED DISCHARGE PROTOCOL

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Introduction: A rural mid-volume center of excellence (COE) community hospital in northern California, Enloe Medical Center, maintains below average readmission rates, even exceeding the rates recently published by Stanford (who recently reduced their readmission rates from 8% to 2.5% over 18 months). The program has maintained the standards and status of COE since 2006, and has reduced 30-day readmissions post bariatric surgery from 3.4 % from 2006-2011 (16:864) to 1.3% from 2012 to 2014 (8:616).

Methods: As our volume of primary bariatric surgeries has increased from 130 in 2006 to 250 patients in 2014, the Vertical Sleeve Gastrectomy (VSG) became the dominant surgery performed, while the Roux-en-y (RNY) and Adjustable Gastric Band (AGB) decreased significantly. All surgeries were done laparoscopically. The average length of stay (LOS) for all procedures from 2012-2014 decreased to 1.4 days (compared to 2.5 days from 2006-2011). The hospital is a 298-bed non-profit rural community hospital. Data is collected by chart review and review of a prospectively maintained database. Our program has two bariatric surgeons who assist each other with most surgeries and alternate call. Robust patient educational programs include five points of contact by a bariatric nurse (education at initial seminar, pre-op bariatric class, pre-op testing appointment, in-patient educational hospital visit, and follow up phone call). Surgeons are available to patients (by phone call and appointment) and mentors are assigned to patients who desire additional

support. Hospital discharge educational process includes written and verbal education from the bariatric nurse coordinator, primary care nurse, and in-patient dietitian on the day of discharge; family members are encouraged to be present for all education. All patients are called 1-3 days after discharge (prior to the weekend) from the hospital to ensure understanding and compliance with instructions and to troubleshoot any problems. All patients are seen by the surgeon the week following operation prior to advancing beyond a liquid diet.

Results: Readmission rates have remained below national average since the program emerged as a COE in 2006 and have decreased significantly in the past three years. National average readmission rates are currently 4.95% for all procedures. Program readmission rates decreased to an average of 1.3% for the past 3 years (down from 3.4% in years 2006-2011). High risk patients are included as follows: for the years 2012-2014: Patients with BMI >50: 20.9% (N=129), BMI>60 4.2% (N=26), BMI>70: 0.5% (N=3); conversions from AGB to VSG 2.5% (N=15); and older patients: 21.2% >60 years old, 1.2% >70 years old. Decreasing an already low readmission rate was felt to be accomplished by replacing the RNY with the VSG as the primary surgery and increasing volume of bariatric surgeries, while maintaining a robust education and discharge process protocol

Conclusion: Increased safety in bariatric surgery, demonstrated by decreased re-admissions and shorter LOS, can be achieved even at a rural mid-level volume hospital when Center of Excellence standards are followed, robust educational programs are utilized, and a standardized discharge education protocol is implemented and maintained. Utilizing the VSG as the primary surgery appears to further reduce readmission rates and shorten LOS while maintaining results comparable to the RNY.

A5090

PREDICTING PREVENTABLE CAUSES AFTER BARIATRIC SURGERY: A LOOK INSIDE THE "BLACK BOX"

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Background: Readmission rates are increasingly used as a surrogate for quality in medicine. Surgical readmissions are associated with poorer overall clinical outcomes as well as significant financial risks for patients as well as providers. Understanding readmissions is challenging because the definition of a readmission varies nationally, regionally and even locally. Different payers have different criteria for defining readmissions. Given this difficulty, understanding what may be preventable readmissions becomes even more difficult. Recent studies suggest that many bariatric readmissions may be preventable. A study from New York State used proprietary software to calculate the prevalence of preventable readmissions; however, due to the complexity of the software, the specific definition of a preventable readmission was not outlined in the report. The objective of this study was to define readmissions after bariatric surgery and then to determine the incidence of preventable readmissions as well as identify modifiable factors that might assist in decreasing readmission rates.

Methods: This is a retrospective review of all readmitted bariatric patients after an initial Roux-en-Y gastric bypass (RYGB) or Sleeve Gastrectomy (LSG) from May 1, 2007 through April 30, 2014. Any patient readmitted to the hospital for any length of stay within 30 days of discharge was defined as a readmission. All admissions to outside facilities within 30 days of surgery were included. An emergency room visit was not considered a readmission and no patient remained in the emergency room for more than 23 hours. Readmissions were first classified as unrelated or related to the initial surgery. A readmission was classified as unrelated if the indication (admission diagnosis) was not associated with a surgical diagnosis or a complication and the patient did not receive direct treatment during the initial stay. Patients were also classified as no readmission (NR), preventable readmission (PR) or non-

preventable readmission (NPR). A readmission was considered preventable if improvements in a health care process (i.e. discharge, follow up or outpatient management) could have prevented the readmission. Preoperative demographic factors and comorbidities as well as perioperative factors were analyzed using both univariate and multivariate analysis. Patients with preventable readmissions were compared to those with no readmission and also to those with non-preventable readmissions.
Results: A total of 2113 patients underwent either RYGB or LSG during the study period. 96% of patients and all readmitted patients were available for 30 days post-operative analysis. There were no significant differences in age, BMI, or sex for any of the three groups. One hundred and thirteen patients (55%) were readmitted during the study period and 25 were for less than 2 midnights (22%). 84% of readmission for less than 2 midnights were considered PR. Of the total readmitted 60 (53%) were NPR and 53 (47%) were PR. Of the PR 49 (92.5%, p=0.058) were related to the initial surgery. Patients with a readmission indication of nausea, vomiting or dehydration (NVD) were the most likely to have a PR (62.3% v 33.3%, p=0.002). [Table #1] NPR were more likely for those admitted with a major complications (53.3% v 15.1%, p <0.0001), including obstructions and leaks as well as those requiring reoperation (38.3% v 13.2%, p=0.003). Compared to NPR, the time to readmission was one shorter for the PR (6 vs. 7 days respectively, p value 0.5620) and LOS was significantly longer for NPR (4.5 vs. 2 days). Multivariate analysis showed that GERD (p=0.017) and readmission related to initial surgery (p=0.031) were significantly associated with PR.
Conclusions: The rate of potentially preventable readmissions in a large, single institution cohort with excellent patient follow up was 47%. Like others, our study showed that nausea, vomiting or dehydration was the most frequent cause of readmission. Patients with NVD were also the most likely to have a PR. As expected, those patients readmitted with a major complication or for re-operation were significantly associated with NPR. Our plan is to further investigate the social and communication factors involved in patients with preventable readmissions to identify interventions that may prevent the need for readmission.

A5091

BLEEDING FOLLOWING BARIATRIC SURGERY: WHAT PATIENT FACTORS AND CLINICAL INDICATORS SHOULD WE LOOK FOR?

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Introduction: Bariatric surgery is considered the most effective treatment for morbid obesity. The safety profile of bariatric surgery has improved recently with the uptake of laparoscopy and widespread implementation of accreditation programs. With the higher volume of bariatric procedures performed, it is important to understand the risk factors that may be associated with adverse events. Since many patients in the bariatric population may not be able to tolerate postoperative complications given their medical comorbidities, successful management is contingent on early diagnosis and treatment. Bleeding is a major complication after bariatric surgery and can lead to significant postoperative morbidity or even mortality. The reported incidence of postoperative bleeding is between 1 and 4%. Some studies have suggested that factors such as age, body mass index (BMI), and use of selective serotonin reuptake inhibitors (SSRIs) may be associated with an increased risk of bleeding. The purpose of this study was to better characterize the clinical indictors and patient factors associated with postoperative bleeding.
Material and Methods: We performed a retrospective review of all patients undergoing bariatric surgery at our centre between March 2012 and May 2014. Our data was merged with information collected from our institution's National Surgical Quality Improvement Program (NSQIP) and Metabolic and Bariatric Surgery Accreditation and Quality Improvement

Program (MBSAQIP) registries. All adult patients who underwent a laparoscopic Roux-en-Y gastric bypass (LRYGB) and sleeve gastrectomy (LSG) were included in the study. Patients who had revisional surgery were excluded. A total of 81 preoperative, 5 intraoperative and 46 postoperative variables were reviewed for each patient. Patients with postoperative bleeding were then directly compared with the rest of the study population. Postoperative bleeding was based on either clinical evidence or the need of a blood transfusion. All statistical analyses were performed using SAS v9.3 software (Cary, NC).
Results: A total of 788 patients were included in our study. The number of patients with and without a postoperative bleeding complication was 17 (2.16%) and 771 (97.84%), respectively. Mean postoperative hemoglobin in the bleeding group was significantly lower (94 vs 126; $p<0.001$) with a larger decrease in hemoglobin from baseline (-12 vs. -43; $p<0.001$[AO2]). There were no statistically significant differences between these two groups with respect to age, sex and BMI. However, the proportion of patients with a BMI >50 kg/m^2 was found to be significantly lower in the bleeding group (34% vs. 7%; $p=0.040$). The duration of Optifast® along with use of preoperative anticoagulants, nonsteroidal anti-inflammatory drugs (NSAIDS) or SSRIs were also similar in both groups. Of note, preoperative partial thromboplastin time (PTT) was significantly higher in the bleeding group (29 vs. 31; $p=0.032$). Thirteen patients (76%) in the bleeding group required one or more units of blood transfusion. Seven patients (50%) in the bleeding group required an urgent reoperation. There was one death (0.13%) in our series, unrelated to postoperative bleeding. Postoperative physiological parameters such as a higher mean heart rate (81 vs. 91, $p<0.001$) and an increase in heart rate from baseline (-0.01 vs.12, $p<0.001$) were found to be associated with postoperative bleeding. However, the mean postoperative systolic blood pressure (SBP) and proportion of cases with hypotension (SBP <90 mmHg) were not significantly different between groups.
Conclusion: Although postoperative bleeding complications following LRYGB and LSG are rare events in our series, they can be serious and lead to significant morbidity. Postoperative hemoglobin level, mean heart rate along with changes in hemoglobin and heart rate from baseline appear to more valuable clinical indicators of bleeding than systolic blood pressure. Age and BMI were not associated with bleeding and none of the patients with postoperative bleeding were on SSRI therapy before surgery. Further research is needed to develop a robust predictive model for bleeding following bariatric surgery.

A5092

BARIATRIC SURGERY, IN THE COMMUNITY HOSPITAL SETTING, CAN BE PERFORMED SAFELY WITH EXCELLENT OUTCOMES.

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Background: Bariatric surgery is a safe effective long term means of weight loss for the morbidly obese patient. It has been shown that dedicated surgeons/dedicated hospitals following multiple disciplinary approaches established for *Excellence* continue to improve bariatric surgical outcomes. The aim of this paper is to retrospectively review the first 15 years of a single surgeons weight loss operations, performed in a single community hospital setting, to demonstrate that bariatric surgery can be safely performed in a community institution with low morbidity, no mortality and outcomes (LOS, ICU stays and percent EWL) that may redefine the standards of weight loss surgery in the ccommunity care setting.
Methods: This is a retrospective accounting of a single dedicated general surgeon's bariatric surgical experience spanning the past 15 years in a 275 bed community hospital, Unity hospital, located just north of Minneapolis MN. Unity hospital is one of the first hospitals in Minnesota to obtain COE designation (2005) and today remains accredited in excellence by MBSAQIP. Of the 2152 cases performed 1775 were primary operations. These operations

performed included open RNY, laparoscopic RNY, gastric banding, revision surgery and sleeve gastrectomy. The average patient age was 43 (range 18-73). The average BMI was 45.7 (range 33-80). 78.5 % of the patients were female. The patient follow up at 12 months was 95.39%.

Results: The average hospital LOS of these primary operations was 1.4 days. There were no deaths in the 90 days following surgery. In this time frame there were 133 post-surgical complications requiring ambulatory care/hospitalization with 58 readmissions of which 13 patients required reoperations. Only 19 patients required admission to the ICU with only 2 patients requiring ICU care for one week or longer. Abdominal pain was the most common reported subjective post surgical complaint while dehydration was the most common objective post surgical complaint. Weight loss was excellent with average EWL at 12 months for the laparoscopic RNY – 75.3%, open RNY – 71.2%, Sleeve – 65.02%, and Band – 37.5%.

Conclusion: Bariatric Surgery performed at a community hospital can be done safely, economically and with excellent outcomes, all which may redefine community standards.

A5093

PREVALENCE AND IMPLICATIONS OF CIGARETTE SMOKING IN MORBIDLY OBESE PATIENTS UNDERGOING BARIATRIC SURGERY

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Introduction: Marginal ulcerations and its complications are particularly prevalent in smokers. We reviewed the marginal ulceration, obstruction and wound infection complications in our bariatric surgery population.

Materials and Methods: After IRB approval we conducted a retrospective review of a prospectively maintained database of the patients who underwent bariatric surgery between 2010 and 2014 at our institution. The patients who reported smoking cessation were also included in this review. A number of co-morbidities, postsurgical complications including the prevalence of marginal ulceration were compared between the smokers and the non-smokers. Marginal ulceration complications included bleeding, obstruction, wound infection, and fistula formation.

Results: Of the 1139 morbidly obese patients, 369 had a previous history of smoking (32.3 %) and 770 non-smokers. Smokers consisted of 103 (28%) gastric bypass, 194 (53%) sleeve gastrectomy and 12 (3%) adjustable gastric banding patients. Regarding the co-morbidities such as Sleep apnea P=0.0001, Dyslipidemia P=0.0001, History of Coronary Artery Disease P=0.002, History of Myocardial Infarction P=0.002, Hypothyriodism P= 0.013, Depression P= 0.008, Hypertension (*P*=0.002) and Ostearthritis P=0.002 all demonstrated a significant difference. No significant differences were found in other comorbidities including Diabetes (*P*=0.55) and GERD (*P*=0.15). There was no significant value in the re-admission rate for both smokers and non-smokers. Smoking patients were at higher risk for Wound infection P=0.024, Obstruction P=0.44, Marginal ulcer P= 0.008, and non- obstructive incisional hernias P=0.037. However, there was no significant difference in both groups with regards to Nausea P=0.45, Dehydration P=0.6 and Fistulas P=0.21.

Conclusion: Cigarette smoking in patients undergoing Bariatric surgery for morbid obesity increases the risk of suffering post-surgical complications including marginal ulceration, wound infection and obstruction

A5094

ENDOSCOPIC SUTURING PLATFORM FOR THE MANAGEMENT OF PROXIMAL SLEEVE GASTRECTOMY LEAKS

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Laparoscopic Sleeve Gastrectomy (LSG) is a safe and effective treatment for morbid obesity and associated comorbidities. However, staple line leaks, although rare, can result in significant morbidity, prolonged hospitalization, and multiple surgical and endoscopic procedures. No best practice exists for the management of LSG leaks. Most algorithms involve the placement of endoscopic stents; however, placement near the GE junction can be problematic, poorly tolerated, and can result in severe reflux and associated complications. We describe three cases of management with an endoscopic suturing platform (Overstitch, Apollo Endosurgery, Austin TX).

Case 1: A 54 y/o female underwent LSG using a staple line buttressing material and was discharged on POD#3. On POD#17 she presented with abdominal pain and food intolerance. Abdominal CT revealed a contained leak and was treated with TPN and NPO and placement of a non-covered stent. She never became septic or required drainage of the fluid collection. A large sympathetic left pleural effusion required percutaneous drainage. The stent was removed 22 days after placement due to migration causing obstruction and an inflammatory pseudoployp. She continued to be symptomatic with a small fistula and, 2.5 months after the initial surgery, underwent endoscopic closure of the fistula using the Overstitch. A small fistula only visible on a CT persisted for 1 week and resolved along with her symptoms.

Case 2: A 69 y/o female with extensive surgical history including multiple mesh hernia repairs underwent LSG using a staple line buttressing material and extensive adhesiolysis and was discharged on POD#2 after a negative upper GI study. She was re-admitted with chest pain POD#4 and contrast CT scan showed a staple-line leak. She was taken for a laparoscopic converted to open exploration with oversewing of the staple line and intra-operative leak test was negative. Multiple drains were placed. She was managed with TPN and antibiotics yet had persistent signs of infection. On POD # 19 she was transferred to our institution for endoscopic management of a persistent proximal leak. On POD# 22 she underwent endoscopic suturing of the fistula using the Overstitch device. There was some narrowing of the proximal stomach after the oversewing requiring placement of a covered stent. She had significant dysphagia, nausea and chest discomfort until the stent was removed on POD#40. A small contained leak with no communication to the surgical drains persisted until POD #47. The patient's symptoms resolved completely and all drains were removed.

Case 3: A 41 y/o male underwent an uneventful LSG using a staple line buttressing material and was discharged on POD#2. He presented on POD#15 with high-grade fevers and chills. A CT scan was positive for a contained leak. He underwent a diagnostic laparoscopy and placement of drains. Although no fluid collection was found, the dense adhesions between the fat and the buttressing material were not taken down. On POD#18 he underwent endoscopic suturing of a small staple line disruption using the Overstitch device. Post-procedure UGI showed resolution of the leak. He was kept on TPN and antibiotics for 10 days and he was discharged home without any drains and tolerating liquid diet well. These three cases demonstrate successful management of staple line leaks following LSG using the Overstitch by an experienced advanced endoscopist. This approach avoids the possible complications following placement of covered stents and should be considered early in the management of LSG leaks.

A5095

IS THERE A PATTERN IN THE REASONS OF READMISSION AFTER BARIATRIC SURGERY?

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Objective: The aim of this study is to compare the most frequent chief complaints of patients readmitted after different bariatric procedures.
Background: Readmissions after bariatric surgery is one of the least studied complications

after surgery. Readmissions have been shown to increase costs not only for the patient but also for health care services.
Methods: In this single institution retrospective study we included all patients who underwent a bariatric procedure between 2011 and 2014 and were readmitted within 30 days of discharge . Chief complaints that resulted in readmissions were categorized in 6 groups: abdominal pain, chest pain, nausea or vomiting, surgical complications, and others-not related to the original procedure. Each group was studied individually. Comparisons of length of readmission stay were made between procedure types using the Kruskal-Wallis rank-sum test. Comparing length of readmission were defined as less than 23 hours vs. admission which was defined as a length of stay over 23 hours using Pearson's 2 test. The procedures that the patients underwent were categorized in 4 groups: Roux-n-Y Gastric bypass (RYGB), gastric sleeve (LSG), gastric band (LGB), and revisions (LGB-R/ RYGB-R).
Results: We had a total of 157 readmissions. Overall, 31% were readmitted for abdominal pain (n=48), 9% for chest pain (n=14), 33% for nausea or vomiting (n=51), 14% for surgical complications (n=23), and 13% for other causesnot related to the original procedure (n=21). No significant difference was found between patients who were admitted and those who were observed, $p = 0.11$. Although the median and mean day of readmission is day 14, based on the Kruskal-Wallis test, there were no common time frames observed. (25= 6:68; p= 0:25). Furthermore, when analyzing the length of stay of these readmitted patients among the different chief complaints, there was not a significant ($p = 0.077$). When analyzing the relationship between the different chief complaints by comorbidities, there seem to be no significant associations between Diabetes, Sleep apnea, hypertension, and hypercholesterolemia/hyperlipidemia $p = 0.99$.
Conclusions: We found no significant differences between chief complaints and readmissions after bariatric surgery. All the reasons of readmission presented a similar pattern in terms of time after surgery and length of stay with no correlation with the type of procedure they had undergone. However the first two weeks seem to be the time interventions need to focus to potentially reducing readmissions.

A5096

RETURN TO THE OPERATING ROOM FOLLOWING BARIATRIC SURGERY: HOW TO HELP GUIDE DECISION-MAKING

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Introduction: Bariatric surgery is considered the most effective treatment for morbid obesity. The safety profile of bariatric surgery has improved recently with the uptake of laparoscopy and widespread implementation of accreditation programs. Complications such as bleeding and anastomotic leaks are rare but serious and may result in significant postoperative morbidity or even mortality if not recognized early. Some studies have suggested that age; body mass index (BMI); smoking and medical comorbidities are associated with an increased risk of complications requiring reoperation. The purpose of this study was to describe the incidence of early reoperation and the clinical indicators associated with these cases. A better understanding of the factors related to reoperations can help guide future decisions to reoperate and improve the overall safety of bariatric surgery.
Material and Methods: We performed a retrospective review of all patients undergoing bariatric surgery at our centre between March 2012 and May 2014. Our data was merged with information collected from our institution's National Surgical Quality Improvement Program (NSQIP) and Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program (MBSAQIP) registries. All adult patients who underwent a laparoscopic Roux-en-Y gastric bypass (LRYGB) and sleeve gastrectomy (LSG) were included in the study.

Patients who had revisional surgery were excluded. A total of 81 preoperative, 5 intraoperative and 46 postoperative variables were reviewed for each patient. Patients who required an urgent reoperation within 30 days of surgery were then directly compared with the rest of the study population. All statistical analyses were performed using SAS v9.3 software (Cary, NC).

Results: A total of 788 patients were included in our study. The number of patients with and without a reoperation was 14 (1.78%) and 774 (98.22%), respectively. The following diagnoses were reported after reoperation: bleeding (10 patients – 71.5%); anastomotic leak (1 patient – 7.14%); strangulated ventral hernia (1 patient – 7.14 %) and negative laparoscopy (2 patients – 14.28%). Of those 10 patients who required reoperation for bleeding, 6 (60%) received blood transfusions before their reoperation. There was one death (0.13%) in our series. Patient demographics were similar in both groups in terms of age, sex, American Society of Anesthesiologists (ASA) score, comorbidities and medication use, including anticoagulants, nonsteroidal anti-inflammatory drugs (NSAIDS) and selective serotonin reuptake inhibitors (SSRIs). Mean BMI was lower in the reoperation group (48 vs. 43; $p=0.002$). The following postoperative indicators were found to be associated with reoperation: lower mean hemoglobin (126 vs. 111; $p<0.001$); decrease in hemoglobin from baseline (-12 vs. -29; $p<0.001$); higher mean heart rate (81 vs. 96; $p<0.001$); increase in heart rate from baseline (-0.2 vs.19; $p<0.001$); and decrease in systolic blood pressure (SBP) from baseline (3 vs. -10; $p=0.006$). However, the mean postoperative SBP and proportion of cases with hypotension (SBP <90 mmHg) were not significantly different between groups.

Conclusion: Although urgent reoperation following LRYGB and LSG are rare events in our series, they can result in significant morbidity. Postoperative hemoglobin level, mean heart rate along with changes in hemoglobin, heart rate and systolic blood pressure from baseline appear to be the most valuable clinical indicators for reoperation. Patient age, BMI, or comorbidities were not associated with an increased risk of reoperation. Further research is needed to develop a robust predictive model for reoperation following bariatric surgery.

A5097

PORTAL MESENTERIC VEIN THROMBOSIS AFTER LAPAROSCOPIC SLEEVE GASTRECTOMY: CLINICAL PRESENTATION AND MANAGEMENT

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Introduction: Portal mesenteric vein thrombosis (PMVT) after laparoscopic bariatric surgery is rare, but has been increasing in frequency in last few years. However there has been increasing correlation between Laparoscopic Sleeve Gastrectomy (LSG) and PMVT compared to laparoscopic Roux en-Y gastric Bypass or Laparoscopic gastric Banding. The purpose of this study was to present a series of patients who developed PMVT after LSG, treated with different modalities depending on the extent of their PMVT at the time of diagnosis.

Method: This is a retrospective analysis of patients who underwent LSG between April 2005 and February 2015 who developed PMVT. Demographic data, family history of thrombophilia's and personal risk factors were analyzed in this study. DVT prophylaxis was given to all the patients as standard of care. CT scan was used for all the patients to diagnose PMVT.

Result: Four patients (%) developed PMVT after surgery. Mean age of all the patients were 51.75 years. Out of 4 patients, 2 were male and 2 were females. One had history of Deep Vein Thrombosis. All of them denied use of smoking or OC pills. All the patients were discharged on day 2 with no intraoperative or postoperative complications. Patients presented at an average of 20days (range, 10-35) post LSG with typical symptoms (abdominal pain, nausea, vomiting) of PMVT. Each case had different severity of

PMVT and thus we treated them differently. Out of 4 patients, 1 patient had stable nonocclusive PMVT and required only standard anticoagulation. 2 patients had occlusive PMVT and required more aggressive treatment like thrombectomy with TPA along with anticoagulation. Bowel ischemia was seen in 3 patients and required additional bowel resection. Out of four, three were discharged on anticoagulation for longer time while fourth patient died due to Acute Respiratory Distress and multiple organ damage.
Conclusion: PMVT is relatively uncommon complications in bariatric population. However familiarity with this dangerous entity is important. Prompt diagnosis and treatment is critical and needs a high index of suspicion. Standard anticoagulation should be reserved for stable patients while combination of anticoagulation with thrombectomy and TPA should be given for more serious patients with concern of bowel ischemia. Our technique would hopefully, enable a swift and favorable resolution

A5098
VALUE OF ROUTINE CONTRAST RADIOGRAMS FOLLOWING LAPAROSCOPIC GASTRIC BYPASS AND SLEEVE GASTRECTOMY.
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Background: Laparoscopic bariatric stapling procedures (LBSP), namely laparoscopic Roux Y gastric bypass (LRYGB) and laparoscopic sleeve gastrectomy (LSG) remain the most commonly performed bariatric operations in the United States. One of the most severe complications of LBSP remains staple line and anastomotic leaks. Postoperative routine gastrografin swallow contrast radiograms (RGSCR) are frequently recommended and performed with the hope to detect and treat these complications early, thus reducing morbidity. Our study examines the benefit of RGSCR after LBSP.
Methods: Prospectively obtained and collected data was analyzed on consecutive 702 primary LRYGB and 477 LSG operations performed between August 2001 and April 2015 by a single surgeon (PG). As part of our clinical pathway since the inception of the study, RGSCR were performed on the first postoperative day on the initial 100 LRYGB patients. After this period, selective use of RGSCR was adopted (SGSCS). The same protocol was later followed for LSG procedures.
Results: All patients were offered laparoscopic surgery and there were no conversions to open procedure. There were no perioperative mortalities. RGSCR revealed one early leak in the first 100 patients undergoing LRYGB. This patient presented with early clinical signs of leak. There was one late leak in the SGSCS group detected clinically and confirmed radiologically. In the LSG groups there were no leaks in either group as well as no reoperations.
Conclusion: Overall value of RGSCR is low. When a surgeon's leak rates remain low, the transition from routine to selective utilization of RGSCR appears clinically favorable and cost efficient.

A5099
ABDOMINAL PAIN AFTER ROUX – Y – GASTRIC BYPASS: ETIOLOGY AND MANAGEMENT
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Background: The number of laparoscopic bariatric procedures being performed worldwide has increased dramatically in the past decade. The laparoscopic Roux-en-Y gastric bypass (LRYGB) is not only the most common bariatric procedure, but also the gold standard to which all others are compared. Abdominal pain is a common complaint following LRYGB. Aim: to

assess the incidence, etiology and management of patients with pain after LRYGB presenting at our institution.
Methods: A retrospective review of all patients presenting with a intermittent repetitive abdominal pain after LRYGB at our institution was conducted. The complementary work-up, the final diagnosis and treatment were analyzed.
Results: Between 2009 and 2013, 592 patients underwent RYGBP in our department. A total of 138 patients (23.31 %) complained of intermittent repetitive abdominal pain after LRYGB. 116 patients (84.05 %) were admitted to the surgical ward from the emergency department and the remaining 22 were hospitalized during the follow up in outpatient clinic. The final diagnosis was: non-specific abdominal pain - 35 cases (25.4 %), anastomotic ulcer – 28 cases (20.3 %); biliary lithiasis – 19 cases (13.7 %); internal hernia – 15 cases (10.9 %); incisional hernia – 15 cases (10.9 %); small bowel obstruction – 14 cases (10.1 %); anastomotic leaks – 6 cases (4.3 %); unrelated diseases – 6 cases (4.3%) (2 appendicitis, 1 inguinal hernia and 3 renal lithiasis). Leukocytosis was present in 27 patients (19.56 %). 59 out of 138 patients required surgical exploration (42.75 %), for the following indications: 19 cholecystectomies; 15 incisional hernia repairs (11 laparoscopic/1 robotic/ 3 open); 3 suture of perforated ulcer (one of excluded stomach); 2 laparoscopic drainage; 4 suture of anastomotic leak; 9 section of adhesions; 4 bowel resections; 5 bowel reduction from internal hernia; 7 mesenteric space closures. 41 patients were operated in emergency setting. A fully laparoscopic approach was possible in 48 patients (81.36 %) with 4 conversions required. The mean follow up was 3.06 years (range 3 months - 6 years)
Conclusions: Abdominal pain after LRYGB is not negligible. Preoperative diagnosis may be difficult due to the nonspecific clinical presentation. Upper endoscopy and diagnostic laparoscopy represent the best diagnostic tools. Most patients will require surgical exploration and can be managed successfully by laparoscopy.

A5100

GASTRO-COLONIC FISTULA FORMATION AS A COMPLICATION OF BARIATRIC SURGERY

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Introduction: Gastro-colonic fistula formation is a rare and unusual complication after bariatric surgery. Two such cases have been seen recently, and, although their etiologies are not entirely clear, both patients had persistent struggles associated with marginal ulceration after their Roux-en-Y gastric bypass (RNYGB) surgery. These two cases and their successful management are discussed.
Case Presentation: The first case is a female who underwent a RNYGB in 2007. A persistent smoker, she struggled with chronic marginal ulceration. She began having post-prandial diarrhea and failure to thrive including additional weight loss and neurologic complications due to vitamin and mineral deficiencies. Prior to our evaluation she was receiving supplemental intravenous iron and copper infusions, and she had been recently admitted with pneumonia thought to be secondary to chronic aspiration. After treatment of her pneumonia, an UGI showed the presence of a gastro-colonic fistula. She was then referred to Wake Forest for further management. An UGI and EGD confirmed a fistula between her gastric pouch and transverse colon but also revealed a complete obstruction of her gastro-jejunostomy. The second patient underwent a RNYGB in 2004. Several years after her surgery, she began to struggle with weight gain for which she underwent a revision of her prior RNYGB in 2008. After this procedure she struggled with chronic abdominal pain and marginal ulceration. As a result, she had a diagnostic laparoscopy and another gastro-jejunostomy revision. She was referred to Wake Forest in 2014 with a recurrent marginal ulcer, nausea, and abdominal pain. After discussing potential treatment options and her struggles with chronic marginal ulceration, a conversion

to vertical sleeve gastrectomy was performed. Postoperatively she developed a contained leak at her gastro-gastric anastomosis. She was kept NPO and a post-pyloric feeding tube was placed to optimize nutrition. The leak sealed over the next month, which was confirmed on UGI. Her diet was slowly advanced and she was trialed without her post-pyloric feeding tube. She returned ten weeks post operatively with persistent post-prandial non-bloody, non-bilious emesis and dehydration. An UGI was obtained which showed a gastric stenosis at the gastro-gastric anastomosis with a fistula proximally between her stomach and transverse colon.

Management and Outcomes: The first case was initially managed by restoring nutrition and deficiencies parenterally. Operative intervention was delayed because the patient initially declined. Over the next year, her nutritional stores were repleted, she stopped smoking, and her overall health improved. She was then taken to the operating room for laparoscopic takedown of the gastro-colonic fistula, excision of the Roux limb, restoration of physiologic anatomy, and feeding jejunostomy. Recovery was smooth and her diet was advanced with removal of her feeding tube. She has since had resolution of her symptoms. After diagnosis of the gastro-colonic fistula in the second case, an esophageal stent was placed endoscopically, traversing the gastric stenosis and excluding the fistula. With slow advancement of diet, the stent was removed with resolution of her fistula confirmed on UGI.

Discussion: These cases represent gastro-colonic fistulas as a complication of chronic marginal ulceration and multiple bariatric revisions. Complete symptom resolution was seen with restoration of physiologic anatomy, but this may lead to weight gain and return of prior comorbid conditions. Endoscopic stenting allows maintenance of a restrictive surgery for further facilitation of weight loss. However, the complete resolution of symptoms was prolonged in this case. Surgical correction and endoscopic stenting of gastro-colonic fistulas are effective treatment modalities of this rare complication.

A5101

BARBED SUTURE IN LAPAROSCOPIC GASTRIC BYPASS SAFE AND SHORTENS OPERATIVE TIME BY 15 %

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Background: During laparoscopic gastric bypass, barbed suture (e.g. V-loc ™) has been introduced when closing the defect after stapling the gastrojejunostomy. This reduces the need of intra-abdominal knot tying and reduces the need for constant tension on the suture from the assistant during suturing. The aim was to study if outcomes of surgeries performed with barbed sutures were different from procedures using conventional sutures (polyfilament) concerning operative time, leakage and stricture of the anastomosis.

Materials and methods: From the Scandinavian Obesity Registry 22514 patients (1837 with barbed suture and 20677 with polyfilament suture) were studied. No preoperative difference between groups was found regarding age or sex. The barbed suture group had lower BMI (41.6 kg/m^2 compared to 42.4 kg/m^2; $P<0.05$) whilst diabetes was more common in the conventional group (15,7% compared to 13,5%, $p<0.01$)

Results: The total operative time was 11 minutes (15%) shorter in the barbed suture group (60 minutes compared with 71 minute, $p<0.05$). No difference was observed regarding leakages (1.3%, 20 cases of 1657 compared with 1.0%, 202 cases of 19831, $p<0.47$) or stricture after 6 weeks (0.3 %, 2 cases of 1654 compared with 0.1 %, 56 cases of 19766, $p<0.22$).

Conclusion: The total operative time was 15% shorter using barbed suture and no difference was observed regarding the risk for leakage and stricture compared to conventional suture.

A5102

OMENTAL INFARCTION MASQUERADING AS ANASTOMOTIC STRICTURE

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Introduction: Gastric Bypass surgery is associated with distinct post-operative complications. A careful history and physical examination along with diagnostic imaging studies may lead to identification of these complications. A stricture at gastro-jejunal anastomosis is one of the known complications and usually presents with nausea, non-bilious emesis and may be associated with abdominal pain. On the other hand omental infarction is a rare incident after laparoscopic gastric bypass. There have been very few case reports of omental infarction occurring after laparoscopic gastric bypass using antecolic technique with longitudinal division of omentum and this typically presents as localized abdominal pain with no gastro-intestinal symptoms. We present a case of omental infarction which presented with significant gastrointestinal symptoms.
Case Presentation: Our patient is a 38 year old female with history of morbid obesity (BMI 45), GERD and underwent a laparoscopic gastric bypass 5 weeks before her presentation to emergency room with protracted nausea and emesis for last two days. Patient had minimal crampy ache in abdomen which she attributed to the constant wrenching and emesis. She did not have fever or other complaints. Emesis consisted of non-bilious mucous material in small amounts but very frequent intervals. She was afebrile with normal vital signs and was noted to have Potassium level of 3.0 meq/dL. A clinical suspicion for anastomotic stricture was raised. An UGI study showed delayed and only partial transit of contrast from gastric pouch and only in prone positioning of the patient and was interpreted as possible stricture at gastro-jejunal anastomosis. Patient underwent an EGD with intention to dilate the stricture however was noted to have no anatomical problems at the anastomosis. She subsequently underwent a CT scan of abdomen and pelvis which revealed 6x7 CM area of omental fat stranding consistent with omental infarction and no other abnormalities were noted. Patient was admitted for intravenous hydration and management of hypokalemia and recovered from this event without further issues.
Discussion: Spontaneous omental infarction is a benign condition with no clear etiology in most cases and presents with abdominal pain. Most of presentations are in Right lower abdomen and is thought secondary to omental vasculature being susceptible to ischemic insult in that location. Left sided omental infarction is very rare. There are only handful case reports of this complication after gastric bypass surgery specially using antecolic approach. However presentation in those reported cases consisted of localized abdominal pain. Our surgical technique consists of creating the jejunal anastomosis using linear stapler and making the gastrojejunostomy with 25/3.5 EEC stapler. We place our Roux limb in ante-colic, ante-gastric fashion and divide omentum at its center in longitudinal fashion to accommodate passage of the Roux limb without any tension. This particular patient was noted to have significant intra-abdominal fat and had bulky omentum which was divided in similar fashion as described earlier using The LigaSure Advance™ pistol grip (LF5544), Covidien. Patient presented 5 weeks after her gastric bypass with complaints of protracted nausea and non-bilious emesis for last few days with minimal abdominal discomfort. This particular patient presented with discrete gastrointestinal symptoms. Omental infarction is easily identified on CT scan. The condition is thought to be self-limited and a non-operative approach is recommended in cases which are not associated with complications like abscess or gangrene requiring drainage or resection of the affected omentum respectively.
Conclusion: Complications after gastric By Pass are not uncommon and are dreaded for their potential for devastating consequences however a benign condition like omental infarction can present masquerading as an obstructive process. We recommend considering a CT scan at an earlier stage if a reason for clinical presentation is not identified on UGI or endoscopy.

A5103

ROUX LIMB ISCHEMIA AFTER LAPAROSCOPIC ROUX-EN-Y GASTRIC BYPASS: A CASE REPORT

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Small bowel complications are a recognized complication after Roux-en-Y gastric bypass (RYGB). Although small bowel ischemia after RYGB is rare, it has been encountered more frequently as the number of bariatric procedures has increased. These cases may evolve towards serious complications and often need resection with challenging reconstruction of intestinal continuity. We present a patient with history of RYGB 15 years ago with a week history of nausea, vomiting and abdominal pain. Radiographic findings showed small bowel thickening. Esophagogastroscopy was performed revealing an ischemic Roux limb of the gastric bypass. Laparoscopy showed an antecolic Roux limb with no internal hernia, volvulus or intussusception. Gastrointestinal continuity was achieved by fashioning a new gastro-jejunostomy and a jejuno-jejunostomy, thus excising the entire ischemic Roux limb. With the increase in bariatric surgery, small bowel ischemia after Roux-en-Y gastric bypass will most likely become more prevalent. For a favorable outcome, it is crucial not to delay surgical exploration in any patient who has undergone a bariatric procedure.

A5104

SURGICAL MORBIDITY IN BARIATRIC SURGERY AND SIMULTANEOUS CHOLECYSTECTOMY

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Background: Cholelithiasis is a very common pathology in the Chilean population and is catalyzed by rapid weight loss, especially after bariatric surgery. Laparoscopic cholecystectomy is a safe technique but when is performed during bariatric surgery can increase surgical morbidity. The goal of this study is to report intraoperative (IO) and early postoperative (PO) complications when cholecystectomy is performed simultaneously with bariatric or metabolic surgery.
Methods: Retrospective study. We collect data from charts of 875 obese patients operated on bariatric surgery between January 2010 and December 2013. All patients who underwent cholecystectomy in the same procedure were included
Results: 71 patients met the inclusion criteria (8.1%), and 2.8% of them had some kind of IO complications and 1.4% PO complications. 1 patient presented biliary fistulae (1.4%), 1 patient hepatic bleeding (1.4%). These two patients had to have a reoperation. 3 patients had mild gastrointestinal bleeding (anastomosis from bariatric surgery bleeding). One patient had a segmental atelectasis as medical morbidity. 95.8% of patients had no complications at all and there was no mortality.
Conclusion: Cholecystectomy-related complications are low and should not preclude performing it together with bariatric surgery in our patients.

A5105

STRICTURE RATE OF GASTROJEJUNOSTOMY IN LAPAROSCOPIC ROUX-EN-Y GASTRIC BYPASS: COMPARISON OF 2 SURGICAL TECHNIQUES AND IMPACT OF DILATION ON WEIGHT LOSS

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Background: Laparoscopic Roux-en-Y Gastric Bypass (LRYGB) is one of the most common bariatric surgical procedures. Gastrojejunostomy (GJ) has the widest variation within the technical aspects of this operation. Despite the preferred technique, stricture of the GJ is a potential complication. The aims of this study were: 1) To analyze GJ stricture rate after hand-sewn anastomosis using 2 different surgical materials in a consecutive series of patients who underwent LRYGB at our institution and 2) to assess the impact of GJ dilation after 1-year on the postoperative weight loss.

Patients & Methods: The prospectively constructed database and the medical records of all patients undergoing a primary LRYGB by the same surgeon between March 2004 and May 2014 were reviewed. In all cases the GJ was constructed with a hand-sewn technique, using 4 running sutures in 2 layers. In the initial 472 patients, 3-0 silk was used for the external layer and 3-0 poliglactin for the internal layer. In the last 187 patients, 3-0 poliglecaprone was utilized for all layers. Included patients were divided into 3 groups for the analysis: Group A was constituted by the initial 285 patients in whom the combination of silk and poliglactin suture was utilized, Group B by the following 187 patients who underwent surgery using the same suture material and Group C by the 187 patients in whom poliglecaprone was incorporated into the technique. Stricture rate and response to endoscopic dilation were evaluated. One-year weight loss of the group of patients who presented GJ stricture and underwent endoscopic dilation was contrasted to those patients without stricture/dilation. Descriptive and inferential statistics were utilized for group comparison. Microsoft *Excel*© and *IBM® SPSS® Statistics version 20.0* were used for statistical analysis. Any p value *≤0.05* was considered as statistically significant for a two-tailed hypothesis.
Results: There were 372 women (56.4%) and 287 (43.6%) men with a mean±SD age of 39.9±11.6 years (range 16-76). Mean±SD BMI was 42.8±6.5 kg/m^2. There were 5 conversions to open surgery. GJ stenosis in the studied groups was found in 5.61% (16/285) of patients in group A, ($CI_{95\%}$ 3.4–8.9); 2.67% (5/187) in group B, ($CI_{95\%}$ 0.9–6.2) and in 0/187 of group C ($CI_{95\%}$ 0–2.4). The use of silk suture material in groups A/B, most likely conditioned a higher risk for GI stenosis when compared to absorbable suture material in group C (*Chi-square, p=0.01*, *OR 9.22 $IC_{95\%}$ 1.22-68.1)*. All strictures occurred within the first year after surgery and in 16 out of 21 patients (76.1%) the stenosis was developed within the initial 90 days. Mean±SD follow-up of the total group was 14.2±8.37 months. All strictures successfully responded after a single endoscopic dilation. One-year %EBWL of the group of patients with GJ strictures/dilation was 81.9±21% and without strictures/dilation was 82.2±29.4% (*Wilcoxon signed-rank test, p=ns*).
Conclusions: Based on our results the use of absorbable suture material led to a significant reduction in the number of GJ stenosis after LRYGB. Reduction in the stricture rate could not be explained by surgeon's experience or a steep learning curve. Endoscopic dilation of the GJ stricture was not associated to a lesser weight loss or % EBWL among compared groups.

A5107

INTRA-OPERATIVE UPPER ENDOSCOPY BY A SURGICAL PHYSICIAN ASSISTANT IN BARIATRIC SURGERY PATIENTS: RESULTS AND DESCRIPTION OF TRAINING PROTOCOL

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Introduction: Intra-operative upper endoscopy has become an important and invaluable adjunct in laparoscopic bariatric surgery. Depending on the practice setting and credentialling issues, intra-operative upper endoscopy is accomplished by fellows, residents, first assisting surgeons, and gastroenterologists. Flexible sigmoidoscopy by allied health personnel has recently been shown to be feasible and safe in the endosocpy suite setting (1). Nine years ago in a private practice setting, our surgical physician assistant was trained in intra-operative upper endoscopy. This practice was continued subsequently into an academic practice setting when endoscopic assistance from residents or others was not avaialble.
Methods: Operative notes and case logs from a prospective bariatric data base were reviewed. The number of successful and unsuccessful intubations of the esophagus and the stomach or gastrojejunostomy were recorded, as well as the complications and average time of intubation of either the distal sleeve or gastrojejunostomy. The intra-operative upper endosocpic technique protocol was adopted and modified from that used to teach MIS fellows at the Cleveland Clinic. This protocol is currently used to train residents in

intra-operative upper endosocpy in our tertiary medical center.
Results: 365 intra-operative upper endoscopies were attempted by a single physician assistant with extensive experience in open and laparoscopic bariatric surgery. 353 of 365 (96.7%) attempts were successful in intubating the distal antrum in sleeve gastrectomy cases or gastrojejunostomy in primary and revision roux en Y gastric bypass cases. There were no episodes of dental trauma, tracheal intubation, ET tube dislodgement, GE junction or gastrojejunostomy trauma. There were 6 cases (0.016%) of prolonged pharyngeal pain in the early post-operative period all of which resolved in the first week with conservative measures. Time to intubate the distal antrum or gastrojejunostomy was recorded in the last 75 cases and averaged 4 minutes. The technique utilized an approach similar to placing an oro-gastric tube. With the patient supine, the gastroscope is placed between the ET tube taped to the right of the patient's mouth and the left index finger of the endoscopist to the left of the patient's mouth. The left index finger guides the scope and lifts the base of the tongue to facilitate pharyngeal passage. Gentle pressure without direct visualization is used to advance the scope past the cricopharyngeus and the proximal esophagus is visualized and the scope is advanced under direct vision. Once the scope passes the GE junction, the laparoscopic view is specifically utilized to visualize and advance the scope so as to minimize stomach and jejunal insufflation. The same technique protocol has also facilitated our surgical resident's training in supine intra-operative endoscopy, as many residents find the transition from standard left decubitus endoscopy suite procedures to the intra-operative supine position challenging.
Conclusion: Intra-operative upper endoscopy in bariatric surgery by a trained surgical physician assistant, who is experienced in bariatric surgery, is feasible, effective and safe. This endoscopic technique protocol is currently used to train residents in intra-operative upper endosocpy in our tertiary medical center. 1. Day LW et al. Non-physician performance of lower and upper endoscopy: a systematic review and meta-analysis. Endoscopy 2014 46;401-10

A5108

PERFORATED PEPTIC ULCER OCCURRENCE IN THE BYPASSED STOMACH AND DUODENUM FOLLOWING ROUX-EN-Y GASTRIC BYPASS

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Background: While marginal ulcers are a well-known complication following Roux-en-Y gastric bypass, other areas of post-operative ulceration should also be considered. Specifically, published studies suggest rates of peptic ulcer perforation of the bypassed stomach or duodenum to be at least 0.26%. We have presented six such cases.
Methods: Over 3,200 laparoscopic Roux-en-Y gastric bypass operations from 2001-2014 were retrospectively reviewed. Ulcer locations were discovered via CT, and confirmed/repaired via laparoscopy or laparotomy. Modified Graham patch procedure was used for surgical treatment of each case.
Results: We identified perforated ulcers of the bypassed stomach and duodenum of six patients with a history of Roux-en-Y gastric bypass. Ages ranged from 46-59. Of these patients, 67% were female, 50% were using proton pump inhibitors, 33% were using NSAIDs, 33% had a history of previous peptic ulcer disease, and none were smokers. Time from bypass to ulcer diagnosis averaged 7 years. Presenting complaints included abdominal pain (100%), nausea (67%), vomiting (33%), shock (17%), and renal failure (17%). 83% were treated laparoscopically, and 17% via laparotomy.
Conclusion: The rate of post-operative perforated ulcer in the bypassed stomach and duodenum is at least 0.19%. Due to loss to follow up, however, many cases may not have been captured; thus, rates may be higher. Symptoms of a perforated peptic ulcer in the bypassed stomach or duodenum are similar to those encountered in a marginal ulcer. Such an ulcer should therefore be included in the differential diagnosis of an acute abdomen following Roux-en-Y gastric bypass. There is a

paucity of literature on the subject, and further research on this topic is warranted.

A5109

IS THE PREVALENCE OF LAPAROSCOPIC TROCAR SITE HERNIAS AS LOW AS REPORTED IN THE LITERATURE?

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Background: We have found a high prevalence of trocar site hernias during abdominal plastic surgery of patients that had previously undergone laparoscopic bariatric surgery, and our findings are in disagreement with reports in the literature.
Methods: This prevalence study included 40 consecutive patients that underwent abdominal plastic surgery from July 2006 to June 2010 and who had previously undergone bariatric surgery using laparoscopy only. We analyzed possible associations of the occurrence of laparoscopic trocar site hernias with sex, age, body mass index (BMI) before bariatric surgery and BMI at time of plastic surgery, as well as sensitivity and specificity of ultrasound examination of the abdominal wall and physical examination for abdominal pain or mass suggestive of laparoscopic trocar site hernias. **Results:** Of the 40 patients included in the study, 15 had laparoscopic trocar site hernias (prevalence=37.5%; 95%CI, 22.8 - 54.2). There was a significant association with age. The rates of sensitivity of abdominal wall ultrasound examination, pain at palpation and palpable mass suggestive of trocar site hernia were 20%, 40% and 13.3%.
Conclusions: Our study found a prevalence of laparoscopic trocar site hernias greater than the rates previously reported in the literature, as well as a significant association with age. Low sensitivity of the physical examination for pain and mass suggestive of hernia, as well as of ultrasound examination of the abdominal wall, may have contributed to the low rate of detection of laparoscopic trocar site hernias along the years. Further studies should be conducted to investigate other possible associations.

A5110

POSTOPERATIVE HEMOPERICARDIUM WITH TAMPONADE: HIGH INDEX OF SUSPICION FACILITATES EARLY DIAGNOSIS AND SUCCESSFUL NONOPERATIVE MANAGEMENT

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Intro: With the increased use of laparoscopic skills to address intraabdominal pathology, we must become familiar with the complications associated with these procedures. Although rare, there is a potential for a cardiac injury with peri-hiatal surgery and the use of tackers. Case **Description:** Presenting a 31-year-old female with a history of a Fobi pouch gastric bypass in 2003 that presented to us with recurrent morbid obesity. The patient underwent a laparoscopic distal gastric bypass with incidental hiatal hernia repair with mesh, which was secured using a laparoscopic tacking device. On POD1, the patient had clinical decline to include tachycardia, hypotension, and apnea. Work-up included an emergent bedside echocardiogram, which revealed a large pericardial effusion and tamponade physiology. The cardiac tamponade was urgently managed with percutaneous drain placement revealing a large hemopericardium that was related to the patient's procedure and hiatal hernia repair.
Discussion: During our literature review of hemopericardium related to hiatal hernia procedures, we found that this complication is rare and not well reported. Many of the studies specifically name tacking devices and sutures as

the cause of cardiac injury. After review of the literature, we identified 17 cases of cardiac injury. Over 50% of these resulted in death and were identified post-mortem. All of these patients were found to rapidly decompensate and many of the studies conclude that heightened awareness is the key to patient survival. We also reviewed the literature regarding treatment of traumatic hemopericardium resulting in cardiac tamponade. Recent trauma literature has described managing these patients with percutaneous drain placement alone vs. traditional median sternotomy or thoracotomy and suggests similar lower mortality outcomes and lower morbidity. Our case is the first to describe managing a traumatic hemopericardium from mediastinal dissection and suture/tack placement with percutaneous drain alone.
Conclusion: Surgeons should have a high index of suspicion for cardiac injury in unstable patients that recently underwent hiatal hernia dissection and repair. Immediate evaluation with echocardiogram and prompt treatment can prevent catastrophic outcomes. In select cases, these complications can be managed without open cardiac surgery.

A5111

CATASTROPHIC UGI BLEED IN GASTRIC BYPASS PATIENTS FROM ULCER EROSION INTO THE SPLENIC ARTERY: DETAILS OF RAPID SURGICAL TREATMENT

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Introduction: Ulcer disease continues to be a long term concern in RNY gastric bypass patients, mostly due to patients recurrent use of NSAID's and tobacco (1). The majority of marginal ulcer disease cases are treatable by proton pump inhibitors, sulcralfate and patient counselling (2). In the case of significant gastric pouch/marginal ulcer bleeding, standard endoscopic hemostatic techniques are the first line of therapy (2). Angiographic hemostatic techniques have also been utilized. We report 2 cases of gastric bypass patients who had catastrophic bleeding events from marginal ulcer and gastric pouch ulcer erosion into the proximal splenic artery where endoscopic therapy failed and urgent surgery was necessary due to patient instability.
Methods: Chart review was performed from a prospective bariatric database at a tertiary medical center. Specific operative maneuvers are described that were required for control of the massive hemorrhage from the proximal splenic artery. These included: the Veith maneuver for supra-celiac aortic control modified for the gastric bypass patient, intra-luminal access to the splenic artery, endoscopic aided visualization of the splenic artery bleeding site, and damage control delayed reconstruction
Results: Both patients survived despite massive transfusion requirements and prolonged hospitalization. Patient 1 underwent 3 operations; the first was oversewing of the splenic artery, then abdominal washout, followed by delayed reconstruction with gastric pouch resection and esophago-jejunostomy reconstruction. Distal enteral feeding access and delayed abdominal wall closure were performed as well. Patient 2 had severe subhepatic adhesions to the gastric pouch from an open non-divided gastric bypass in the early nineties. This patient underwent 5 procedures as she required additional second look operations for a bile leak, which healed conservatively, and a partial colectomy was required as well. Patient 2 was similarly reconstructed with gastric pouch resection and esophago-jejunostomy. A leak at the esophago-jejunostomy was treated with a stent. Both patients survived and were discharged to home after rehab. Both patients retained their spleens, although Patient 2 did suffer multiple splenic infarcts and was immunized.
Conclusion: Although rare, massive UGI bleeding from ulcer erosion into the proximal splenic artery in the gastric bypass patient may require urgent and specific surgical therapy. Strong consideration shoud be given to interventional radiographic angiography for recurrent or intitial severe UGI bleeds in gastric bypass patients, which is a protocol we have

now instituted. Operative intervention may be necessary if angiography fails or is not readily available (3). The bariatric and acute care surgeon should have a working knowledge of approaches to this particular life-threatening scenario. 1. Marginal ulcer after RNY gastric bypass: what have we learned. El-Hayek K, Chand B et al. Surg Endosc 2012 26(10):2789-96 2. Marginal ulceration after RNY gastric bypass surgery: characteristics, risk factors, treatment and outcomes. Azagury D, Thompson CC et al. Endosocpy 2011 43(11): 950-4 3. Catastrophic bleeding from a marginal ulcer after gastric bypass. Sidani S; Akkary E; Bell R. JSLS 2013 17(1): 148-51

A5113

LAPAROSCOPIC REMOVAL OF A NON-ADJUSTABLE GASTRIC BAND: TIPS, TRICKS AND PITFALLS

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Background: Non-adjustable gastric banding (NAGB) using prosthetic material is a procedure that was originally performed in the United States in large numbers using an open access technique. Dr. Marcel Molina pioneered this early and innovative procedure in 1980 and over the subsequent decade, it is estimated over 7,000 were placed. The short term safety and weight loss results were excellent but the long term outcomes were spoiled by weight loss failures and complications. The operation was all but abandoned within a decade of its inception. This is a case report of a patient who underwent placement of a NAGB in a foreign country in 2013, her subsequent clinical course, and ultimately the removal of her band under laparoscopic access.

Case Presentation: A 20 year old female presented to our center with complaints of excessive weight loss, vomiting, weakness and syncope. She noted over the last three weeks complete solid and liquid intolerance and had begun to experience saliva intolerance over the last few days. She had undergone what she believed to be a Laparoscopic Adjutable Gastric Band procedure in 2013 outside of the US for cash pay. At the time she had a weight of 340 pounds. At presentation she had lost weight down to 135 pounds. She had multiple recent emergency room visits for her complaints and had been found to have severe hypokalemia, hypoalbuminemia, and clinically significant dehydration. She had undergone upper endoscopy, multiple imagaing test and various work ups and medical attempts at providing her relief without success. Significant findings on physical exam included temporal wasting, positive orthostatic vital signs, dry mucous membranes, a tender mid-epigastrum and a small upper vertical midline incision that was well healed without any evidence of any laparoscopic scars elsewhere on her abdomen. Notably absent was any subcutanous port to adjust her gastric band. Her radiologic imaging demonstrated an enlarged and moderately sigmoid esophagus with a symmetrically dilated gastric pouch above a radiodense gastric band without tubing or mediport noted. Strikingly, their was a complete obstruction at the level of the band despite delayed images over many hours. She was volume resucitated and had electrolyte correction performed over three days as an inpatient and then underwent exploratory laparoscopy. Their was a near 90 degree angulation of the proximal stomach at the level of the band due to adhesion and erosion of the band into the liver in the region of segment 3. This was lysed using hook cautery. Hook cautery was then used to free the dense psuedo capsule on the anterior aspect of the band and the band itself was partially exposed. We found the band had been sutured in multiple locations using non-absorbable suture to the stomach and these sutures had to be cut to both transect and remove the band from the underlying stomach. The band was removed in its entirety. We then placed absorbable sutures to close over the psuedocapsule as the band itself had appeared to begin to erode into the serosa of the stomach. Their were no complications and the patient was discharged the following day, able to eat, drink and symptom free.

Technical Points: Attempts were made to obtain prior records but this proved impossible, though attempts to obtain prior records should

be made. Imaging merely showed a foreign body at the high stomach and did not allow us to determine the exact nature of the implant, though pre-operative imaging is important when the history is complex. Fortunately, we were able to remove this band laparoscopically without complication for this patient despite these pitfalls. In our experience of reversing both vertical banded gastroplasty and laparoscopic adjustable gastric banding we have learned a number of important technical points and were able to apply that knowledge in this case. The pre-operative upper endoscopy was helpful in that it ruled out full thickness band erosion. Additionally, intra-operative inspection of the band itself showed it to have no discoloration from gastric juice staining as we have seen in other cases of band erosions. We felt that closure of the anterior psuedo capsule with absorbable suture would provide an added level of safety as the gastric serosa appeared to be missing, possibly from the early stages of band erosion. We advise only bariatric surgeons experienced in advanced revisional procedures to attempt to remove non-adjustable gastric bands as more involved operations may be required depending on the circumstances.
Figures: Full color images will be provided with a poster presentation if accepted to the meeting.

A5114

A CASE OF METABOLIC ALKALOSIS AND HYPOKALEMIA AFTER INSERTION OF AN INTRA-GASTRIC BALLOON FOR TREATMENT OF MORBID OBESITY.

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Introduction: Since its inception and first use in 1982, intra-gastric balloons have emerged as a reasonable non-invasive and cost effective alternative in the treatment of morbid obesity. By pre-loading the stomach and reducing the effective gastric volume, the presence of this device translates in decreased appetite and food intake, leading to weight loss.
Presentation of case: A 41-year-old morbidly obese Hispanic female patient presented to our emergency department with persistent vomiting, muscle cramps and generalized weakness with severe metabolic derangements. She had undergone endoscopic placement of an intra-gastric balloon five months prior to presentation at a foreign outside hospital and reportedly had persistent emesis after every meal since the placement. Abdominal X-rays were obtained and showed a curvilinear density reflecting the contours of the balloon within the stomach **(figure 1)**. The balloon was endoscopically removed after she was resuscitated. The patient's symptoms resolved.
Discussion: Currently there is no intra-gastric balloon that is approved by the FDA for the treatment of morbid obesity, however this could change in the near future. As one might expect severe metabolic derangements can ensue as the result of persistent vomiting and intolerance to the device. Obstructive complications more often occur after deflation and distal migration of the balloon; however balloon overfilling and/or intolerance may result in the same complications.
Conclusion: Balloon intolerance should be identified as soon as it develops and render the provider to strongly consider retrieval before life-threatening events.

TOPIC: EMERGING MEDICAL TECHNOLOGIES

A5115

BARIATRIC ENDOSCOPIC PREOPERATIVE FINDINGS: THE IMPORTANCE: THE NECESSITY: OUR EXPERIENCE 1767 PATIENT META-ANALYSIS

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Background: Over the past decade bariatric surgery gained the limelight as a premier form of permanency with respect to weight

loss. Today, nearly 30% of the worlds' population is considered mildly and/or morbidly obese. Consequently, several surgical procedures were developed to alleviate the worldwide obesity epidemic. The most common of these procedures include, Longitudinal Sleeve Gastrectomy (LSG), Roux-en-Y gastric bypass (RYGB), and Gastric banding (GB). Each with its varying levels of efficacy, every bariatric procedure is not a viable option for all patients. Although the following procedures have different approaches to weightloss, whether restrictive or malabsorptive, all patients should receive a diagnostic endoscopy for the purpose of preoperative clearance**.** The following review discusses the incidental findings, the benefits, and the necessity for preoperative endoscopic exploration in bariatric patients.
Methods: The following study consists of one thousand-seven-hundred-sixty-seven (n=1,767) bariatric patients (Male=759, Female=1,008) with ages ranging from 16-59 years of age who

received various bariatric procedures. All preoperative EGD studies were compiled and analyzed for abnormalities. All patients received weight check, blood workup and general examination pre-operatively and post operatively at 1 week, 1 month, 3 month, 6 months and 1 year. All patients were enrolled in Bariatric/Metabolic Center of Excellence at RWJUH and subject to all requirements including nutrition, exercise, and support group regimens. Patients were accessed for excess weight loss, resolution of comorbidities, complications, vitamin deficiencies, and general quality of life postoperatively.
Results: Total Rate incidental Endoscopic Preoperative Finding 21.4% Gastric Ulcer non specific= 1.64% Barrets Esophagus= 0.73% Gastric Cancer= 0.90% Hiatial Hernia= 7.84% Diverculitus= 1.52% Polyp growth benign= 7.01% IBD due to Ulcerative Colitis: 0.74% IBD due to Crohns Disease: 1.02%
Conclusions: Preoperative endoscopy has particular risks and benefits that must be accounted for when exploring prospecting bariatric patients. As such, reasonable guidelines such as preoperative endoscopy are necessary to ensure successful/safe weight loss in operative bariatric patients.

A5116

A NOVEL METHOD FOR MEASURING THE CROSS SECTIONAL AREA OF AND FLOW RATE THROUGH THE UPPER GASTROINTESTINAL TRACK: A FEASIBILITY STUDY

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Introduction: Ascertaining the success of metabolic/bariatric surgery and other gastrointestinal procedures, as well as modifying their dynamics, today lacks noninvasive, accurate, and objective assessment technology. The feasibility of a method for non-invasively measuring cross-sectional area of and flow through a restricted viscus is described. With the popularity of sleeve gastrectomy and the not uncommon finding of postoperative eating difficulties, use of this device is highly appropriate
Methods: The device consists of a coil of multiple layers of wire placed around the point of interest, not dissimilar to a hoop, and measuring the change in resonance frequency of a series circuit (capacitor, inductor, and resistor) when changing induction parameters after oral administration of a non-reactive paramagnetic substance. For feasibility testing of the system, we constructed a simulator apparatus consisting of a 52" circumference, 2-chambered cylinder, for use with a large coil, as well as a small coil and test tube, to assess the magnetic permeability compared to air of three paramagnetic substances – iron filings, Ferrite 75, and Ferrite 78.
Results: Multiple repetitive testing in five protocol experiments demonstrated equivalent frequency deviation for the three test substances; readily measurable sensitivity of deviation of the resonance frequency for each substance, with increased sensitivity when using the small coil and tube; and no interference in measurements by filling the large simulator with lactated Ringer's to represent body tissue density.
Conclusion: This successful feasibility study serves as a stimulus to proceed to human testing.

A5117

DOUBLE BALLOON ENTEROSCOPY REDUCES RE-OPERATION RATE AND MORBIDITY IN SELECTED CASES OF SMALL BOWEL OBSTRUCTION AFTER ROUX-EN-Y GASTRIC BYPASS

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Double balloon enteroscopy is a novel technique available only in few centers but is a powerful modality useful to treat selected obstructive complications of Roux-en-Y gastric bypass. We present a case series where double balloon enteroscopy prevented emergent re-operation and therefore minimized the morbidity of small bowel obstruction.

1. A middle aged male underwent a laparoscopic RYGB and on the first postoperative day developed abdominal pain followed by bilious drainage from his JP drain. CT scan of the abdomen showed evidence of hemorrhage into the bypassed stomach and obstruction at the jejuno-jenunostomy and pylorus by large clots, and a small and contained staple line dehiscence of the bypassed stomach. The JP drain along with antibiotics controlled the staple line dehiscence. Double balloon enteroscopy was used to dislodge the clots from the jejuno-jenunostomy and the pylorus and also confirmed that there was no active bleeding. Patient was discharged on a full liquid diet and the JP drain was removed 3 weeks later, while re-operation was entirely avoided.
2. A middle aged male presented with small bowel obstruction a few years after laparoscopic Roux-en-Y gastric bypass, with CT scan showing a cut off at the level of the jejuno-jenunostomy associated with acute dilatation of the bypassed stomach and bilio-pancreatic limb. We treated the small bowel obstruction with percutaneous insertion of a pigtail catheter into the bypassed stomach (by Interventional Radiology) to decompress the bilio-pancreatic segment. This was followed by double balloon enteroscopy to dilate the jejuno-jenunostomy. Patient was discharged home tolerating a full liquid diet and the pigtail drain was removed a few weeks later, after a contrast study confirmed the jejuno-jenunostomy was patent. Emergent re-operation in the presence of dilated and edematous bowel was therefore avoided.
3. A middle aged female with previous open Roux-en-Y gastric bypass and ventral hernia repair with a large mesh came with small bowel obstruction where CT scan showed a kink in the deep pelvis with common channel and biliopancreatic limb dilatation. Percutaneous pigtail catheter into the bypassed stomach decompressed the small bowel obstruction and Double balloon enteroscopy from below and above rectified the kink, allowing discharge home tolerating bariatric diet. In this case a complex open reoperation in the presence of a mesh was completely avoided.

Double balloon enteroscopy uses two balloons to curtain the small bowel into a shorter length to allow the endoscope to reach extreme distances within the bowel lumen to treat clinical conditions. Its use in the treatment of small bowel obstruction after Roux-en-Y gastric bypass in bariatric surgery is limited. We present three cases where double balloon enteroscopy prevented the need for emergent re-operation and therefore limited the morbidity. We conclude that in selected cases double balloon enteroscopy, sometimes in conjunction with percutaneous drainage of the bypassed stomach by interventional radiology, can be employed to relieve small bowel obstruction and therefore prevent the need for re-operation. At a time when clinical program accreditation, quality improvement, and cost of healthcare take into count re-operation rates, novel methods to reduce the need for re-operation are valuable especially if they also

benefit the patient with reduced morbidity and risk.

A5118

ENDOBARRIER AS A PRE BARIATRIC SURGICAL INTERVENTION IN HIGH RISK PATIENTS

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Background: Obesity surgery mortality risk scoring system (OMRS) classifies patients into high, intermediate and low risk; based on age, body mass index, sex and other co morbidities such as hypertension and history of pulmonary embolism. High risk patients not only have a higher mortality, but are more likely to develop post-operative complications necessitating intervention or prolonged hospital stay following bariatric surgery. Endoscopically placed duodenal-jejunal bypass sleeve (EndoBarrier Gastrointestinal Liner) has been designed to achieve weight loss in morbidly obese patients with clinically proven effectiveness. The aim of this study was to assess if pre-operative endobarrier insertion decreases morbidity and length of stay after bariatric surgery.
Methods: Between 2012- 2014, a cohort of 7 high risk patients had an EndoBarrier inserted (ENB Group) for one year prior to definitive bariatric surgery. These patients were matched with a group undergoing primary bariatric surgery (PBS). The two groups were matched for age, sex, body mass index, comorbities, surgical procedure and OMRS. Outcome measures included operative time, morbidity, length of stay, ITU stay, readmission rate and percentage excess weight loss.
Results: Patient characteristics were similar in both ENB Group and PBS Groups; age (median 46 vs. 46), BMI (median 64 vs. 56 kg/m^2), co morbidities (medians 4 vs. 3), OMRS (median 4 vs. 4). There was no significant difference in operative time, ITU stay, readmission rate, and percentage excess weight loss. Median hospital stay was significantly less in ENB group (4 days, range 3-10 days, vs. 7days, range 4-38days, $p<0.05$). Post- operative complications were significantly less in ENB group (0/7, BS group=5/7,$p<0.05$)
Conclusion: EndoBarrier should be considered as a pre bariatric surgical intervention in high risk patients. It results in decreased overall length of stay and post-operative complications

A5119

OUTPATIENT TREATMENT FOR LEAKS USING LAPAROSCOPIC FEEDING TUBE, A LOW COST, SAFE AND EFFECTIVE METHOD

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Standardised and safe treatment of leaks complicating bariatric surgery remains the Holy Grail that most bariatric surgeons seek. We looked back at our thirteen years of experience, with over 3000 bariatric surgeries performed we had a total of 8 leaks. We discuss the evolution of the tools at hand as well as that of our management over the years. Of the 8 leaks we had one mortality. Two cases : one sleeve, one bypass were treated with drainage and stent placement, their course was complicated with frequent esophageal spasms and stent migration, but their leak finally resolved and the stent was removed after 4-6 weeks. Two other sleeve gastrectomy cases were treated by drainage and nasoduodenal tube placement for feeding. Mean hospital stay was 5.5 weeks. One of them re-leaked after nasoduodenal tube removal and an Ovesco clip had to be placed. Eventually they both healed. One sleeve case was treated with drainage and stent placement, the latter failed to cover the leak site and was deemed a failure after 3 weeks. We opted to feed the patient through a large diameter 24 French feeding jejunostomy and removed the stent. He was discharged as soon as he taught himself how to use the feeding jejunostomy (Day 4) with bolus feeds and was discharged home and showed to his follow ups. He is now leak free, and jejunostomy was removed in the OPD. For our two latest leak cases, we directly opted for drainage and a feeding tube : A jejunostomy in the case of the sleeve, and feeding gastrostomy in the mother stomach in the case of the Roux-Y

gastric bypass, both patients did well and were discharged on day 4. They showed up for their weekly visits and on week three after a negative gastrographin study, oral feeding was started.Over two weeks the feeding jejunostomy then drain were both removed. Seven of the eight leaks were revision cases, with the last one being a third revision of an open vertical banded gastroplasty to a Roux-Y bypass and finally a laparoscopic sleeving of the gastrojejunostomy and gastric pouch in our hands. In all our stent cases, the stent itself was poorly tolerated by the patient and increased the cost of the operation substantially, as well as the hospital stay when it was complicated. For the Nasoduodenal tube management patient had to be hospitalised for at least 5 weeks which carried a huge psychological burden on the patients, increased cost and progressive poor tolerance of the nasoduodenal tube. Many methods have been suggested to treat leaks and subsequently abscess post bariatric surgeries, but the basic principle remains the same : Drain, exclude the leaking area and provide nutritional support. Abscess drainage along with a large bore feeding tube (jejunostomy or gastrostomy in the unused stomach) fulfils this principle. Patients are taught how to bolus feed themselves at home and are discharged early and managed as outpatient cases, avoiding stent complications and reducing significantly the cost of their treatment as well as the psychological burden of the nasoduodenal tube and the prolonged admission required with it.

A5120

REFLUX, BARRETT'S ESOPHAGUS & BARIATRIC SURGERY: WORKING TOWARDS A CLINICAL PATHWAY FOR THE MANAGEMENT OF A PRE-CANCEROUS CONDITION IN BARIATRIC SURGERY PATIENTS.

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Introduction: Gastro-esophageal reflux is common in morbidly obese/bariatric surgery patients, and reflux esophagitis has been shown to instigate esophageal metaplasia, dysplasia, Barrett's esophagus, and even cancer.[1-5] Nevertheless, to date there are no specific recommendations for the management of morbidly obese/bariatric surgery patients with gastro-esophageal reflux and/or Barrett's esophagus.

Methods: Since 2013, patients undergoing evaluation at a tertiary, bariatric surgery center underwent endoscopic evaluation performed by the bariatric surgeon. Patients identified with esophageal reflux on endoscopy received mucosal biopsies of the gastro-esophageal (GE) junction. Those found to have histologic findings consistent with Barrett's esophagus underwent BARRX® radio-frequency ablation (RFA) therapy of the GE junction in conjunction with Roux-en-Y Gastric Bypass (RYGB).

Results: Ten patients (7 females, 3 males) with an average age of 50.5 and average body mass index of 43.8 kg/m^2 were found to have histologic evidence of Barrett's esophagus. Seven patients received endoscopic RFA therapy in conjunction with their primary bariatric operation, while 3 patients had prior bariatric surgery history (range 6 months-5 years) and received RFA therapy independent of their primary bariatric procedure. All patients were successfully treated with endoscopic RFA therapy, and there were no complications. Three patients completed a full course of RFA therapy (2-3 cycles) and underwent repeat biopsy of the GE junction to confirm normalization of esophageal mucosa on histology. All patients receiving simultaneous RFA therapy & bariatric surgery enjoyed significant weight loss and anticipated resolution of comorbid diseases typical of bariatric surgery patients.

Discussion: Barrett's esophagus is a pre-cancerous condition that may not be adequately addressed in the bariatric population. Preoperative endoscopic evaluation with mucosal biopsy of the GE junction can reveal significant findings of reflux esophagitis and Barrett's esophagus, but careful attention must be paid to identify this pre-cancerous condition during endoscopy. RFA therapy in combination with RYGB is an effective and safe treatment for morbidly obese/bariatric surgery patients with this disease process.

A5121

ENDOSCOPIC RETRIEVAL DEVICE

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Objective of the device: The current invention relates to a device used via an upper gastro-endoscope to be used as a retrieval device for foreign matters particularly organic in nature, within the esophagus/upper Gastrointestinal tract, could provide a better grip in comparison to other devices, minimizing the number of attempts and avoid pushing the matter distally that may cause potential harm.
Description of the Device and Application: The invention discloses a new retrieval device for foreign matters impacted in the esophagus/upper gastrointestinal tract. The inventive device comprises a sheath, a wide bore hollow needle with beveled tip, a pliable wire/shank with a deployable hook (or hooks) at the distal end, whereas the wide bore hollow needle is enclosed within the sheath and can be extended to penetrate (fully or half-way fig B) the foreign matter, and the wire/shank is enclosed in the hollow needle, upon the needle reaching the desired penetration in the foreign object, the hook(s) can be deployed/sprung out to grab the foreign object. Various designs of the deployable hook may be employed. The inventive device can be employed through the working channel of an upper GI endoscopy.
Detailed description of invention The invention discloses a new device working with an existing upper GI scope to retrieve foreign object in the esophagus/upper gastrointestinal tract. As shown in the figure which illustrates the general retrieval procedures using the inventive device. As shown in fig. (A), the scope, **6**, is placed near proximal to the foreign object, **7**; the device comprising a sheath, **2**, a wide bore hollow needle with beveled sharp tip, **3**, and a shank with deployable hooks is inserted through the scope channel; the hollow needle, **3**, is pushed further so that its tip penetrates/pierces through the foreign object, **7**; the shank, **4**, with a deployable hook, **5**, is passed through the hollow needle, **3**, and the hook(s), **5**, then deployed to grip the foreign object; when the scope along with the device is withdrawn back, the hook(s),grip(s) the foreign object and retrieves the object from the upper gastrointestinal tract under vision.
Preliminary results After obtaining a provisional patent, the project is in the marketing process through the office of Technology management and industry relations at university of Missouri in Columbia and no practical implementation has yet been achieved and pending prototype production.
Conclusion and Future direction: A retrieval device with a better grip with safe implementation and less number of endoscopic and piece meal retrieval attempts would be the appropriate way to go which I believe that such a device being unique in penetrating the foreign matter, may fulfill these needs in experienced hands and avoid pushing the impacted matter towards the distally which can cause potential harms, yet more studies need to be done to achieve such
goals

A5122
ROUX-EN-Y GASTRIC BYPASS FOR REFRACTORY GASTROPARESIS – EFFECTS ON A NON-OBESE PATIENT

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Introduction: Refractory gastroparesis is a debilitating disease process in which patients typically suffer from chronic abdominal pain, nausea, vomiting, malnutrition, and weight loss. If medical management is unsuccessful, surgical interventions include pyloromyotomy or pyloroplasty, gastric neurostimulator placement, feeding tube placement, and gastrectomy. Although roughly 30% of gastroparesis patients are diabetic, few are offered Roux-en-Y gastric bypass (RYGB) as a treatment option due to their low BMI stemming from their gastroparesis-inflicted weight loss. After thorough review of the literature, RYGB for refractory gastroparesis has only been previously described in the obese population.

We further describe the novel utilization of RYGB for gastroparesis in a normal BMI, diabetic patient.

Case report: We report a 54-year-old male with a BMI of 23 kg/m^2 with a history of insulin dependent type 2 diabetes mellitus, gastroparesis, peripheral neuropathy and hepatitis C who suffered from post-prandial nausea and vomiting, early satiety, and bloating. The patient had lost approximately 40 pounds in the past year secondary to symptoms of gastroparesis, which was diagnosed approximately five years prior. Despite medical management, he developed gradual progression and increased frequency of symptoms. He was on four times daily dosing of metoclopramide in addition to insulin. Both endoscopic pyloric balloon dilation and laparoscopic gastric pacemaker placement were also performed, with no lasting symptomatic relief. The patient's blood glucose levels during this time period fluctuated between 130 and 370 mg/dL, and his hemoglobin A1c prior to surgical evaluation was 7.7%. The option of RYGB was discussed and performed. This not only provided relief of his symptoms of gastroparesis but also allowed for improved blood glucose level control, without any further complications reported. He has maintained his weight and resolution of symptoms at six months follow up.

Discussion: Bariatric surgery has been successful in the obese population not only because of weight loss but also due to its dramatic effect and often times resolution of patient comorbidities. Patients and physicians have observed improvement in insulin sensitivity and blood glucose control in as few as two days postoperatively. Long-term data suggests RYGB is just as successful with blood glucose control in patients with a lower, less severe BMI than those with a markedly elevated BMI. Whether the success of RYGB will translate to patients with refractory gastroparesis and essentially normal BMI levels remains to be seen. Though a previous series of cases utilizing the sleeve gastrectomy as a successful treatment option for gastroparesis has been documented, others argue that the anatomical nature of this method may leave the patient with postoperative gastroesophageal reflux disease (GERD). While sleeve gastrectomy has similar success rates with improvement in diabetes postoperatively as RYGB, the newest long-term outcome data from the STAMPEDE Trial suggests that RYGB is a superior option in regards to insulin sensitivity and glucose control. This case is a prime example of the potential for RYGB as a successful alternative for normal BMI, diabetic patients with refractory gastroparesis not otherwise controlled by medical management or other surgical and endoscopic techniques.

A5123

NOVEL APPROACH FOR CREATION OF A NON-SPIRALED AND CONSISTENT SLEEVE GASTRECTOMY

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During the Laparoscopic Sleeve Gastrectomy procedure there is the potential for spiraling of the stomach (figure 1). Spiraling occurs when there is uneven traction placed on either the anterior or posterior stomach wall during stapling. More severe spiraling may lead to obstructive symptoms, prolonged nausea, and delayed ability to tolerate liquids. The current technique of using a solid bougie as a guide to creating the sleeve gastrectomy can lead to variability depending on how the surgeon placed the bougie against the lesser curvature. In order to minimize spiraling and to create greater consistency of the sleeve gastrectomy we have started using the GastriSail™ device (figure 2a, 2b, 2c). To date, we have completed 36 consecutive Laparoscopic Sleeve Gastrectomy cases using the GastriSail™ device. The GastriSail™ device consists of a perforated hollow bougie that has an extendable "sail" component which, when deployed, allows for the alignment of the anterior and posterior walls of the stomach. As the "sail" component is deployed, the bougie aspect of the product is pushed towards the lesser curvature of the stomach where it is then stabilized by applying suction. The GastriSail™ device has a series of LED lights that highlight the bougie through thick stomach tissue and serve as a guide for the surgeon in creating the sleeve. In each of the 36 consecutive cases using the GastriSail™ device, it was easily placed and deployed as per

manufacturers recommendations by the anesthesiologist. In each case, the bougie was displaced towards the lesser curvature and suction stabilization of the stomach was maintained throughout the stapling procedure. LED lights were visualized through the stomach on each case. During leak testing with air insufflation no leaks were noted. Inflation and examination of the remnant stomach revealed no spiraling in any of the remnant stomachs (figure 3). Overall, there was a trend towards reduced operative time. In conclusion, having the bougie automatically positioned by the GastriSail™ device and having suction stabilization along with LED light visualization may decrease the spiraling of the stomach and increase the consistency of the sleeve gastrectomy procedure. Further research will focus on objective measurements of the sleeve gastrectomy size and consistency using the EndoFLIP® (Crospons, Galway, Ireland) device. Results will be compared to sleeve gastrectomy created using standard solid bougie and suction bougie techniques.
Figures 1, 2a, 2b, 2c, 3

TOPIC: EPIDEMIOLOGY/PHYSIOLOGY

A5124
OUTCOMES OF BARIATRIC SURGERY IN PATIENTS OVER 65 YEARS OF AGE

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Background: The aim of our study is to report the outcomes of bariatric surgery in patients over 65 years of age at our Institution.
Methods: A retrospective review was performed of a prospectively collected database consisting of all patients who have undergone a bariatric surgery at our institution from December 2010 to November 2014. The data analyzed included age, preoperative body mass index, post-operative complications, and comorbidities.
Results: In the population studied 981 were less than 65 and 158 were older than 65 years of age. Of these patients there was a significant difference in the gender ratio, 42% of the >65 were males in comparison to 31% males in the under 65 group (p= 0.004) Also there was a difference in the race, although in both groups Caucasian were the majority of our patients they represented 52% of the under 65 population but 85% of the over 65 population (p<0.001). Elderly patients moreover are operated on starting on a lower BMI (Mean=39) than younger patients (Mean=42) (p<0.001).
In the >65 group there were a higher incidence of comorbidities was found when compared to the <65 group. In particular the statistically significant differences were in Hypertension (p<0.001), Sleep apnea (p<0.001), CAD (p<0.001), Heart failure (p< 0.001), Myocardial infarction (p< 0.001), Diabetes II (p=0.035), Dyslipidemia (p<0.001), Hyperlipidemia (p<0.001) and Hypercholesterolemia (p<0.001). No difference however was found in the presence of GERD (p=0.051) or history of DVT/PE (p=0.2) When the rate of each procedure was analyzed (LSG, LRYGB, LGB, Revisions) significant difference was found as in the >65 group 22% of them underwent revisional surgery when compared to 14 % for <65 (p=0.017). Also, elderly patients stayed on average one day more after their surgery (LOS=3days, p=0.037) But no significant difference was found in the rate of readmission (p=0.7) Regarding postsurgical complications there were no significant difference in the incidence of wound infection (p=0.28), obstruction (p=0.24), jejunal ulcer (p=0.69), gastric ulcer (p=0.15), nausea (p=0.49), vomiting (p=0.18), diarrhea (p=0.2), abscess (p=0.5), dehydration (p=0.68) and new GERD

(p=0.4). Only the incidence of fistulas was higher in the >65 group (4% vs 2%) (p=0.039)
Conclusion: Elderly patients present for surgery significantly sicker in terms of comorbidities than the younger population. However age seems to represent no risk for surgical complications after a bariatric surgery making these procedures a safe weight loss strategy for our aged population.

A5125
BARIATRIC SURGERY IN THE ELDERLY: A SYSTEMATIC REVIEW
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Background. Bariatric Surgery is the only proven treatment modality for severe obesity. With obesity rates on the rise worldwide, the incidence of obesity in the elderly has also risen. Most bariatric surgeons are hesitant to operate on patients older than 65 years of age due to potential increased morbidity and mortality in this age cohort. The aim of this systematic review was to review the literature in reference to the efficacy and safety of bariatric surgery on the elderly patient.
Methods. A comprehensive search of electronic databases (e.g., MEDLINE, EMBASE, SCOPUS, Web of science and the Cochrane Library) using search terms "gastric bypass, elderly" was completed. All randomized controlled trials, non-randomized comparison study, case series were included. Two independently reviewers screened abstracts, reviewed full text versions of all studies classified and extracted data. The data was limited to include only gastric bypass patients over the age of 65 years.
Results. Eight primary studies (1835 patients) were included in this review; all of which were case series. Mean age was 67.56 years and mean pre-operative BMI was 44.2 kg/m^2 . Mean excess weight loss at 6 months, 12 months, and study endpoint was 64.7%, 68.9%, and 66.2% respectively. The mean total post-operative complication rate was 21.1%, with wound infections being the most common (7.58%) followed by cardiorespiratory complications (3.3%) and post-operative bleeding (2.43%). Mean 30-day mortality was 1.15%.
Conclusion. Bariatric Surgery is effective in producing marked weight loss in >65, elderly patients, with acceptable post-operative complication rates.

A5126
A SINGLE INSTITUTION 10-YEAR FOLLOW-UP OF GASTROPARESIS MANAGED BY IMPLANTABLE GASTRIC STIMULATORS AND GASTRIC BYPASS
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Background: Gastroparesis is generally managed by medical therapy. When surgical modalities are considered, there is still great debate on surgical approaches and their long-term outcomes. The aim of this study is to present our long-term experience of laparoscopic gastric bypass (LRYGP) and gastric electrical stimulators (GES) as surgical options for gastroparesis.
Methods: A prospective review (2003-2015) of patients who underwent laparoscopic placement of GES or LRYGB for gastroparesis was performed. The decision to perform GES or LRYGB was based on the surgeon's assessment along with the patient's choice and associated obesity as well as the insurance approval process. Telephone interviews were conducted with visits to the outpatient center for acute symptoms and/or voltage adjustments. **Results:** A total of 74 patients were surgically treated for gastroparesis (57 GES and 17 LRYGP) during the study period. Follow-up was performed at 3, 6, 12 month, and annually. Fifty-seven (77.0%) patients (43 GES patients and 14 LRYGP patients) were available for telephone interviews

or outpatient visits. The most common etiologies ranged from idiopathic (19.3%), diabetic (51.4%), to postsurgical (23.3%). Twenty-eight (65.1%) GES and 13 LRYGP (92.9%) patients indicated reduction of symptoms. Of the 41 total patients reporting improved symptoms, 68.3% and 27.2% of those patients had etiologies of diabetes and postsurgical, respectively. None of the patients of idiopathic origin reported any improvements. (p=0.01) Sixty-three percent of the patients with reduced symptoms continued taking oral prokinetic medications following surgery. One (1.8%) GES patient required enteral nutritional support postoperatively (33 GES and 2 LRYGP patients received nutritional therapy preoperatively). In the GES group, one (2.3%) patient underwent conversion to laparoscopic Roux-en-Y gastric bypass.
Conclusions: Gastric stimulators and Roux-en-Y gastric bypass are viable surgical options for the management of refractory gastroparesis. Diabetic and postsurgical etiologies of gastroparesis had encouraging improvement of symptoms compared to the idiopathic type. While outcomes are respectable, lifelong or long-term follow-up is critical in the nutritional management, medication maintenance, and stimulation adjustments in these patients.

A5127

DOES PSYCHOLOGICAL EVALUATION PREDICT THE WEIGHT LOSS SUCCESS IN BARIATRIC PATIENTS?

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Background: Psychological factors are thought to play an essential role for maintaining the surgical weight loss; however the literature on psychological evaluations as a predictor of weight loss success is inconsistent. The aim of this study was to assess whether there is a difference in weight loss outcome in the short term and long term in patients with a positive findings in the pre-operative psychological evaluation.
Methods: A retrospective review of the patients who had a LSG between the years 2007-2009 at our institution was conducted. All psychological evaluations were created and administered by a single practitioner to prevent any variation in psychological evaluations. The Bariatric Surgery Psychological Interviews consisted of a Perceived Stress Scale (PSS), Beck Depression Inventory-II (BDI-II), Axis I and II of Diagnostic and Statistical Manual of Mental Disorders -IV (DSM-IV), and assessment for presence of Eating Disorders. For this study, weight data were obtained at 1 year and 5 years after their LSG. Total Weight Loss (TWL) was compared at 1 and 5 years postoperatively in the categories of the presence or absence of a psychological disorder.
Results: Out of the 159 patients reviewed, 83 met the inclusion criteria of a complete psychological evaluation and absence of contraindicated comorbities. However, an additional number of patients had to be excluded due to Beck Depression Inventory-II (BDI-II) scores that revealed symptoms of depression without a clinical diagnosis of depression, leaving 34 patients in total to analyze. No significant difference in TWL post operatively was observed between those who had presence or absence of psychological disorder pre operatively. Of the 34 patients, psychological evaluations revealed 14 with a presence and 20 with an absence of psychological disorders. No statistically significant difference was observed in the TWL between those with and without a psychological disorder. The TWL in those with and without a psychological disorder at 1 year and 5 years was 71.8 lb ±24.6 and 92.4 lb ± 22.3 ($p < 0.0536$) and 71.3 lb±32 and 83 lb± 23.9 ($p=0.25$). In the analysis of the patients with psychological disorders, no statistically significant difference was observed in the TWL between those treated and not treated with weight gaining antidepressants. The TWL between those treated and not treated with weight gaining antidepressants at 1 year and 5 years was 77.1 lb ±25 and 65.3±22.4 ($p=0.78$) and 82 lb ±29 and 60 lb±29 ($p=0.3$)

Conclusion: According to our data, no difference in TWL between patients with and without psychological disorders at 1 and 5 years post operatively. However larger studies with longer follow up are necessary to draw final conclusions.

A5128

URINARY CHEMISTRY PROFILES AND RISK OF NEPHROLITHIASIS AFTER BARIATRIC SURGERY: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Background Earlier publications have shown renal complications of hyperoxaluria and calcium oxalate stones following bariatric surgery. Multiple reports have also linked metabolic changes that alter the urinary chemistry profiles with bariatric surgery. However, there is no evidence on specific urinary profiles or type of stone so far. We performed a systematic review and meta-analysis to explore association between bariatric surgery and postoperative urinary chemistry change and risk of stone formation.
Methods We comprehensively searched the databases of PubMed/MEDLINE, EMBASE, and Cochrane Databases from their dates of inception to April 2015. The inclusion criteria were published observational studies of post-bariatric surgery and urinary tract stones or urinary stone chemistry profiles. Two authors independently assessed the quality of the articles and extracted the data. The primary outcome was risk of urinary stone comparing between bariatric surgery and control groups. We also examined difference in urine oxalate, calcium, phosphorus, citrate, calcium oxalate, and urine volume as secondary outcome.
Results From 26 full-text articles, 9 observational studies involving 10,270 participants were included in the meta-analysis based on the random effects model. There was no difference in risk of urinary tract stone postoperatively in those receiving bariatric surgery compared with controls with pooled relative risk (RR) = 1.53 (95% CI: 0.26–9.06). In the analysis of urinary chemistry, there were significant higher urine oxalate in bariatric surgery group with weighted mean difference (MD) of 23.55 (95% CI: 15.39–31.71), and urine phosphate with MD of 161.1 (95% CI: 55.14–267.1). Calcium oxalate stone concentration was not difference between the two groups (MD=2.79; 95% CI: -0.61 – 6.19).
Conclusions Bariatric surgery is associated with higher urinary oxalate and citrate compared with controls. However, it is not associated with an increased risk of urinary stone or calcium oxalate stones.

A5129

EFFECTS OF LAPAROSCOPIC ROUX-EN-Y GASTRIC BYPASS COMPARED TO LAPAROSCOPIC VERTICAL GASTROPLASTY ON THE RESOLUTION OF MORBID OBESITY IN A NATIVE HAWAIIAN POPULATION

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Background: Both Laparoscopic Roux-En-Y Gastric Bypass (RYGB) and Laparoscopic Sleeve Gastrectomy (SG) have been shown to be effective as a permanent treatment for obesity in mostly Caucasian populations , however there is little data on their effectiveness in minority (specifically Native Hawaiian) population. Given higher rates of obesity and diabetes among Native Hawaiians compared with other ethnicities, providing the most effective treatments can have significant effects on the overall health of this population.
Methods: 26 Native Hawaiian patients with diabetes were recruited by the Queens Medical Center Comprehensive Management Program and randomized to undergo either Gastric Bypass or Sleeve Gastrectomy. Patients were followed for up to five years after their procedure. Primary end points were total weight loss, percent of Excess Body Weight (EBW) loss as well as resolution of specific comorbidities: diabetes (DM), hypertension (HTN) and sleep apnea (OSA)

Results: Patients were 65% female, with a median age of 48 years (range 36 to 58) at time of enrollment. 56% of study patients underwent RYGB. Rates (%) of HTN 93 and 90) and OSA (93 and 80) were similar between the two groups, p values NS. At one year, weight loss was also similar between the two groups both when expressed as total pounds and Excess Body Weight (EBW). See Table 1 and Figure 1. Overall 1 year after surgery diabetes had resolved in 88% of patients. The prevalence of HTN decreased from 92 to 32 and the prevalence of OSA decreased from 88 to 12.
Conclusions: In this pilot study both Gastric Bypass and Sleeve Gastrectomy were effective treatments of obesity in a Native Hawaiian population. Rates of weight loss and resolution of co morbidities were seen in similar numbers to previous studies in patients of other ethnicities.

A5130

THE ASSOCIATIONS OF 'FATNESS', 'FITNESS' AND PHYSICAL ACTIVITY WITH ALL-CAUSE MORTALITY IN OLDER ADULTS: A SYSTEMATIC REVIEW OF OBSERVATIONAL STUDIES

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What is already known on this subject?

- There is a growing body of evidence from prospective longitudinal studies of an inverse relationship between excess adiposity, predominantly defined by body mass index, and mortality in older adults. This is commonly referred to as the obesity paradox: i.e. being overweight is associated with longer rather than shorter survival.
- Though a number of theories have been put forward to explain this, but convincing evidence to support any one theory is yet to emerge.
- One largely neglected explanation for the obesity paradox is that cardiorespiratory fitness or physical activity may act either as confounders (i.e. older adults who are physically fit may weigh more than people who are unfit) or effect modifiers (the impact of being overweight may be different in people who are physically fit compared to those who are unfit).

Objectives: This review explored whether cardiorespiratory fitness or physical activity act as either confounders or effect modifiers of the relationship between adiposity markers and all-cause mortality in older adults.
Methods: Systematic searches were carried out to identify observational studies that examined the association of adiposity markers (body mass index, waist circumference and waist-hip ratio) with all-cause mortality in adults aged ≥60 which took into account cardiorespiratory fitness or physical activity.Data from each included study was analysed to produce a graphical representation of this relationship.
Results:14 of the 15 identified studies found that increasing BMI had a non-positive association with all-cause mortality, with persistence of the obesity paradox despite adjustment for physical activity or cardiorespiratory fitness.Physical activity measurement methods were all subjective and often unvalidated. The two studies stratifying for cardiorespiratory fitness did not find that fitness had a significant impact on the relationship between excess adiposity and mortality, but found that overweight and fit people had better survival than normal weight unfit people,
Conclusions: The predominant use of poor physical activity measurement suggests that studies are currently not adequately accounting for possible physical activity confounding. More studies are needed addressing the modification of the relationship between adiposity markers and mortality by cardiorespiratory fitness.

What does this review add?

- This review is the first in older adults to examine whether cardiorespiratory fitness or physical activity influence the observed association of excess adiposity with all-cause mortality .

- All but one of the included studies demonstrated a paradox which persisted

after adjustment for physical activity or cardiorespiratory fitness, suggesting that confounding by physical fitness is not an explanation. However, subjective and unvalidated physical activity measuress were used in many of these studies, so it is plausible that there is residual confounding.

- Two studies that stratified the impact of BMI by physical fitness did not demonstrate any significant interaction between these factors, but did observe lower mortality in the groups with higher fitness. Overweight people who were physically fit had lower mortality than people of normal weight who were unfit.

A5131

THE IMPACT OF U.S. RESIDENCE ON METABOLIC RISK FACTORS AND TYPE 2 DIABETES AMONG ASIANS IMMIGRANTS: EVIDENCE FROM THE 2011-2012 NHANES

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Background: Few nationally representative analyses have examined the metabolic health of Asian immigrants in the U.S.
Methods: This study used the NHANES 2011-2012 data to examine the association of length of U.S. residence with metabolic health among Asian immigrants in the U.S. (N = 820). Standardized thresholds for blood pressure, lipids, and glucose were used to determine metabolic dysfunction. **Results:** Length of residence was positively associated with higher odds of metabolic dysfunction and type 2 diabetes risk. Asians with 15+ years of U.S. residence had elevated odds of high levels of triglycerides (OR: 2.53, $p<0.001$), and high cholesterol (OR: 2.15, $p<0.05$).
Conclusions: The odds of metabolic dysfunction were evident among Asian immigrants relative to U.S. born Asians, and markedly elevated among foreign-born Asians after 15 years of U.S. residence. Greater research and public health prevention efforts should be focused on immigrant Asians in the U.S.

TOPIC: GENERAL INTEREST

A5057

INITIAL EXPERIENCES OF LAPAROSCOPIC METABOLIC AND BARIATRIC SURGERY FOR MORBID OBESITY

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Background: Metabolic and bariatric surgery (MBS) is a newly arising procedure in South Korea with low incidence of morbid obesity. So, gastric cancer surgeon starts MBS in the majority of hospitals. The aim of this study was to evaluate the feasibility and short-term outcomes of MBS. **Methods:** From Jan 2013 to Feb 2015, 7 patients with morbid obesity underwent laparoscopic MBS to lose their weight. We evalutate basic clinical data from medical records.
Results: All patients are female. Mean age was 26.5. Mean BMI was 37.2. Two patients had diabetes preoperatively. All procedures were performed by laparoscopy. Three of sleeve gastrectomy and 4 of Roux-en-Y gastric bypass were performed. Mean operation time was 150 min. Median hospital stay was 4 days. (2 – 30 days) No mortality was reported. Major complication requiring reoperation was 1 case. (gastric pouch leakage) . Minor complications was experienced in 1 port site oozing. Mean EWL was 60.4% and diabetes were resolved.
Conclusion: Laparoscopic MBS including sleeve and R-Y bypass is feasible and promising procedure in Korea, which is performed by gastric cancer surgeon. More case loading and studies are needed.

A5133

MULTI-INSTITUTIONAL EXPERIENCE ON THE SURGICAL MANAGEMENT OF ABDOMINAL WALL HERNIAS IN PATIENTS UNDERGOING BARIATRIC SURGERY

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Background: Morbidly obese patients have predisposition for abdominal wall hernias. Several strategies have been used for patients with morbid obesity and ventral hernias undergoing bariatric surgery. With the aim of identifying the ideal management strategy for this group of patients, a multi institutional experience was analyzed.
Patients and Methods: A database of patients with the combination of morbid obesity and abdominal wall hernias who underwent bariatric surgery and synchronic or delayed herniorrhaphy at 8 Mexican institutions was constructed. Analyzed data included: demographics, characteristics of the hernia, type and approach of the herniorrhaphy, complications and outcome. A particular emphasis was placed on the comparative analysis of complications and recurrence between the group of patients who underwent the herniorrhaphy at the time or after the bariatric procedure and using different surgical techniques. Additional risk factors for complications and recurrence were also analyzed. Descriptive and inferential statistical analysis were performed using IBM© SPSS® Statistics version 20.0, considering any p value ≤0.05 or 5% as statistically significant for a two-tail hypothesis.
Results: From a total of 3,310 patients who underwent bariatric surgery at the participant centers, 84 patients had an abdominal wall hernia for a prevalence of 2.5% ($CI_{99\%}$ 1.8-3.2%). There were 21 males (25%) and 63 females (75%) with a mean±SD age of 50.9±9.9 years and a mean±SD BMI at the time of the bariatric surgery of 47.5±8.7 Kg/m^2 (range 34-77). As comorbid conditions, 38.1% of the patients had type 2 diabetes, 42.9% high blood pressure and 23.8% hyperlipidemia. According to the classification proposed by Chevrel et al, 43 hernias were incisional (51.2%) and 41 ventral (48.8%). Mean±SD size of the defect was 6.9±4.4 cm (range 0.5-16). Roux-en-Y Gastric Bypass was performed in 70 patients (83.3%) and Sleeve gastrectomy in 14 (16.7%). Bariatric surgery was completed laparoscopically in 61 patients (72.6%). Complications of bariatric surgery occurred in 8 patients. Herniorrhaphy was performed at the time of bariatric surgery in 68 patients and as a subsequent procedure in 16. BMI at the time of herniorrhaphy in the group of delayed herniorrhaphies was 32.7±7.1 kg/m^2. Complications of the herniorrhaphy occurred in 11 (16.2%) patients in whom the hernia repair was performed at the time of the bariatric operation and in 2 (12.5%) patients with a delayed repair (Fisher´s exact test, p=0.53). Additionally, in a mean follow-up of 41.7±51.7 months (range 3-172), recurrence rate was 15 (22.1%) and 2 (12.5%) respectively (Fisher´s exact test, p=0.32). In 71 patients the hernia repair was performed open (84.5%) and in 13

laparoscopic (15.5%). Complications of open and laparoscopic repairs were 14.1% and 23.1% (Fisher´s exact test, p=ns). The hernia was repaired by primary closure in 55 patients. A synthetic mesh with or without primary closure was utilized in 20 patients and a biologic mesh with or without primary closure in 9. Complication rate in these 3 groups were 12.7%, 15% and 33.3% respectively (Chi-square, p=0.28). Recurrence of concurrent primary closure was 27.7% whereas there was no recurrence in patients with delayed primary closure (Chi-square, p=0.09; OR=1.4, $IC_{95\%}$ 1.2–1.7). Recurrence of concurrent repair with a synthetic mesh was 16.7% (2/12) and recurrence of delayed repair with synthetic mesh was 25% (2/8) (Fisher´s exact test, p=0.53, OR=1.5, $CI_{95\%}$ 0.26–8.58), There was no recurrence in the group of patients who underwent synchronic closure with a biologic mesh. Significant additional risks factors for recurrence were age and size of the hernia.
Conclusions: In patients with abdominal wall hernias undergoing bariatric surgery, the best results are obtained when the herniorrhaphy included mesh placement. The time of the hernia repair did not have an important impact on its recurrence rate.

A5134
DO MINORITY PATIENTS ADHERE TO POST-BARIATRIC SURGERY RECOMMENDATIONS REGARDING POSTPONING CONCEPTION AND DOES IT AFFECT PREGNANCY OUTCOMES?
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Background: Most bariatric surgery patients in the U.S. are females, and approximately half of these are of child-bearing age[1]. At our center, 68% of patients are females of childbearing age. Guidelines from major bariatric societies recommend that patients delay conception post-bariatric surgery for 12-18 months, based on case reports and retrospective studies showing an increased miscarriage rate if conception occurs earlier, along with other complications. Given the rapid changes in nutrients during this period of rapid weight loss, it is believed that the risk for malnutrition and growth retardation in the fetus is highest during this early post-op period. Our patients are currently advised to postpone conception for 18-24 months post-op. Our study goal was to evaluate the prevalence of patients having pregnancies before vs. after 18 months post-op and determine whether there were any differences in the outcomes of pregnancies between the two groups in those who delivered at our institution.
Methods: A retrospective study of morbidly obese females of childbearing age 18-50 Years old, who underwent bariatric surgery at a New York City public hospital from 2004-2014. The electronic medical records of these patients were examined from year 0 up to 5 for: number of pregnancies, estimated date of conception, outcome of pregnancy, pregnancy complications, number of weeks' gestation at time of delivery, delivery complications and fetal outcomes. Primary outcome: prevalence of patients conceiving less than 18 months post-op vs. after 18 months post-op. Secondary outcomes: prevalence of pregnancy-related and fetal complications for patients conceiving less than 18 months post-op vs. greater than 18 months post-op. Data are expressed as mean ± SE.
Results: Our bariatric population was composed of 785 female patients of child-bearing age; the mean age was 35.79 ± 8.28 years (range 18.25 – 49.99 years). Of 785 patients: 81 (10.32%) (57 Hispanic, 14 African American, 1 Asian, 3 "other" race and 6 "Unknown" race/ethnicity) had 114 pregnancies within the first 5 years after bariatric surgery and will be the focus of this abstract. 50 patients had 56 pregnancies within 18 months of surgery with a mean time to pregnancy of 0.9 ± 0.39 year and 31 patients had 58 pregnancies more than 18 months post-op. 52 of the 81 patients who became pregnant within 5 years post-op had some of their obstetric care at our institution for a total of 70 pregnancies; however, obstetric outcomes were unavailable for 18. 37 patients had medical care during 52

pregnancies at our institution with some data regarding the pregnancy outcome available for review. Of these, 30 were term deliveries (20 vaginal, 10 cesarean). Of the 22 that did not come to term, 20 were elective terminations of pregnancy, 1 was a spontaneous abortion in a patient who conceived at less than 18 months post-op, and 1 was a stillbirth, in a patient who conceived at less than 18 months post-op (actual date of conception < 12 mos). Other peripartum issues in patients conceiving in less than 18 months were gestational diabetes (GDM) in 2 patients, fetal macrosomia in 1 of these GDM patients, necessitating a cesarean section with a delivery complicated by post-partum bleeding, and 1 patient with pre-eclampsia (actual date of conception < 12 mos). In patients conceiving greater than 18 months post-op, there was 1 reported case of GDM and in a different patient, macrosomia requiring cesarean section and blood product transfusion, and 1 patient who delivered a small for gestational age child at 37 weeks. There were no documented cases of pre-term deliveries or fetal malformations in any of the patients delivered at our institution from this series of patients.

Discussion: We found an overwhelming majority of our predominately white Hispanic and African-American patients, 93.63%, adhered to the advice of our staff regarding postponing conception for at least 18 months post-op. When comparing patients who had obstetric care at our institution and had pregnancies earlier vs later than 18 months post-op, there was no significant difference in the number of spontaneous abortions, pregnancy complications such as pre-eclampsia, pre-term deliveries or fetal malformations; however, these complications occurred in such small numbers and we also did not have pregnancy outcomes data available on all patients, which may account for an inability to detect any difference and are limitations of this study, along with its retrospective nature and the possibility of unreported pregnancies. Although most adhered to the recommendations, there is room for improvement, particularly if it may prevent adverse outcomes during pregnancies. For this reason, our center has begun to include a family planning consult with the Ob-gyn department as part of the routine pre-op workup for bariatric surgery in all females of child-bearing age. Gathering additional prospective data will also be helpful in optimizing our clinical counseling to suit our patient's needs as well as understanding the true risks associated with pregnancies after bariatric surgery.

A5135

DOES WAIST CIRCUMFERENCE INFLUENCE BARIATRIC SURGERY OUTCOMES?

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Introduction: Central adiposity increases the risk of cardiovascular and metabolic disease. However there remains a gap in the literature as to the utility of waist circumference as an anthropometric index in bariatric medicine.

Methods: Demographic, anthropometric, weight loss, and biochemical cardiac risk factor (BCRF) data were prospectively collected for 1909 patients undergoing laparoscopic Roux-en-Y gastric bypass (RYGB). This cohort was divided into two groups based on preoperative waist circumference either below the mean of 52.46 inches (group 1: "Small Waist") or above the mean (group 2: "Large Waist"). Post-RYGB weight loss was compared between these groups, as were rates of surgical complications, hospital readmissions, and reoperation. To investigate whether waist circumference influenced improvement of cardiac risk, percent improvement of several BCRF values (total cholesterol, LDL, HDL, triglycerides, triglyceride-to-HDL ratio, C-reactive protein, and hemoglobin A1c) was compared based on preoperative waist classification. Retrospective analysis of this prospectively collected data was undertaken using student's t-test and Fisher's exact test to compare continuous and dichotomous variables, respectively. All analysis performed with GraphPad Prism 6.

Results: In our cohort, 1180 subjects had waist circumference measured preoperatively with a mean of 52.5 inches; 652 subjects (55.3%) were in the "Small Waist" group (mean waist 47.6 in) while 528 (44.7%) were designated "Large

Waist" (mean waist 58.4 in). There was a significant difference in postoperative weight loss based on preoperative waist classification. Subjects in the "Small Waist" group lost significantly more weight than those in the "Large Waist" group at all time points (3mos: 45.6 vs. 35.8%; 6mos: 63.5 vs. 50.8%; 12mos: 75.2 vs. 63.5%; all p's <0.0001). Complication, readmission, and reoperation rates did not differ between waist groups. Similarly, percent improvement in BCRF values was not significantly different for "Large" vs. "Small" waist groups.

Conclusions: Given that increased waist circumference/central adiposity increases risk of cardiometabolic disease, the present finding that subjects with above-average waist circumference experience equivalent improvement in cardiac risk factors after RYGB is particularly encouraging. Bariatric providers should continue to encourage patients to lose weight and decrease waist circumference preoperatively to ensure maximal post-RYGB weight loss.

A5136

CONSERVATIVE MANAGEMENT OF PRE AND POSTOPERATIVE ASYMPTOMATIC GALLBLADDER DISEASE IN BARIATRIC SURGERY: MIDTERM RESULTS OF A PROSPECTIVE STUDY

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Background. Bariatric surgery continues to be the most effective therapy for weight loss in patients with morbid obesity. Depending type of surgery, long-term complications can include nutritional deficiencies, anemia, internal hernias, anastomotic ulcers/strictures, cholelithiasis/cholecystitis, among others. There is no clear consensus whether an asymptomatic cholelithiasis detected pre or postoperatively should be also operated (simultaneously, before or after bariatric surgery), or if it is safe to convey a conservative management (unless symptoms occur).

Methods. Prospective study where all patients submitted to bariatric surgery that had a preoperative ultrasound (US) between December 2012 and February 2014 were enrolled. The primary objective was to assess gallbladder status prior to surgery (no disease; symptomatic or asymptomatic sludge/cholelithiasis), and convey a conservative management for those without disease and asymptomatic sludge/cholelithiasis. After 12 months following surgery, a new US was performed to re-assess gallbladder status. Exclusion criteria were patients without US pre or postoperatively, patients without gallbladder and patients with symptomatic disease that had cholecystectomy simultaneous with their bariatric surgery; also patients lost during follow-up were not included. If there was any evidence of cholecystitis during follow-up, patients were submitted to cholecystectomy. Secondarily an analysis of weight loss (%EWL) and gallbladder disease relationship was performed.

Results. In a 15 months period, 101 bariatric surgeries (97 gastric bypass/4 sleeve gastrectomy) were performed. Eleven patients were excluded initially (9 because of previous cholecystectomy and 2 without ultrasound). Based on 90 patients, a global incidence of preoperative gallbladder disease was observed in 33 (36.6%) cases: Fourteen (15.5%) with sludge, 15 (16.6%) asymptomatic gallstones, and 4 (4.4%) symptomatic gallstones. During follow-up, nine patients were excluded (6 without ultrasound and 3 lost of follow-up), and 4 (4.9%) required simultaneous cholecystectomy because of symptomatic gallstones. The final analysis was based on 77 patients; female sex comprised 80.2% of cases with a mean age of 37.6 years. The complete analysis is shown in Table 1. After 12 months, de novo gallbladder disease was observed in 18 patients (37.5%): Sludge in 11 (61.1%), asymptomatic gallstones in 4 (8.3%) and symptomatic gallstones in 3 (6.2%). The evolution of patients with preoperative sludge was: Ten (71.4%) still with sludge, three (21.4%) developed asymptomatic

gallstones and one (7.1%) symptomatic gallstones. The evolution of 15 patients (19.4%) with preoperative asymptomatic cholelithiasis was: Fourteen (93.3%) remained asymptomatic, and only 1 patient (6.6%) required surgery. (Figure1) The overall rate of cholecystectomy because of symptomatic disease after 12 months was 6.4% (5 patients): Three without initial disease, one with preoperative sludge, and one with preoperative gallstones. From these patients, two required emergency surgery for cholecystitis. There were no differences in %EWL between patients with de novo gallbladder disease and those without (73.5 ± 16.7% vs. 82.5 ± 11.5% respectively; p 0.115). For those having preoperative asymptomatic disease, there were no differences in %EWL between patients that presented further symptoms or not (74.8 ± 6.5% vs 80.9 ±15% respectively; p=0.337).
Conclusion. Conservative management of asymptomatic gallbladder disease in candidates to bariatric surgery is safe and can be offered to every patient, based on the low percentage of patients requiring further cholecystectomy after 12 months. Also, a conservative management can be offered to patients developing de novo sludge/cholelithiasis without related symptoms. Longer follow-up and more patients enrolled are necessary to make a final statement.

A5137

BARIATRIC SURGERY PATIENT PERCEPTIONS AND WILLINGNESS TO CONSENT TO RESIDENT PARTICIPATION

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Background: Many bariatric surgery programs are located at teaching hospitals where they are integral to the training of surgical residents. Integrating surgical trainees requires an often difficult balance of the training needs of the resident versus maximizing patient safety and outcomes, and patient's may have little understanding or appreciation of this process. The purpose of this study was to examine bariatric patient perceptions and willingness to participate in resident education and assess the effect on patient willingness and consent rates.
Methods: Anonymous questionnaire given to bariatric patients in preoperative appointment at tertiary-level referral center with a 6-year residency program. It is designed to capture demographics, overall opinions of teaching programs, and willingness to consent to various scenarios of trainee participation.
Results: 100 patients completed the questionnaire, 75% were female and 52% were planning on proceeding with sleeve gastrectomy as their procedure of choice. Most patients expressed overall support for their procedure being performed at a teaching hospital with 92% feeling that their care would be equivalent to or better than that of a private hospital. However, only 63% of the patients would definitely consent to having either interns or residents involved in their operation. When presented with several realistic scenarios with different levels of trainee involvement in their surgery, there was marked variation in the consent rates (low of 15% to high of 87%). Only 45% would consent to an intern assisting with their procedure, while 78% would consent to a senior resident ($p<0.05$). Most patients (95%) felt they should be informed of the exact year of the resident performing the procedure and also be specifically informed if this was the resident's first time performing the procedure. Factors independently associated with willingness to consent to resident participation included having a prior surgery performed at a teaching hospital (odds ratio 3.6) and expressing a feeling of providing benefit to other's by participating in resident training (odds ratio 5.5, both $p<0.05$).
Conclusions: Overall, patients expressed support for the teaching hospital model and resident education and participation. However, their willingness to consent to specific realistic scenarios involving various levels of resident participation in their surgery ranged widely, and decreased for lower level trainees and for increased levels of active resident participation. Although providing detailed informed consent is preferred by patients, it has the potential to negatively impact resident participation and training.

A5138

THE COMPLETED CONSENT FORM IN PATIENTS UNDERGOING BARIATRIC SURGERY: IS IT FIT FOR PURPOSE? A STUDY FROM A REGIONAL BARIATRIC CENTRE IN THE UNITED KINGDOM

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Background: Laparoscopic gastric bypass (LGB) and sleeve gastrectomy (LSG) for morbid obesity are complex procedures that may result in occurrence of serious perioperative complications. A thorough preoperative informed consent process is paramount in this population of patients, most of which have numerous baseline co-morbidities. We studied the consistency and adequacy of completed operative consent forms with a view to identifying areas for improvement.
Methods: Completed operative consent forms from consecutive patients who underwent LGB and LSG from Apr 13 to Apr 14 in a regional bariatric centre in the United Kingdom were studied. The adequacy of consent forms was determined by comparing the benefits and risks documented on forms against a standardised list of 22 variables complied during a consensus meeting of the bariatric multi-disciplinary team.
Results: 109 patients (mean±SD age 46±11 years) were included of whom 88 (81%) underwent LGB. Of the 22 variables, the mean±SD number of variables documented by Consultant Surgeons was 10.7±1.9 compared to 10.6±1.5 by trainees. Variables such as benefits of surgery, postoperative bleeding and infection were documented in all consent forms. Other variables were documented less frequently: anastomotic/staple line leak (86%), DVT/PE (82%), malnutrition (78%), strictures (76%), death (75%), internal hernia (65%) and weight regain (58%). Less frequently discussed risks included: esophageal perforation (13.8%), marginal ulcers (11%), visceral injury (8.2%), excess skin (8.2%), and reoperation (2.8%). Only 28% of patients were consented for conversion to open surgery.
Conclusions: Our study demonstrated much variability and inadequacies in completion of operative consent forms. Given the high-risk patient population, complex surgery, and potential for litigation for surgeons undertaking bariatric procedures, use of pre-printed consent forms should eliminate variability and reduce the risk of omitting important risks.

A5139

VARIABILITY IN BARIATRIC CLINICAL PATHWAYS: ASSESSING NATIONAL PROVISION OF CARE

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Background: The Quality Improvement and Patient Safety (QIPS) Committee supports the mission and values of the American Society of Metabolic and Bariatric Surgeons (ASMBS) by promoting continuous improvement in patient safety and risk reduction. These goals are achieved by the integration and coordination of patient safety initiatives to reduce medical errors through process analysis and participation in quality improvement reporting. As part of this mission, leaders in bariatric surgery were asked to provide any standardized clinical pathways used for the care of bariatric patients. We hypothesized that collecting and sharing established successful pathways could ultimately provide a valuable resource to support new programs as well as help existing programs improve patient safety. Additionally, analyzing these pathways would also demonstrate the variability in practice patterns across the country.
Methods: From June 2014 – April 2015, emails requesting clinical pathways pertaining to preoperative, intraoperative and postoperative management of bariatric patients were solicitedent from to the ASMBS executive council (EC), QIPS committee members and state chapter presidents. Pathways were de-identified at the senders request and then analyzed based on predetermined metrics

pertaining to preoperative, intraoperative and postoperative care. Concordance and discordance were then analyzed.
Results: In total 31 pathways were collected; the response rate was 80% from the EC, 77% from the QIPS committee and 21% from state chapter presidents. The number of pathways sent in ranged from 1 to 10 with a median of 3 pathways per individual/institution. The majority of pathways centered on perioperative care (80%). Binary assessment (present or absent) of variables demonstrated a high concordance, as defined by greater than 65% of pathways accounting for that parameter, in 6 variables. Those variables included: nutritional evaluation, psychological evaluation, intraoperative venous thromboembolism (VTE) prophylaxis, utilization of antiemetics in the postoperative period, a dedicated pain pathway and postoperative laboratory evaluation. Little agreement or specific mention of other preoperative workup variables, intraoperative details or postoperative assessment greater than the initial hospitalization was demonstrated. Table 1 presents the results of this assessment.
Conclusion: There is considerablea wide national variation in clinical pathways amongst practicing surgeons. Most pathways center on MBSAQIP accreditation parameters, patient satisfaction, or Surgical Care Improvement Protocol (SCIP) measures. These pathways may lend valuable data, in particular to perioperative management, to establish best practices.We hope to offer ASMBS members access to pathways as an online resource.

A5140

DISPARITY IN BARIATRIC PROCEDURES AMONG CLINICAL SUBGROUPS IN THE UNITED STATES: SURGICAL TRENDS OR PATIENT PREFERENCE

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Objectives: Over the last decade there has been a sharp increase in the use of laparoscopic sleeve gastrectomy (LSG) relative to Roux-en-Y gastric bypass (RYGB) and laparoscopic adjustable gastric band (LAGB). We sought to further examine national trends in bariatric surgery and determine whether the changes in bariatric procedure use over time, particularly the growth in LSG, were uniformly represented among clinical subgroups in the US.
Methods: Patients with a body mass index (BMI) $\geq 35 kg/m^2$ who underwent bariatric surgery from 2005-2012 in the American College of Surgeons-National Surgical Quality Improvement Program (ACS-NSQIP) database were identified. Procedure use, year of surgery, and patient population were evaluated. Logistic regression was used to analyze yearly trends in LSG versus RYGB use among clinically relevant subgroups.
Results: We identified 100,304 patients who underwent bariatric procedures between 2005 and 2012 in the NSQIP database. Laparoscopic RYGB was the most common bariatric surgery type performed each year, but had a decreasing trend (75% of cases in 2005 vs. 53.2% in 2012) [Figure 1]. From 2010 to 2012, LSG increased substantially from 9.5% to 34.4% of bariatric procedures performed per year, while LAGB decreased from 28.8% to 9.7%. Over this period, minority patients represented an increasing proportion of those who underwent LSG compared to Caucasian patients. The proportion of LSG patients who were elderly (≥65 years), superobese (BMI $\geq 50 kg/m^2$), diabetic, high-risk, and ASA class 4-5 also rose, but to a significantly lesser degree than patients <65 years, BMI $<50 kg/m^2$, non-diabetics, low-risk patients, and ASA class 1-3, respectively [Table 1]. In multiple logistic regression, factors independently associated with having LSG over RYGB in 2012 were age<65 (OR=1.58, 95% CI=[1.32-1.89], p<0.0001]), minority race (OR=1.30, 95% CI=[1.21-1.40], p<0.0001]), non-diabetic (OR=1.51, 95% CI=[1.39-1.63], p<0.0001), low-risk (OR=1.38, 95% CI=[1.27-1.50], p<0.0001]), ASA class 1-3 (OR=1.25, 95% CI=[1.01-1.55], p<0.0037), and BMI $<50 kg/m^2$ (OR=1.25, 95% CI=[1.16-1.35], p<0.0001]).
Conclusions: LSG use has grown substantially over the last decade, but to a greater extent among certain patient subgroups. Although LSG

was developed as the first stage of a two-stage biliopancreatic diversion-duodenal switch for high-risk patients, LSG is being performed on patients who are younger with less risk, whereas RYGB is targeted to those with more severe cases of obesity, surgical risk, and diabetes. Further studies will be necessary to clarify whether this approach reflects surgical preference or has been influenced by patient preferences.

A5142

MEDICAL TOURISM IN BARIATRIC SURGERY, TAKING ON THE RESPONSIBILITY OF FOLLOW UP CARE. A SINGLE CENTER'S EXPERIENCE

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Introduction: The American Society of Metabolic and Bariatric Surgeons (ASMBS) and the American College of Surgeons (ACS) have both defined medical tourism as travel across international borders to obtain medical care. The ASMBS has created an all-encompassing term of "Global Bariatric Healthcare" to describe medical tourism specifically for bariatric surgery. There are over 50 countries worldwide that identify medical tourism as a national industry. It's value ranges from $21 billion to $100 billion. The main motivation for pursuing global bariatric healthcare for patients is financial reasons or length of time between initial consultation and surgical intervention. Global bariatric healthcare must take into account the long-term follow up that bariatric patients require. All bariatric patients require lifelong post-operative weight loss management, nutritional monitoring, gastric bands adjustments, as well as management of potential surgical complications. This puts the responsibility of the follow up care of these patients, back on the local surgeons. As part of the ASMBS and ACS guidelines, it encourages patients to establish a plan for post-operative follow up with a qualified local bariatric surgery program. We reviewed our own experience with global bariatric healthcare and how the follow up care for these patients has now become part of our daily practice.

Methods: After institutional review board approval and following Health Insurance Portability and Accountability Act (HIPAA) guidelines, a retrospective chart review of a prospectively maintained database of 41 patients who had bariatric surgery outside of the United States, who sought follow up care at our clinic between the years 2008 to 2015. Inclusion criteria were patients who were evaluated and treated in our bariatric practice who had their bariatric surgery performed outside of the United States. Surgical procedures included Roux-en-Y Gastric bypass (RYGB), laparoscopic vertical sleeve gastrectomy (LVSG) and laparoscopic gastric band placement. Each chart was reviewed for type of surgery, treatment provided by the bariatric surgeons at our clinic, complications, additional surgical intervention, and post-operative care.

Results: Forty-one patients were identified within our surgical practice for having bariatric surgery outside of the United States during this period. The average age was 42 years old (20-62). The average BMI was 35.9 (23-58). Thirty-seven (90%) were female. Of these patients, 27(66%) patients had a laparoscopic gastric band, 13(32%) patients had LVSG, and 1(2%) patients had RYGB.Within the population who underwent surgery for laparoscopic gastric band, 13/27 presented for medical management and band adjustment. 14/27 had surgical band removal for one of the following reasons: abdominal pain (1), prolapse (4), dysphagia (4), erosion (3), failure to lose weight (2). Three patients went on to conversion of their lap band to LRYGB (2) and LVSG (1). LVSG was performed in 13 patients. Three of the13 presented for post-operative management. Eight of the 13 presented emergently with a leak requiring intervention. Intraperitoneal hematoma was the presenting symptom in 2 of the 13 patients. Only one patient was managed for post-operative RYGB complication of a perforation in the study population. Follow-up rates within the study population was 12% at 6 month follow-up, and 7% at one year follow-up. Compared to our own patient population for all procedures during the same time period

follow up at 6 months was 62% and 45% at one year.
Conclusions: Patients undergoing bariatric surgery require lifelong follow-up post-operatively. The time and financial responsibility for long term follow up then falls back on the patient's home country and medical community. This places bariatric surgeons in the position to care for patients whom they never performed an initial evaluation, surgical intervention and are expected to assume responsibility for the post-operative care. This is only going to put a strain on the local surgeons, who already have limited office and operating room time to care for their own patients. Better education needs to be in place for patients seeking medical care abroad.

A5143
THE IMPACT OF INTRAGASTRIC BALLOON IN PREOPERATIVE PREPARATION FOR SUPER OBESE PATIENTS WITH HIGH SURGICAL RISK COMPARING WITH TWO STEPS SURGERY
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Background: Super obese patient whow a high surgicla risk (major complications in 30% and mortality rate of 5-12%). The presente study evaluates the use of BIB as a preoperative procedure aiming an initial weight loss and reduction of surgical risk.
Methods: From november 2000 to june 2014 (178) super obese patients (mean BMI=60.3 10.1kg/m^2) were treated with the BIB for at least four months before surgical treatment: 135 male (BMI= 58.4 *8) and 43 female patients (BMI= 62.3 10.7). They showed associated diseases, including systemic arterial hypertension (72 cases), diabetes mellitus (26 cases), sleep apnea (54 cases), hypercholestoerolemy (27 cases) and osteoarthrosis (43 cases).*
Results: Patients showed mean percent excesso weight loss (%EWL) of 23.4 11.0%, mean percent total weight loss (%TWL) of 13.6 *6.5%, and mean BMI reduction of 8.4 4.9 Kg/m^2. Around 80% of patients showed good results with 27% EWL with improvemen in hypertension, diabetes mellitus an sleep apnea. Surgical risk was reduced from ASA III-IV (before the BIB) to ASA II (after BIB). All these patients were submitted to bariatric surgery (GB 41%, LAGB 33% or SGBPD 26%). There was no mortality an only four minor complications (wound infection 7.5%).*
Conclusions: Our results showed that the intragastric balloon is an effective technique in order to prepare super obese patients in preoperative time (79%), reducing their major complications and mortality. Effective non-surgical technique in pre-op time for patients BMI>50. Change surgical risk ASA III –IV to ASA II (79%). No mortality an minimal risk of major comlications. Reduce 79% the indications of two stage surgery. Los risk an lower cost than two stage surgery.

A5144
A MATCHED COHORT STUDY OF LAPAROSCOPIC BILIOPANCREATIC DIVERSION WITH DUODENAL SWITCH AND SLEEVE GASTRECTOMY PERFORMED BY ONE SURGEON
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Background: Laparoscopic biliopancreatic diversion with duodenal switch (BPD/DS) comprises a minority of bariatric procedures in the United States due to the perception of an increase in risk of complications such as bleed, leak, or death. Laparoscopic vertical sleeve gastrectomy (SG) is currently the most common bariatric procedure in the United States due to widespread acceptance of its safety and efficacy. The objective of this study was to determine if BPD/DS is comparable to SG with regard to rates of complications.
Methods: All patients who underwent BPD/DS or SG from January 2008 to August 2014 by one

surgeon were identified. These patients were used to construct two cohorts matched on the basis of age, sex, and BMI and were compared by surgical type of BPD/DS or SG. Data collected included patient demographics, hospital length of stay (LOS), 30-day rates of leak, bleed, reoperation, readmission, and mortality. Categorical variables were compared via test, and nominal variables were compared via a t-test. Significance was assessed at $p<0.05$. Statistical analysis was performed using IBM SPSS Statistics v. 21 (Armonk NY).
Results: Of the 741 patients who underwent either a BPD/DS or SG, two cohorts of 167 patients each were matched for age (p=0. 64), sex (p= 0.57), and BMI (p= 0.74). LOS was statistically longer in the BPD/DS cohort (2.53 +/- 0.07 days vs 2.12 +/- 0.05 days, $p<0.001$). There were no statistically significant differences in the BPD/DS group compared to the SG group in relation to 30-day post-operative rates of leak (0.3% vs 0.6%, respectively, $p>0.99$), bleed (0% vs 0.3%, respectively, $p>0.99$), reoperation (1.2% vs 0.6%, respectively, $p>0.99$), or readmission (3% vs 1.2%, respectively, $p>0.45$). There was no mortality recorded in either group.
Conclusions: After matching for age, sex, and BMI, BPD/DS demonstrated no statistically significant differences from SG with regard to 30-day post-operative rates of leak, bleed, reoperation, readmission, or mortality. Difference in LOS is presumably related to differences in the complexity of the procedure.

A5145
INFLUENCE OF RACE AND GENDER ON BODY PERCEPTION AND BARIATRIC SURGERY: A SURVEY OF THE GENERAL POPULATION
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Background: A disparity in bariatric surgery utilization among gender, racial and socioeconomic groups is clearly demonstrated within the literature. Studies demonstrate up to 80% of operations are performed on females and persons identifying as Caucasian. Despite an equivalent rate of obesity in men and an arguably higher rate in certain minority groups and the socioeconomically depressed, weight loss surgery is substantially underutilized in these populations. Access to care has long been cited as a potential barrier; however, cannot explain this chasm completely. The reasons for underutilization are likely multi-factorial and may relate to differences in gender, racial, and cultural perceptions of obesity and the perceived effect of bariatric surgery. While research has centered on body perception of patients undergoing weight loss surgery, little is known about perception of the general population.
Objective: The purpose of this study was to delineate body perception and perceived weight loss outcome following bariatric surgery across gender and racial groups.
Methods: Following IRB approval, 534 surveys were distributed to all willing persons in public venues across eastern Long Island. Locations were strategically selected to try and capture a nonhomogenous population with regard to race, culture and socioeconomic status (SES). The survey assessed body perception, perception of ideal body image, perception of a healthy body shape in addition to a number of demographic factors, including age, race/ethnicity, gender, height, weight and level of highest education (See Figure 1). Linear-by-linear association was used to examine the relationship between age/BMI and responders' choices. Kruskal-Wallis test or Mann-Whitney U test was used to examine the difference in responders' choices among gender and race. P-values <0.05 were considered significant.
Results. From the 534 surveys, 112 (21%) were excluded due to incomplete information. From the remaining 422 surveys, mean age was 36.2+/-17.9 (18-83) and 55.5% of respondents were female. Two-hundred seventy one participants (64.2%) identified as Caucasian, 42(10%) as African American, 61 (14.5%) as Asian, 38(9.0%) as Hispanic, and 10(2.4%) as Other. Younger individuals (age 18-24) were more likely to perceive themselves as having lower BMI than actual compared to those age >35 ($P<0.001$). In addition, younger individuals

were more likely to choose a lower BMI as an ideal figure (P=0.03) and thought that patients would have a lower BMI following weight-loss surgery (P=0.005). Female participants were more likely to choose a higher BMI than actual BMI as an answer for how they feel they look like most of the time (P=0.028). Males were more likely to choose a higher BMI as an ideal figure compared to female participants (P=0.001). Patient's with lower BMIs were more likely to choose a lower BMI as their perception of ideal and healthy figures(P=0.001). When asked to choose between an underweight body shape and an obese body shape, participants with BMI <18.9 consistently chose BMI <18.9 kg/m2 (P=0.01). Race/Ethnicity was not associated with discordant body perception from actual, perception of ideal body image, or perception of a healthy body shape (P>0.05).
Conclusion: While race/ethnicity was not associated with significant differences in body perception, other factors such as participant's age, gender, and BMI are significantly related to body perception and perceptions of weight loss after bariatric surgery. Interestingly, younger participants perceived themselves as thinner than actual and thought results of weight loss would be superior as compared to older participants. This may be important in counseling younger patients to ensure realistic expectations following bariatric surgery. Additionally, this may indicate an educational opportunity for older patients who may still not realize the benefits of surgery. Men also were more likely to choose a higher BMI as an ideal body figure, perhaps indicating a greater acceptance of higher weights and thus explaining in part lower utilization rates. Additionally, lower BMI correlated with an increased perception of what constitutes an ideal and healthy body weight. This may suggest a gap in self-awareness and perception at higher weights. In conclusion, it appears that gender and age play a role in perception and are potential areas of intervention to increase utilization of bariatric surgery. Although race did not appear to influence body perception or perception of bariatric surgery, this could be a function of sample size. More data is currently being collected.

A5146

THE USE OF DEXA SCANNING TO SCREEN FOR VAT AND HELP DETERMINE METABOLIC RISK FOR PATIENTS UNDERGOING BARIATRIC SURGERY

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Background: It is known that visceral adiposity is associated with an increased risk for metabolic syndrome. Bariatric surgery decreases the risk of metabolic syndrome and its components. The relation to this decrease in risk has been shown to correlate with decrease in visceral abdominal tissue (VAT). The current measuring techniques for VAT include US, CT, MRI, DEXA scan. Of these DEXA has a lower radiation exposure with very accurate results when compared to computerized tomography. It is less expensive than MRI and can be done easily in the office setting without the need for a highly skilled technician like US. Our group is currently gathering data measuring VAT via iDEXA(General Electric) machine. Our goal is to ascertain the loss of VAT after bariatric surgery as compared to overall weight loss. We will also compare VAT loss after sleeve gastrectomy and gastric bypass.
Methods: This is a retrospective review of a prospective database. 80 patients that all had pre-operative DEXA with at least one repeat scan post-operatively have been included. Interval of post-operative scan range from 3, 6, or 12 months. We will compare patients' BMI, Total weight, Total mass, VAT mass, VAT percent at each interval and evaluate the percent change.
Results: We have preliminary results showing average pre- and post-operative BMI = 41.7 and 30.3, Fat percent = 52.4% and 41.8% ($p < 0.05$), VAT 4.7 and 2.25 ($p < 0.05$). The average VAT loss ratio was 53.29% and overall weight loss at 26.5%.

Conclusion: VAT is lost faster than is subcutaneous adipose tissue after weight loss surgery. This seems to correlate with the rapid improvement in metabolic dysfunction after surgery. As there seems to be a correlation with increased VAT and metabolic disease, we can postulate that screening for VAT can help a clinician determine metabolic risk. Of course more study is needed to validate this theory. If it proves to correlate, this modality may one day help surgeons choose the best operation for a patient.

A5147

CAN POSTOPERATIVE ANTHROPOMETRIC CHANGES PREDICT DIABETIC RESPONSE AFTER BARIATRIC SURGERY?

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Background: Type 2 diabetes mellitus (T2DM) is a life-threatening obesity linked condition often treated with bariatric surgery. Predictors of diabetic improvement often include duration and severity of diabetes, type of operation employed and various patient factors. Central obesity, as measured by waist circumference (WC) and waist/hip ratio, has been associated with an increased cardiometabolic risk. In this study, anthropometric changes after surgery were analyzed and correlated with T2DM response.
Method: Morbidly obese patients undergoing surgery at Loyola Health University Chicago were enrolled in this IRB approved cohort study. Analyzed were 35 patients having T2DM. Demographic data, diabetic type (non-insulin or insulin dependent) and type of surgery were analyzed. Anthropometric factors were measured pre and post-operatively. Predictors of diabetic remission (complete remission, improvement and non-response) were analyzed. Definition of complete remission was considered when there was a return to "normal" glucose metabolism (HbA1C < 6%, fasting glucose < 100 mg/Dl). Diabetic improvement (DI) was defined as lower drug dosage with sub-diabetic hyperglycemia.
Results: 35 patients (22 women; mean age = 44.86±9.81) were analyzed. The follow up time is 20.22 ± 4.85 (range, 6-32) months. Surgical intervention included 19/35 (54.28%) gastric bypass (LRYGB), 10/35 (28.57%) sleeve gastrectomy (LSG) and 6/35 (17.15%) gastric banding (LAGB). There were no demographic or anthropometric measurement differences between type of surgery and gender (p= 0.370), race (p=0.503) or diabetic type (p= 0.267). Mean preoperative BMI (kg/m^2) was 45.03±6.31 (LRYGB), 53.25±10.49 (LSG), and 50.41±13.70 (LAGB). Twenty (57.14%), ten (28.57%) and five (14.28%) of the 35 patients had complete remission, improvement and non-response of their diabetes respectively. In univariate analysis, preoperative independent predictors of success (complete response and diabetic improvement) included; white race (p=0.013), LRYGB (p=0.011), non-insulin dependent (p=0.023), pre-BMI ≤ 60 kg/m^2 (p=0.016) and pre-WC ≤ 160 cm (p=0.018). Postoperative parameters of success included; decrease in waist/hip ratio at 1, 3 and 12 months (0.012, 0.00 and 0.00 respectively). In multivariate logistical regression analysis, type of surgery (p=0.012; CI: 0.132-1.194), greater Δ waist circumference and greater Δ neck circumference at 12 months remained independent predictors of success.
Conclusion: Bariatric surgery remains the most effective treatment of diabetes (overall 85.71% of success) in the morbidly obese patient. Predictors of positive outcome may not only include the type of surgery and duration/ severity of T2DM, but changes in fat distribution. Gastric bypass, in this intermediate-term study, led to a greater degree of change in central obesity. Long-term follow-up may show that gastric bypass is superior in resolving central adiposity and therefore decreasing cardiometabolic risk and improving diabetes.

A5149

FERTILITY OUTCOMES AFTER BARIATRIC SURGERY: FIFTH-YEAR FOLLOW UP DATA

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Review: Maternal morbid obesity has been associated with higher infertility rates, increase in pregnancy complications and fetal growth

abnormalities. Bariatric surgery is currently the mainstay treatment of morbid obesity. It has been proven to achieve long term weight loss with improvement in all obesity related morbidities.
Objective: To compare the 5 year outcomes of laparoscopic Roux-en-Y gastric bypass (LRYGB) and laparoscopic sleeve gastrectomy (LSG) in terms of weight loss, fertility outcomes and safety during pregnancy.
Patients and methods: This prospective study included 73 adult morbidly obese females operated upon between August 2006 and December 2008. 41 patients underwent LRYGB (group 1) and 32 patients underwent LSG (group 2). After a minimum of 5 years of follow up, the followings were looked at: percentage % weight loss (%EWL), resolution of 1ry and 2ry infertility, conception rate in the pre-marriage group and gestational morbidity in the mother and baby.
Results : Mean %EWL at 5 years were 68+/- 6.1 and 63+/- 9.8 in group 1 and 2 respectively. Overall conception rates in the 1ry infertility, 2ry infertility and pre-marriage groups were 60% and 66.7%, 100% and 100%, 91.7% and 75.8 % in groups 1 and 2 respectively. Child gestational age and weight rates were within normal range for all.
Conclusions: Bariatric surgery is effective in the morbidly obese women who complain from 1ry or 2ry infertility. Also, better fertility indices can be achieved in those who are seeking marriage.

A5150
MODIFIED BODY ADIPOSITY INDEX FOR BODY FAT ESTIMATION IN MORBID OBESITY
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Background: Body Adiposity Index (BAI) is a simple method to estimate body fat (BF) that needs to be validate in morbid obese individuals. The objective is to evaluate BAI accuracy in BF determination of morbid obese adults
Methods: A cross-sectional prospective study that compares two methods for BF estimation (BAI *vs* BIA – bioelectrical impedance analysis) in severe obese adults. The BF determination in 240 morbid obese (Group 1- G1) was used to evaluate BAI limitations and to develop a specific equation. The new equation proposed was validated in 158 subjects (Group 2- G2).
Results: There was a significant difference between BF determination by BIA and BAI ($p=0.039$). The mean BF in G1 determined by BIA was 52.3±6.1% and 51.6±8.1% according to BAI. Gender, Waist-hip ratio (WHR) and obesity grade determined significant errors on BF estimation by BAI. A new equation (Modified Body Adiposity Index = MBAI) was developed by linear regression to minimize these errors (MBAI% = 23.6 + 0.5 x (BAI); add 2.2 if BMI $\geq 50 kg/m^2$ and 2.4 if WHR ≥ 1.05). The new equation reduced the difference between methods (1.2±5.9%, $p<0.001$ to 0.4±4.12%, $p=0.315$) and improved the correlation (0.6 to 0.7).
Conclusions: BAI present significant limitations to BF determination in morbid obesity. The new equation proposed (MBAI) was effective for BF estimation in morbid obese adults.

A5151
DOES SOCIAL CAPITAL INFLUENCE BARIATRIC SURGERY OUTCOMES?
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Introduction: Social capital, a metric of an individual's personal connections and networks, has been demonstrated to improve health outcomes in patients with a diverse array of diseases. We investigated the influence of social capital on weight loss and outcomes following bariatric surgery.
Methods: We prospectively studied 171 patients undergoing laparoscopic bariatric surgery. Preoperatively and at 3- and 6-months postop, subjects completed an adapted "Social Capital Community Benchmark Survey Short Form"

developed at the John F. Kennedy School of Government at Harvard University. This validated survey assesses social support in the following domains: trust, civic leadership, informal social ties, volunteering, social networking, and social support. Subjects were stratified based preoperative Social Capital survey score either above or below the cohort average, and weight loss outcomes including percent excess weight loss (%EWL) following bariatric surgery were compared between these groups. All analysis was completed with Stata 13.1.

Results: Among the cohort of patients, 62.34 % underwent Roux-en-Y gastric bypass, 34.42 % underwent sleeve gastrectomy, and 3.25 % underwent gastric banding; 77.12% were female, average age was 45.3 years and mean preoperative BMI was 45.9 kg/m^2. Our cohort had an overall average Social Capital score of 39.9 % (range: 18.7% - 63.9%). There were no differences in demographic or preoperative anthropometric indices between the high vs. low pre-op Social Capital score groups. 86 subjects were found to have an above-average overall Social Capital score. These participants had a 17.84% greater 6 month %EWL (69.23% vs. 51.39%, p=0.005) and greater 6 month %BMI change (25.84% vs. 22.40%, p = 0.039). No significant differences were found in rates of reoperation, readmission, or complication. There were no differences in bariatric surgery outcomes based on domain-specific Social Capital scores.

Conclusion: In summary, the amount of overall social capital and social support available to bariatric patients preoperatively may be a positive determinant on weight loss.

A5152

THE POSTOPERATIVE CHECKLIST FOR BARIATRIC SURGERY

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Introduction: Morbidly obese patients are at higher risk of intra-operative and short- and long term complications after surgery. In bariatric surgery pre- and intra-operative checklists are commonly used as a safety tool to standardize care and to identify high risk patients preoperatively, in order to decrease the number of postoperative complications. However, in current literature information on the use of postoperative checklists, addressing regularly measured parameters, such as pulse frequency, C-reactive protein and hemoglobin values, is scarce. This study evaluates the effect of a certain postoperative checklist in bariatric surgery on the occurrence of complications and early recognition of complications.

Methods: Data on all subjects, who underwent bariatric surgery, between February and December 2014, was prospectively collected, since introduction of the post operative checklist. This in-house developed post operative checklist was used during ward rounds on the first postoperative day and included information on nausea, pain, mobilization, temperature, heart rate and laboratory markers, such as CRP. Complications were scored using the Clavien-Dindo (CD) classification and two groups were formed according to this classification; the first group with minor or no complications (up to CD2) and the second group with major complications (CD3a and higher). Differences between both groups were analyzed with unpaired t-tests or nonparametric tests, based on suitability, with a significance threshold op $p<0.05$.

Results: 694 subjects were included in this study, of which 552 women and 142 men. Mean age was 42.6 years (±10.8) and mean BMI was 43.8 kg/m^2 (±5.8). 29 subjects developed a major complications within 30 days postoperatively. There were no significant differences in baseline characteristics between the group with minor or no complications and the group with major complications. Subjects with major complications were less willing for discharge due to complaints (14.8% vs. 3.7%, p=0.023), had a higher postoperative heart rate (84 bpm vs. 78 bpm, p=0.027) and had a higher decrease of hemoglobin level (0.97 vs. 0.61 mmol/l, p=0.002), compared to subjects with no or minor complications. 10 major complications (34.5%) occurred within 48 hours postoperatively. 8 of these patients (80%) did

not meet the discharge criteria and maintained in hospital until the major complication was resolved.
Conclusion: The patients willingness for discharge, in combination with their heart rate and the level of hemoglobin decrease, may be the best predictors of the occurrence of major complications after bariatric surgery. Furthermore, a postoperative checklist may be an adequate instrument to identify patients at risk for major complications and thereby play a part in the decision making of early discharge after bariatric surgery.

A5154
WEIGHT LOSS IS HIGHER AMONG PATIENTS WHO UNDERGO BODY-CONTOURING PROCEDURES AFTER BARIATRIC SURGERY
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Introduction: As the number of patients who have undergone bariatric surgery increases, it is expected that more patients will present for body-contouring procedure after weight loss. It has been shown that abdominoplasty can improve mobility, reduce skin fold complications and improve psychosocial functioning. No previous studies have evaluated weight loss in patients who pursue plastic surgery after bariatric surgery. The aim of this study is to evaluate weight loss outcomes in this population.
Methods: Patients who underwent body-contouring procedures following bariatric surgery between 2002 and 2014 were included. A comparison was made to a matched cohort based on age, gender, type of bariatric procedure, pre-operative BMI and length of follow-up.
Results: 186 patients had documentation of a body contouring procedure following bariatric surgery. There were 158 (84.9%) females in the body-countering group. Mean age was 48.5±12.7 years, BMI 49.8±10.4 kg/m^2. RYGB, SG and AGB were performed in 157 (84.4%), 17 (9.1%) and 11 (5.9%) in both groups respectively. Following a matched follow-up period of 61 months, total weight loss was 43.0±22.6 kg vs. 33.5±21.7 kg, ($p<0.001$), %WL was 30.8±11.4% vs. 24.0±13.2% ($p<0.001$) and BMI dropped by 15.7±7.8 kg/m^2 vs. 12.1±7.3 kg/m^2 ($p<0.001$) in the body contouring versus the control group, respectively.
Conclusions: Patients who underwent body-contouring procedures following bariatric surgery had significantly better long-term weight loss than a matched cohort of patients. This finding likely has many contributing factors and the association between long-term weight loss and body-contouring procedures after bariatric surgery requires more detailed study.

A5155
FACTORS ASSOCIATED WITH THE LENGTH OF STAY IN INTENSIVE CARE UNIT FOLLOWING BARIATRIC SURGERY
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Background: While uncommon, admission to the intensive care unit (ICU) after bariatric surgery may be necessary. This study evaluates characteristics of bariatric surgery patients that are admitted to the ICU, and stratifies possible risk factors for increased length of stay (LOS) in the ICU.
Methods: A retrospective review of all ICU admissions following bariatric surgery from 2006 to 2013 was performed. Demographics and perioperative data was extracted and risk factors for the LOS in the ICU were analyzed.
Results: 124 out of 4398 (2.8%) patients were admitted to the ICU following bariatric surgery. The mean age was 52.7±11.8 years and the cohort included 79 females (64%). There were 19 non-emergent or planned admissions (15.3%) and 105 emergent admissions (84.7%). Mean

BMI was 47.8±12.2 kg/m^2 and mean American Society of Anesthesiology (ASA) score was 3.1±0.6. Roux en Y Gastric Bypass (RYGB), Sleeve Gastrectomy (SG) and Adjustable Gastric Banding (AGB) were performed in 80 (65%), 18 (15%) and 6 (5%) patients, respectively. Revisional procedures were performed in 15 (12%) patients. Respiratory failure was the most common cause for admission occurring in 35 (28.2%) patients. The most common surgical complications requiring ICU admissions were bleeding and leak in 27 (21.8%) and 21 (17.0%) patients, respectively. Mean ICU LOS was 6.0±9.6 (1-65) days. Hospital mortality occurred in 5 (4.0%) patients. Based on univariate analysis, risk factors associated with ICU LOS were, conversion from laparoscopic to open approach, anastomotic leak and re-operation.
Conclusions: ICU admission rate following bariatric surgery is 2.8% in our series. Mortality is increased substantially in these patients. Surgical approach conversions, reoperation and anastomotic leak have the greatest impact in determining the LOS in the ICU following bariatric surgery.

A5156

BODY MASS INDEX VERSUS BODY COMPOSITION IN ASSOCIATION WITH METABOLIC DISEASES

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Background: Adiposity is directly related to development of metabolic diseases. Body mass index, the widely used parameter to determine nutritional status, is the mere relation between weight and height and it does not consider how the weight is distributed. Therefore, body composition and specifically body fat percentage (BFP) may be measured using bioelectrical impedance analysis (BIA). The aim of this study is to compare which parameter, BMI vs BIA, is better to predict the development of metabolic disorders.
Methods: Retrospective analysis of our BIA and obesity program database was performed. Patients submitted to BIA between March 2013 and November 2014 were followed. Demographics, anthropometrics, body composition and comorbidities were registered. Statistical analysis was performed with SPSS software correlating BMI and BFP with metabolic diseases.
Results: 440 patients were identified, median age 37 (15-73) years, 313 (71%) women, median weight 83.7(47.5-162.1), median BMI 30.6 (20.3-51.5), median BFP 40.8 (14.4-55.8). Comorbidities and their frequencies were as follows: Type 2 diabetes mellitus (T2DM) 10.3%, insulin resistance (IR) 36%, hypertension (HT) 23.6%, dyslipidemia (DLP) 34.4% and obstructive sleep apnea syndrome (OSAS) 2.7%. Table 1 shows p-values for associations between BMI and BFP with metabolic disorders.
Conclusions: BFP correlated better than BMI with T2DM and HT. Both measurements strongly correlated with insulin resistance. Our data suggests that although BMI may be a good clinical parameter too for assessing nutritional status, body composition should be considered as a more accurate measurement to determine the risk for developing cardiometabolic diseases. p values

	BMI	BFP
T2DM	0.66	0.001
IR	<0.001	<0.001
HT	0.93	0.04
DLP	0.67	0.32
OSAS	0.6	0.65

A5157

PAIN SENSITIVITY PREDICTS SEDENTARY BEHAVIOR IN BARIATRIC SURGERY CANDIDATES

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ASMBS

Background: Most bariatric surgery patients do not engage in recommended levels of physical activity (PA) and engage in sedentary behaviors (SB), such as TV watching, 72%- 81% of the time (Bond et al., 2011; Chapman et al., 2014). PA and SB are likely influenced by a number of biopsychosocial factors (Bond et al., 2006; Speck et al., 2014; King et al., 2012). Individuals experiencing pain may be less likely to be involved in PA (Janal, 1996; Janke, 2007). Depression and lower global cognitive functioning may also be associated with decreased PA and increased SB (Roshanaei-Moghaddam et al., 2009). This study hypothesized that pain sensitivity, cognitive dysfunction, and depression can predict increased SB and lower levels of PA in patients with obesity.

Methods: Following human subjects review board approval, a total of 41 participants were recruited from a bariatric and metabolic weight loss center located in New York. Their age ranged from 19 to 63 (M = 38.07, SD = 12.45) and their BMI ranged from 34.72 to 60.07 (M = 44.12, SD = 6.7). We obtained information pre-operatively as follows: (a) frequency of PA, perceived level of PA, and SB (average number of hours per day spent watching television) from the Weight and Lifestyle Inventory (WALI) (b) pain sensitivity and cognitive dysfunction from the Millon Behavioral Medicine Diagnostic (MBMD) questionnaire; and (c) depressive symptomatology from the Quick Inventory of Depressive Symptomatology (QIDS).

Results: Participants reported spending an average of 4.14 (SD=1.57) hours per day watching television and 65.9% of participants indicated exercising once per week or less. On average, participants rated their level of physical activity as a 4.81 (SD=2.41) on a scale ranging from 1 (very sedentary) to 10 (very active). Additionally, 22.0% of participants endorsed experiencing symptoms of depression that fell within the mild range, and 9.8% in the moderate range. Regression analysis indicated that pain sensitivity significantly predicted average number of hours spent watching television per day, $\beta = .386$, $t(39) = 2.61$, $p = .013$, even when controlling for BMI, age, and level of education, $\beta = .316$, $t(37) = 2.341$, $p = .025$. Pain sensitivity also explained a significant proportion of variance in average TV time, $R^2 = .15$, $F(1,39) = 6.83$, $p = .013$. The relationship between cognitive dysfunction and average time spent per day watching television approached significance, $\beta = .304$, $t(39) = 1.991$, $p = .054$. The relationships between pain sensitivity and frequency of physical activity, cognitive dysfunction and physical activity, depression and physical activity and depression and TV time were not statistically significant.

Conclusions: These data confirm previous findings that most patients preparing for bariatric surgery do not engage in adequate amounts of physical activity and spend a significant amount of time engaged in sedentary behavior. They also support the hypothesis that pain sensitivity can predict sedentary behavior and suggest that cognitive dysfunction may impact sedentary behavior. Hypotheses regarding the influences of depression, cognitive dysfunction, and pain sensitivity on level of physical activity were not supported. Overall, these results indicate that pain sensitivity and cognitive dysfunction may be important to assess in patients presenting for bariatric surgery and should be considered when designing interventions aimed to decrease sedentary behavior.

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A5158

SEXUAL FUNCTION EVALUATION IN PATIENTS UNDERGOING BARIATRIC SURGERY

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Background: Along with multiple other physical and psychiatric conditions, obesity has also been shown to adversely affect sexual function in both males and females. The sexual functioning of an obese man has been shown to be equivalent to that of a non-obese man 20 years older. Additionally, studies have indicated rates of female sexual dysfunction before bariatric surgery to be approximately 63%, and to frequently be accompanied by depression. Overall, published literature on the topic of improved sexual functioning after bariatric surgery remains sparse, and there are many different metrics being used to assess sexual functioning. The present study will describe the pre-operative sexual functioning of bariatric surgical candidates using the Sexual Functioning Questionnaire (SFQ), a commonly used measure that is novel in a bariatric population.
Methods: This was a descriptive pilot study. We performed a retrospective review of data obtained from patients who had completed the SFQ at their pre-operative and/or 1-year post-operative (9-15 months) clinic visit. The SFQ assess sexual functioning in both genders separately. The questionnaire contains 5 non gender-specific questions assessing prior sexual therapy, general sexual interest, sexual activity in the past week, enjoyment, and satisfaction with functioning. Patients are instructed to only answer questions about enjoyment, satisfaction with functioning, and the gender-specific questions if they were sexual active within the past week. The gender-specific sections assess frequency and ease of arousal, and frequency of issues related to sexual functioning in males (erection, ejaculation) and females (lubrication, orgasm). For the present study, we chose to focus on patients who had preoperative SFQ data in order to present preliminary findings while we continue to administer the metric to obtain longitudinal data. Statistics were conducted to describe the demographics, sexual activity and overall sexual functioning in 176 patients completing the questionnaire pre-operatively. A two-tailed Student's t-test was utilized for continuous normally distributed variables.
Results: Patients were 176 (76% female) adult patients scheduled to undergo bariatric surgery at our surgical weight loss program. The average age of female subjects was 45.0 years, and 45.2 years for males. The mean preoperative BMI for females was 44.6 kg/m^2, and 47.2 kg/m^2 for males. Of the females (N=134), 68% did not report sexual activity in the week prior to completing the SFQ. Of the males, 44% did not report sexual activity in the week prior to completing the questionnaire. Comparing the sexually active and non-sexually active females, there was statistically significant difference in age (46 vs. 42 years, $p<0.05$), and weight (269 vs. 250 pounds, $p<0.05$), but not in BMI. Comparing the sexually active and non-sexually active males, there was a statistically significant difference in age (48 vs. 39 years, $p<0.05$), but not in weight or BMI. On a five point rating scale (0=least, 4=most), females who were sexually active (N=39), on average, reported lower overall satisfaction with their sexual functioning (2.79 vs. 3.45, p=NS), enjoyment (2.43 vs. 3.0, $p<.05$), and interest in sex (1.59 vs.

3.1, p<0.01) before surgery than the sexually active males (N=13). Mean scores for sexually active females were 1.55 and 2.17 on difficulty with orgasm and adequate lubrication. No one in the sexually active group indicated previously receiving treatment for a sexual problem.
Conclusions: The results of this descriptive pilot study can help us better understand the sexual issues that patients are experiencing prior to bariatric surgery. In our sample, women reported lower overall functioning compared to men, and a lower proportion of females reported sexual activity in the week prior to survey completion. Sexual activity in the week prior to survey completion was affected by age in both genders and by weight in females. In addition to investigating predictive factors of improvement in sexual functioning after bariatric surgery, we plan to expand our analyses to include social factors, which may play a part in this interaction such as perceived social support, quality of life and marital satisfaction. Future research with this metric will help contribute to evidence-based practice guidelines for the surgical treatment of morbidly obese patients and help us better understand the improvements seen with bariatric surgery. Sexual functioning is an important factor in adult quality of life and is often overlooked or not discussed due to embarrassment or lack of access to appropriate resources. It is important to be able to counsel patients on expected improvements in sexual functioning following bariatric surgery to initiate this dialogue before surgery.

A5159

THE VALIDITY OF CENTERS OF EXCELLENCE FOR METABOLIC AND BARIATRIC SURGERY PROCESSES FOR A NON-ACCREDITED CENTER

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Background: Bariatric surgery outcomes in the US have seen a remarkable improvement. Nonetheless, the validity of Centers of Excellence (COE) accreditation has been widely questioned. Specifically, access to care and evidence of improved outcomes in accredited centers have been disputed. Data regarding non-accredited centers performing all procedures types (comprehensive) centers is scarce. The purpose of this study was to assess the laparoscopic bariatric surgery outcomes in a newly established non-accredited comprehensive center following accredited centers core standards.
Materials and Methods: A retrospective review was performed with Institutional Review Board (IRB) approval of all the patients that underwent laparoscopic bariatric surgery between February 2011 and March 2015. Standard accreditation processes of care were followed since the inception of the program. Patient demographics, and comorbidities were analyzed. Measured perioperative outcomes included in-hospital mortality, 30-day readmission, operative time, length of stay, ICU stay as well as major and minor complications.
Results: 283 patients underwent bariatric surgery at our institution. 83% were female, mean age was 45±11 (21-77) years, and had a median of 3 comorbidities/patient. Mean BMI was 43.8 ±10.2kg/m^2 (33-81), and 106 (37.7%) were super-obese. There were 144 (50.9%) laparoscopic sleeve gastrectomy, 66 (23.3%) laparoscopic gastric bypass, 3 gastric band (1%), and 70 (24.7%) laparoscopic revisional surgeries. The distribution of cases/year was: 40/2011, 64/2012, 64/2013, 89/2014, 26/2015. Operative time was 151±69min (morbid obese 136.4 ± 51.2, super-obese 133.8 ± 45.8, and revisional cases 200 ± 94). Complications occurred in 5 patients (1.8%), with no conversions to open surgery in the primary procedure and no 30-day mortality. There were 3 reoperations (1%). The median length of stay was 2 days (0-11), and 5 patients (1.7%) were readmitted within 30-days.
Conclusions: This study demonstrated that performing all procedure types, including complex cases, despite lower volumes than accredited centers did not increase the in-hospital morbidity and mortality. Suggesting that laparoscopic bariatric surgery can be safely performed at a non-accredited center if processes of care similar to accredited centers

are followed. Therefore, accreditation remains essential in metabolic and bariatric surgery.

A5161

DOES BARIATRIC SURGERY IMPACT GYNECOLOGIC CANCER OUTCOMES?

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Introduction: Obesity is an established risk factor for many cancers and is thought to adversely affect disease outcomes. Alterations in estrogen and other hormone metabolism in the obese have been postulated to increase the risk of gynecologic malignancies, including uterine and ovarian cancers. The impact of significant and sustained weight loss as achieved by bariatric surgery on gynecologic cancers is not well understood.
Methods: We performed an institutional retrospective review of patients who underwent bariatric surgery and were diagnosed with premalignant or malignant uterine and ovarian disease from 1989–2014. We compared patient demographics, tumor characteristics, surgical treatment, and cancer specific outcomes in patients diagnosed with uterine and ovarian cancers before ("BEFORE" group) or after ("AFTER" group) undergoing bariatric surgery.
Results: 59 cases were identified; 63% with uterine and 37% with ovarian malignancies. Patients in the AFTER group were older at the time of cancer diagnosis(table 1).The median BMI at the time of bariatric surgery was 50 and 54 kg/m^2 in the BEFORE and AFTER groups, respectively. However, the median BMI at the time of cancer diagnosis was identical in both groups (45 kg/m^2). The type of bariatric operation in the groups differed, with twice as many adjustable gastric bands (AGB) performed in the AFTER group (20% vs. 42%, p=0.07). Patients in the AFTER group were diagnosed with cancer on average 2 years after bariatric surgery. There were no significant differences in tumor size, grade, surgical margins and disease recurrence found between the two groups. Of note, 6% of patients with uterine cancer in the BEFORE group had oncologic treatment plans explicitly altered as a result of obesity.
Conclusions: In this study, outcomes of uterine and ovarian cancer were not influenced by the time of diagnosis relative to bariatric surgery. However, in this cohort, patients were morbidly obese at cancer diagnosis, even after bariatric surgery. Future studies of the impact of more effective weight loss operations (e.g. gastric bypass or sleeve gastrectomy) on gynecologic cancer may be warranted.

A5162

ROUX-EN-Y GASTRIC BYPASS FOR NON-BARIATRIC PURPOSES

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Introduction: Roux-En-Y Gastric bypass (RYGB) is frequently performed for weight loss purposes and its outcomes are largely published. However literature findings for performing gastric bypass on non bariatric population (BMI < 35 kg/m2) is scarce. The study's aim was to access and analyze patients that underwent RYGB for non-bariatric purposes, categorizing their non-weight loss surgical indications.
Materials & methods: After IRB approval a retrospective descriptive analysis of the population who underwent RYGB for non-bariatric purposes was conducted from May 2001 to January 2014. The RYGB surgeries were defined as primary, revision, and conversion. Patients were contacted with an IRB-approved phone contact questionnaire. The questionnaire constituted of 8 simple questions assessing the quality of life of the patients post-operatively. Microsoft Excel was used for the management of data and the calculation of mean (range) ± SD. $P < 0.05$ was defined as statistical significant.
Results: In our study, 59 patients, 17/42 (M/F) with mean age 56.64 ± 14.64 years (range, 22–85), underwent open (n = 6) and laparoscopic (n

= 53) RYGB for non-bariatric purposes. The mean BMI was 29.64 ± 8.54. Regarding the reason for the RYGB performance, 27/59 (45.5%) patients had RYGB as a primary operation, 29/59 (49.1 %) patients as a conversion of a previous gastric operation to RYGB and 3/59 (5 %) patients as a revision of RYGB. The main diagnosis for performing RYGB was: 22/59 (37.28 %) for catastrophes after previous operation (leaks, fistulas), 19/59 (32.2%) for gastric cancer, 11/59 (18.64 %) for gastroparesis, 6/59 (10.16%) for GERD and 1/59 (1.69 %) for Superior Mesenteric Artery syndrome. Overall the mean follow up was 12.77 (SD ± 17.88) months among laparoscopic group and 16.08 (SD ± 29.06) months for the open group. Intraoperative complications in the laparoscopic group were bleeding (1.69 %, n=1/59) and iatrogenic bowel perforation (1.69 %, n=1/59). In the open group, the only complication recorded was bleeding (3.39 %, n=2/59). The number of overall complications was 10 for laparoscopy and 1 for the open group, *p=0.237*. The most frequent early postoperative complications were obstruction (n=3/59, 5.084 %) and anastomotic leaks (n=2/59, 3.39 %) in the laparoscopic group, vs. dumping syndrome (n=1/59, 1.69 %) in the open group. From 59 patients, 7 have deceased (11.86 %). Eighteen of the 52 answered the questionnaire. Table 1 described the results based on the indication for surgery.
Conclusion: In our study of RYGB for non bariatric reasons we found that 6.7% presented intra operative complications, 18.1% early postoperative complications and 37.2% late post-operative complications. Although RYGB can be safely performed for non bariatric purposes like gastroperesis, GERD, gastric cancer or after a catastrophy from a previous surgery, the complication rates seems to be higher than for bariatric reasons.

A5163

A PROSPECTIVE STUDY OF THE CLINICAL, ANTHROPOMETRICAL AND BIOCHEMICAL IMPROVEMENT FOLLOWING A MANDATORY WEIGHT LOSS OF AT LEAST 10% BEFORE BARIATRIC SURGERY

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Introduction: Bariatric surgery is currently considered the best treatment for morbid obesity and it´s comorbidities. Obesity is associated to elevated surgical and anesthetic risk due to the multiple pathologies related to it. Some authors consider that a reduction of at least 10% of excess weight can improve health status, thus reducing peri and postoperative morbi-mortality, especially in bariatric surgery. Despite this, if preoperative weight loss is mandatory before bariatric surgery continues to be a matter of debate.
Methods: Prospective study including all patients submitted to bariatric surgery in a single Institution from January 2013 to January 2015. A preoperative diet was prescribed to all patients (females 1200 kcal; males 1500 kcal) during preparation period, and surgery was offered only to patients with at least 10% of excess weight loss (%EWL). The primary objective was to analyze changes in weight loss (BMI and %EWL) and their preoperative impact over biochemical (plasma glucose, HbA1c%, total cholesterol, HDL, LDL, triglycerides, ALT, AST and uric acid) and clinical parameters (systolic and diastolic BP). Secondary, a perioperative and early morbidity (< 30 days) analysis was performed.
Results: A total of 200 patients (184 Gastric Bypass and 16 Sleeve Gastrectomy) were included in the study. Female sex comprised 81.5% of cases, with a mean age of 38.3 ± 9.1 years. The mean time between diet onset and surgery was 102.9 ± 40.9 days, resulting in an EWL of 22.2%. There was a significant improvement in every measured parameter, except for the HDL cholesterol and uric acid. (Table 1) Regarding perioperative variables, mean surgical time was 170.9 ± 43.3 minutes

with a mean hospital stay of 3.1 ± 0.4 days. There were 20 (10%) early complications (9 mayor/11 minor) with no leaks and no mortality. Reoperation by any cause was observed in 2 patients. (Table 2)
Conclusions: A mandatory loss of at least 10% of excess weight loss before bariatric surgery ensures an optimal health status of candidates, based on the significant improvement of their metabolic, lipid, hepatic and clinical profiles. Other impact of weight reduction could include less operative time, faster improvement of associated comorbidities and better long term results, but further studies are required to establish more benefits of such loss.

A5164
PREOPERATIVE OUTCOMES AND WEIGHT LOSS IN SUPER-SUPER OBESE MALE PATIENTS
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Introduction: Body Mass Index (BMI) is an independent predictor of overall mortality and risk of vascular disease. In the U.S., obesity (BMI >40) rates are 32.6% among males and 36.2% among females. Bariatric surgery is associated with weight loss and the reduction of certain medical comorbidities in obese adult patients However, there is limited literature regarding male sex as a predictor of peri- and post-operative outcomes in super-super obese patients who underwent bariatric surgery. The aim of this study was to examine whether male sex predicts pre-surgical co-morbidities, perioperative outcomes and % excess weight loss in super-super obese patients who underwent bariatric surgery.
Material and Methods: This study was a nonrandomized, controlled, retrospective review of 750 patients who underwent sleeve gastrectomy (SG) or Roux-en-Y Gastric Bypass (RYGB) surgery at the University of Illinois Hospital and Health Sciences System from January 2008 to June 2014. From this group, 89 SSO patients were selected for inclusion in this study. Patients were divided into two groups (male/female) based on sex. Patient demographics, pre-surgical comorbidities, perioperative outcomes, post-operative complications (leak and conversions to open surgery), operating time, length of hospitalization, and percent excess weight loss (% EWL) at 6, 12 and 24 months were examined.
Results: Out of 89 super-super obese patients, 19.1% (n=17) patients were male and 81.9% (n=62) were female. In males, 52.9% (n=9) were African-American, 41.2% (n=7) were Caucasian, and 5.8% (n=1) were Hispanic ($p<.05$). All male patients underwent SG. There were no significant sex differences in pre-surgical comorbidities, length of hospitalization, or post-operative complications (1 vs. 0) between males and females, respectively. Perioperative parameters showed operative time was longer in males versus females ($p<.05$). Percent excess weight loss at 6 months was 24.2% vs. 32.7%, (n.s.), 34.3% vs. 47.9% at 12 months ($p<.05$) and 35.3% vs. 52.7% at 24 months (n.s.) follow-up for males and females respectively.
Conclusions: Male sex predicted longer operative time and lower % excess weight loss at 6 months. A larger sample size with longer follow up is warranted in order to further understand reasons for the sex differences in these variables in order to improve weight loss outcomes in both males and females.

A5165
THE OROTRACHEAL INTUBATION IN THE OBESE PATIENT WITH VIRTUAL RIGID FIBROSCOPY UNDER DEEP NEUROMUSCULAR BLOCKADE
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Document the orotracheal intubation with the virtual fibrosocopy in obese patients with predictive signs of difficult intubation, as a

technical viable, practical and safe in intubation under a deep neuromusculary blockade 35 patients from 20 to 60 years old ASA II y III, with at least trhee predictor signs of difficult airway and three of difficult intubation. Considering as predictors of difficult ventilation: BMI >26 kg/m², beard presence, teeth absence, OSA. Age> 55 years old. And considering as predictors of difficult ventilation Mallampati test Class III-IV, Thyromental distance < 6.0 cm. Sterno-mental distance < 11 cm. Thick tongue. Oral opening <3cm. Atlanto-occipital gap. Anterior/posterior depth of the mandible Class III, neck circumference >40 cm. Inducement with neuromuscular blockade based on rocuronium 0.7 mg/kg, corrected weight. Pre-oxygenation. Direct laryngoscopy. Rigid fiberscope migration until the base of the tongue. Larynx visualization and fiberscope advance until epiglotis, Endotracheal tube migration. Direct laryngoscopy. Rigid fiberscope migration until the base of the tongue. Larynx visualization and fiberscope advance until epiglotis., Endotracheal tube migration. Results: 35 patients age average of 45.3, with BMI of 35 to 71kg/m2 with and average weight of 46 kg/m2. And 95% with more tan 3 predictors of difficult intubation and 4 of difficult ventilation with a neck circumference of 48-62 cm with an average of 53 cm. Successful intubation in 97% of patients. Average time of 90.2 seconds, requiring a second try in one of the cases. Oxygen saturation over 90% with neuromuscular blockade. Pharynx pain in two patients. The use of virtual rigid fiberscopy is a safe and optimal alternative for the obese patiens It can be in the obese patient under deep neuromuscular

A5166

PROS AND CONS TO ESTABLISH A POLITICAL ACTION COMMITTEE (PAC) TO INFLUENCE OBESITY PREVENTION AND TREATMENT SERVICES

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Political Action Committees or PACs provide a legal mechanism whereby corporations as well as not-for-profit associations and others may participate in federal and state politics. A PAC may offer an opportunity for not-for-profit obesity-related organizations to participate and have their voice heard during federal election campaigns, as well as after the elections. The Federal Election Campaign Act regulates how corporations, not-for-profit associations and other organizations can legally participate in federal election activities. The Act includes a number of restrictions on which not-for-profit associations can form a PAC, how much money a PAC may contribute to candidates seeking public office, who a PAC may solicit for contributions as well as how much money individual members of an association may contribute to a PAC. During this session we will provide an overview of the basic rules to establish a PAC associated with a not-for-profit association and the impact a PAC can have in furthering obesity prevention and treatment services.

A5167

MULTIVITAMINS SUPPLEMENTATION IN PATIENTS AFTER BARIATRIC SURGERY AT THE MAIN PUBLIC CENTER OF BARIATRIC SURGERY IN MEXICO

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Background: Nutrient deficiencies are the most common secondary effect after bariatric surgery. No ideal bariatric supplement regimen or consensus is available in Mexico. Multidisciplinary team follow up is essential to achieve an adequate supplementation in order to avoid malnutrition.
Methods: A cross-sectional study to evaluate nutritional supplementation was performed in patients who underwent either Gastric Bypass or Sleeve Gastrectomy from November 2010 to April 2014 at CLIO. Sample size was calculated with 95% confidence level and 5% confidence interval. Demographic variables, supplementation of Multivitamin (MV), Calcium (Ca), Iron (Fe) and Vitamin B12 (VB12) and

consumption of pill and related symptoms were obtained through a direct blinded questionnaire. Data analysis was performed using SPSS v20, T student test was used in the analysis of variables considering $p \leq 0.05$ as significant.
Results: Questionnaires were applied to 258 consecutive patients. 81% patients were female, with an age 39.2±10.2 years. Supplementation schemes observed were: MV/Ca/Fe in 14.7%, MV/Fe in 22.9%, MV/Ca in 38.4%, MV in 15.5% and no supplements in 6.2% patients. Addition of VB12 (after 6 months) was used in 4.3% patients. The supplements were consumed as: whole pill (75%), crushed (9.7%), half a pill (3.5%), diluted (2.8%) and chewed (2.1%). 24.4% patients referred 1 symptom (4.9% pain, 4.7% stocked; 9.3% bad taste) whereas 5.4% had >1 symptom.
Conclusions: Our report shows that patients maintain the MV supplementation however; consumption of Ca, Fe VB12 is compromised. Possible reasons could be an elaborated regimen with multiple pills and the presence of symptoms. There is a need for an easier and standardized scheme to promote ideal supplementation.

A5168

PREVALENCE OF NONALCOHOLIC FATTY LIVER DISEASE IN 750 MORBILY OBESE PATIENTS

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Background: Nonalcoholic fatty liver disease (NAFLD) is the most frequent liver disease in the Western world and it is highly related to obesity. NAFLD is not correlated with increased morbidity or mortality, but its progression to Nonalcoholic Steatohepatitis (NASH) increases the risks of cirrhosis, liver failure and hepatocellular carcinoma. Therefore, it's important to know the prevalence of NAFLD in morbid obese patients.
Methods: We analyzed data of 750 patients, BMI $\geq 40 Kg/m^2$ who were submitted to surgery for morbid obesity at Centro de Obesidade e Síndrome Metabólica do Hospital São Lucas da PUCRS, Brazil. Liver biopsies made by fine needle aspirations at the beginning of the surgery were analyzed during the period 2011-2013. Were evaluated gender, BMI, waist, age and comorbidities. The patients' informed consents were obtained preoperatively.
Results: Most patients were female (74.4%) with a mean age of 37.9 ± 10.4 years old. The mean BMI was 48.6±7.4 Kg/m^2, and the mean waist was 134.7±14.5cm. 419 (55.9%) had systemic arterial hipertension, 355 (47.3%) dyslipidemia, 165 (22%) T2DM. All liver biopsies had 6 or more portal fields. The prevalence of NAFLD was 100% in the patients analyzed. 31.1% had only steatosis; 12.9% mild, 9.3% moderate, 8.8% severe and 68.9% had steatohepatitis; 10.8% with mild steatosis, 22.4% with moderate steatosis, and 35.6% with severe steatosis. Only one patient (0.1%) had cirrhosis.
Conclusion: The study shows a high prevalence of NAFLD between morbid obese patients, especially in the most severe form.

A5169

IMPACT OF THE IMPLEMENTATION OF AN EDUCATIONAL CURRICULUM AND ASSESSMENT TOOL IN A SIX-MONTH INSURANCE MANDATED BARIATRIC PRE-OPERATIVE WEIGHT LOSS PROGRAM

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Introduction and Objectives: Insurance companies may require that a patient complete 3 to 6 consecutive months of a pre-operative weight loss (POWL) program prior to bariatric surgery. No standardized curricula for POWL exists, and the impact of POWL on patients has

had mixed results when the magnitude of pre-operative weight loss is used as a predictor of post-operative outcomes.[1-4] However, the impact of pre-operative education, independent of weight loss, on post-operative outcomes is largely unknown. Hence, the present study was undertaken to assess whether knowledge gained through a curriculum designed to improve patient understanding of bariatric nutritional and behavioral concepts has an impact on pre-operative weight loss and ultimately on post-operative outcomes.
Participants: 40 Adult patients with a BMI > 35 kg/m^2 seeking bariatric surgery required to attend six months of insurance-mandated POWL classes agreed to participate in this project.
Study Design: An 11-point quiz was provided (n=40) at the first and last POWL class, in a series of 6 monthly classes. Patient knowledge of strategies associated with positive changes in eating behaviors, dietary intake, and reduced post-operative complications was tested. Weight was at each monthly POWL class.
Procedures: The POWL curriculum emphasizes nutrition and behavior concepts linked to positive long-term post-operative outcomes including hydration, protein needs, post-operative complications, and general weight loss strategies. Classes were taught by a bariatric clinician: registered dietitian, physician assistant, or psychologist. Weight was measured in pounds to the first decimal place at each monthly class. A 0.5% increase or decrease from the initial weight obtained at the first POWL visit was defined as a change in weight.
Results: There was a significant difference between the measured pre-POWL weight (M=301.9, SD=83.9) and the post-POWL weight (M=295.0, SD=82.1); t(39)= 2.67, p=0.01). Seventy percent (28/40) of patients lost weight (Table 1). **Table 1. Average Percent Weight Change by Weight Change Classification (see attached)** There was a significant difference between the pre-POWL quiz score (M=5.9, SD=2.1) and post-POWL quiz scores (M=9.1, SD=1.9); t(39)=-11.7, p < 0.001. Ninety-five percent (38/40) of patients' scores improved post-POWL (Table 2). **Table 2. Quiz Score Classification of Study Population (see attached)** There was no significant correlation between the post-POWL quiz score and change in weight (r = -0.073, p=0.7), nor between the change in POWL quiz score and change in weight (r = 0.22, p=0.2).
Conclusions: Overall, the curriculum was effective in improving patient knowledge of important nutritional and behavioral concepts. While there was a significant difference in pre- and post-POWL weight, and the majority of patients lost weight during the 6-month period, the average weight loss was modest, at less than 5%. In addition, there was not a significant correlation between POWL quiz score and weight loss. Further validation of the POWL quiz may be undertaken in order to better utilize this tool in the pre-operative bariatric population. Lastly, further research may gather post-operative outcomes.
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A5170

DETERMINATION OF PREDICTIVE VARIABLES ASSOCIATED TO DIFFICULT TRACHEAL INTUBATION IN A COHORT OF OBESE PATIENTS WHO UNDERWENT BARIATRIC SURGERY

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Background. About 35% of the airway problems at induction in anesthesia occur in obese patients. BMI is not a risk factor for difficult tracheal intubation, however other conditions associated with obesity, such as OSA and an increased neck circumference, have been demonstrated as risk factors for difficult tracheal intubation. Airway management in the obese patient remains a challenge for the anesthesiologist. The aim of this study was to determine the risk factors potentially associated to difficult tracheal intubation in obese patients who underwent bariatric surgery.
Patients and methods. All obese patients who underwent bariatric surgery between 2005 and 2013 were included. For the analysis, difficult tracheal intubation was considered when the Cormack Lehane score was III or IV at the moment of laryngoscopy or when more than 2 attempts were necessary for intubation. Microsoft Excel and IBM® SPSS® Statistics version 21.0 was used for analysis. Univariate and bivariate analysis were performed to assess variables distribution and potential statistical associations/correlations. Any p value ≤ 0.05 was considered as statistically significant for a two-tailed analysis.
Results. From a total of 608 obese patients undergoing bariatric surgery, 15.78% fulfilled the clinical diagnosis of OSA using a modification of the STOP-BANG questionnaire. Approximately 43% were male. Mean±SD age was 43.2±11.4 years BMI was 42.4±6.6 Kg/m^2 and neck circumference 41.6±5.1 (range 30-60 cm). Snoring was present in 96.6% of our patients. OSA was diagnosed in 171 out of 608 patients (28.1%). Nearby 32% of the patients were using CPAP. The incidence of difficult tracheal intubation was 11.8% in all patients (72/608) but 15.8% in OSA patients (27/171), which resulted statistically significant (*Fisher's exact test; p=0.04*). In the preoperative evaluation, 33.9% of males had Mallampati III-IV whereas only 14.8% of females had III-IV (*Kendall's tau-b; p=0.0001*). The correlation between Mallampati and the number of intubation attempts was significant (*p=0.0001*). There was also a close correlation between neck circumference and gender (*T-test; p=0.001*), and Cormack and gender (*Tau de Kendall; p=0.04*). We found the following risk factors for difficult tracheal intubation in obese patients: obstructive sleep apnea OR=1.63 ($p=0.04$; $IC_{95\%}$ *0.9-2.7*), male gender OR 2.52 ($p=0.0001$; $IC_{95\%}$ *1.51-4.22*), neck circumference ≥ 40 cm OR 2.92 ($p=0.0001$; $IC_{95\%}$ *1.6-5.3*), Mallampati ≥ III OR 2.44 ($p=0.0001$; $IC_{95\%}$ *1.4-4.2*) and age ≥40 years old OR 2.11 ($p=0.003$; $IC_{95\%}$ *1.3-3.6*). Multiple logistic regression showed high scores with statistical significance for some variables included in the bivariate analysis such as the Mallampati (*Score 5.9; p=0.02*) and the number of intubation attempts (Score *19.1; p=0.001*).
Conclusions. In our bariatric center, the frequency of difficult tracheal intubation was 11.8% in general patients and 15.8% in patients with OSA. The presence of OSA was also a risk factor for difficult tracheal intubation as well as male gender, neck circumference ≥ 40 cm and age ≥ 40 years old. These features should be assessed preoperatively for planning a careful approach for a potential difficult airway.

A5171
CLINICAL PHARMACY BARIATRIC SURGERY CONSULT SERVICES

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Background: The AACE/TOS/ASMBS 2013 Clinical Practice Guidelines for the Perioperative Nutritional, Metabolic, and Nonsurgical Support of the Bariatric Surgery Patient provide checklists for optimal preoperative and postoperative care of the bariatric surgery patient. These checklists include medical history and adjustment of medications. ASMBS also supports, in various guideline statements, a multidisciplinary team based approach to the care of the bariatric surgery patient. On the interdisciplinary team, pharmacists are ideally suited to provide medication optimization and to guide perioperative medication management specific

to the bariatric surgery patient. Pharmacist expertise can be especially helpful in predicting or managing the effects of bariatric surgery on the disposition of certain medications given the paucity of literature on the topic. One previous model of a pharmacy consult service for bariatric surgery at a large academic medical center has been shared. We describe herein the activities and opportunities of the pharmacist on the bariatric surgery team currently begin performed at the Phoenix VA Health Care System and at CHI Health Immanuel, part of a private hospital system, in Omaha, NE. The bariatric surgery program is new at the Phoenix VA Health Care System and has navigated around 15 patients within the last year and growth is expected to continue. Approximately 250 procedures per year are performed at CHI Health Immanuel, the vast majority of which are laparoscopic sleeve gastrectomy and Roux-en-Y gastric bypass.

Methods: *Preoperative*- A standardized referral process is initiated between the Bariatric Coordinator and clinical pharmacist within a few weeks prior to surgery. Initial clinical pharmacy meeting includes formulation changes (ex: extended release forms to immediate release or liquid forms) and medication/disease state management (ex: adjusting insulin, anticoagulation recommendations). Special attention is given to psychiatric medications and narrow therapeutic index medications. The pharmacist implements these changes as part of the pre-surgical pharmacy checklist, orders any pertinent or related labs, and initiates medical specialty team communication regarding medication changes as appropriate for continuity of care.

Perioperative: Upon admission to the surgical unit, the bariatric pharmacist reconciles the home medications to resume necessary medications in appropriate doses and dosage forms. The pharmacist also serves as a dedicated resource to the team for any medication related issues during the patient's stay such as optimization of antimicrobial surgical prophylaxis, VTE prevention, analgesia, or fluid and electrolyte management specific to the bariatric surgery patient. At discharge, the pharmacist again reconciles the home medications and educates the patient on all medication changes. The bariatric pharmacist is also involved in the development and implementation of bariatric surgery order sets and protocols as they pertain to medications.

Postoperative: Starting two weeks post-operatively in conjunction with the Bariatric Coordinator appointments, patients are evaluated by the clinical pharmacist for any medication related problems and medication adherence. At this visit the clinical pharmacist titrates medications as clinically appropriate, especially those for diseases that respond rapidly to bariatric surgery such as hypertension and diabetes mellitus. Any lab orders needed for optimization of the medication regimen or safety monitoring are entered and the clinical pharmacist notes and recommendations are shared via electronic chart notification with primary and specialty teams (ex: cardiology, endocrinology, psychiatry).

Conclusion: Many bariatric surgery patients have co-morbidities that often require multiple or complex medication regimens. Pharmacists can provide a valuable expert service to the bariatric surgery team by optimizing the patient's medications pre, peri, or postoperatively. They can also communicate those changes with the patient's other healthcare providers as appropriate to maintain continuity of care.

A5172

A HIDDEN DANGER: CASE REPORT OF MASSIVE DESMOID TUMOR IN A POST-BARIATRIC SURGERY PATIENT

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Desmoid tumors represent a type of rapid growing intraperitoneal cancer that tends to be locally invasive and does not commonly metastasize to the abdominal cavity. They arise from fibroblasts within the aponeurosis of where muscle attaches to bone or within old scar tissue. Desmoid tumors typically invade adjacent structures such as abdominal organs and blood

vessels as they grow, often surrounding these structures and necessitating the need for en-bloc resection. Their definitive treatment is commonly surgical, but they are prone to reoccur. In our current case study we describe a 44 year old patient who presented with shortness of breath, nausea, and crampy abdominal pain which was initially attributed to her past history of gastrointestinal symptoms 2 years status post sleeve gastrectomy. Using computer-assisted tomography the patient was found to have an approximately 17cm mass located in the left abdomen that compressed the stomach, and displaced the bowel, pancreas, left kidney, and spleen. The patient underwent an exploratory laparotomy, lysis of adhesions, resection of the intra-abdominal mass, distal pancreatectomy, splenectomy, partial gastrectomy with Roux-en-Y reconstruction, intraoperative esophagogastroduodenoscopy, and placement of a drain. The procedure itself was complicated by the extensive size of the tumor, the patient's previous abdominal surgery with altered anatomy, and extensive adhesions to surrounding viscera and peritoneum. Following surgery pathology reported the mass to be a desmoid tumor with invasion into adjacent pancreatic tissue and negative margins of resection. This case illustrates how an intraperitoneal tumor was able to grow to massive size due to a patient attributing her acute symptoms to her past surgical history. Desmoid tumors are rapidly growing cancers that can present with obstructive symptoms such as weight loss, abdominal discomfort, nausea, and vomiting. They are often discovered with are radiological studies; including CT scans, abdominal x-rays, or MRIs, but they can only be definitively diagnosed after careful pathological study of surgical specimens, with biochemical assays and histological staining.

TOPIC: Integrated Health

A5173

SUPPORTING SUPPORT GROUPS: A FORMAL BARIATRIC MENTOR PROGRAM RESULTS IN IMPROVED SUPPORT GROUP ATTENDANCE AND PARTICIPATION

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Introduction: Attendance and participation at support groups has been correlated with improved long-terms outcomes for bariatric patients, yet many hospitals report low attendance at their bariatric support groups. Holding regular support groups (facilitated by a licensed medical professional) is a Center of Excellence (COE) requirement. At a rural (COE) hospital in Northern California (Enloe Medical Center), a formal mentor program was introduced with surprising effect on support group attendance.

Methods: A formal mentor program was established in January 2014. Bariatric patients, who demonstrated compliance with post-operative care instruction and lifestyle change behavior, were invited to attend a two-day training class, as well as meet the requirements of becoming a formal volunteer of the hospital. Mentor support/accountability groups were established to provide guidance and ongoing education for the mentors. Each mentor was assigned an average of 1-2 new patients per month. Mentors were invited to participate in support groups by choosing topics, co-facilitating groups, or presenting information at groups. Mentors text or call their active mentees to invite them to each support group. Support groups were also announced with recurring email blast and with social media. Additional interventions included: creating a calendar of events for the entire year profiling many of the mentors and listing speakers, topics, and availability of internet streaming at support groups. Because of the leadership of the mentors, a support group was established in a community 75 miles north of our hospital to serve patients living in that region.

Results: Support group attendance has consistently improved and mentors regularly participate in the leadership roles for these groups. Attendance has improved from an average of 31 patients monthly in the first quarter of 2013 to an average of 51 patients monthly in the first quarter of 2014 and to 80 patients monthly in the first quarter of 2015. Twelve mentors completed their training in January 2014 and an additional twelve mentors completed their training in October 2014. Currently, there are 20 active bariatric mentors.
Conclusion: Attendance and participation in our monthly bariatric support groups has significantly improved with the addition of a formal mentor program. Mentors are required to go through specialized training, become volunteers of the hospital, and attend separate support/accountability groups. Mentors participate in support groups as leaders and regularly invite their active mentees. A calendar of events is provided to all new patients. Additional access both online and in person at regional support groups has developed as a result. Establishment of a formal bariatric mentor program has resulted in greatly increased attendance and participation in our bariatric support groups. This has previously been shown to correlate with improved long-term outcomes after bariatric surgery. Formal demonstration of an additional mentor-mentee effect on outcome will be presented in the near future.

A5174

IMPACT OF URINARY STRESS INCONTINENCE (USI) ON PSYCHOLOGICAL, SOCIAL AND SEXUAL FUNCTIONING BEFORE AND AFTER BARIATRIC SURGERY

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Background: Urinary Stress Incontinence (USI) is a known co-morbidity of obesity and may have an adverse impact upon Psychological, Social and Sexual Functioning (PSS). The purpose of this study was to examine the incidence of USI among bariatric surgical candidates and determine if there is an improvement in PSS related to USI in patients after bariatric surgery.
Methods: The study population included 150 severely obese patients (BMI=46$\pm$17) undergoing bariatric surgery. Among the population, 23 patients (20 females, 3 males) reported to the clinician that they had USI. Psychological, Social, and Sexual Functioning (PSS) were evaluated using 1 to 10 scales of symptomatology before and 6 months following bariatric surgery.
Results: With bariatric surgery, patients lost an average of 25.92kg, for a total % change in BMI 22.28%. Along with weight loss were significant improvements in USI and associated PSS functioning. At 6 months, nearly half (47.8%; n=11) of patients with USI, symptoms completely resolved post-surgery and, in 12 out of 23 patients (52%), symptoms improved. A mean improvement in psychological functioning scores for USI patients were also found post-operatively, i.e. 7.48 to 2.5, as were scores on the scales representing social and sexual functioning, i.e. 6.91 to 2.5 and 6.74 to 2.0, respectively.
Conclusion: Bariatric surgery improves or resolves USI, along with highly significant improvement in PSS quality of life.

A5175

PATIENT NAVIGATION: FACILITATING BARIATRIC SURGERY IN AN UNDERSERVED MINORITY POPULATION

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Background/Significance: Bariatric surgery is the most effective long-term treatment for obesity, yet less than 2% of the patients undergo surgery. The preoperative process is lengthy and arduous, and thus conversion to surgery rates is low. Hispanic and non-Hispanic black populations demonstrated the highest rates of obesity from 1999-2010, yet most studies describe predominantly white patient groups. Our institution is unique as a high-volume bariatric center with a largely

underserved minority population where compliance and follow up is low. The impact of patient navigators has been described in other settings but has not been studied in the bariatric process.
Study Methods: A single institution, prospective, clinical database was retrospectively queried for patients who underwent bariatric procedure from 2010-2014. Patient navigation services were implemented in October 2012. We then studied time to surgery (Initial visit to surgery) and conversion to surgery before and after the implementation of the patient navigator.
Results: The study population included 6258 patients: 53% Hispanic, with 27% non-Hispanic black/African-American and 11% non-Hispanic white/Caucasian. Average BMI was 47 kg/m^2 (range 30-92). Prior to instituting a patient navigator, average time to surgery was 369 ± 208 days. After the introduction of patient navigator, patients reached the OR significantly sooner, 237 ± 75 days ($p<0.01$). Percent conversion to surgery was 33% for both before and after the introduction of patient navigator.
Conclusions: Although patient navigators do not increase the conversion rates of initial patients to surgery, they significantly decrease the time to surgery.

A5176

THE INFLUENCE OF A RURAL ENVIRONMENT ON PATIENT ACCESS AND OUTCOMES FOR BARIATRIC SURGERY

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Abstract Background: A higher rate of chronic diseases including obesity and related comorbidities are seen in rural populations as compared to urban-dwelling populations. This translates into higher rates of all-cause mortality. Despite an increased prevalence of morbid obesity in the rural population there is a 23% decrease in performed bariatric procedures in a rural populations as compared to urban-dwelling populations. The influence of a rural environment on surgical outcomes and treatment efficacy is unknown. We hypothesized that rural environments decreased access to care and negatively influenced bariatric surgery outcomes.
Methods: We retrospectively reviewed bariatric surgeries performed in a large university hospital from September 2012 to September 2014 in a state with a predominately rural population, West Virginia. Subjects were categorized based on their Rural-Urban Commuting Area Codes (RUCA), a scale used by the United States Department of Agriculture to determine degree of urbanization. Subjects age, gender, RUCA score, insurance provider, type of surgery, completion of program, pre-operative BMI, total and excess weight loss at 6 months and 12 months post-operatively, percentage of follow-up, and comorbidity resolution were collected. Logistic and linear regression analyses were conducted to compare rural versus urban subjects.
Results: In 24 months, 122 patients were evaluated for bariatric surgery with a total of 82 patients receiving bariatric surgery within the time frame examined. Of patients receiving bariatric surgery in the study, 77 had Roux-en-Y gastric bypass, 5 had sleeve gastrectomy, and 0 had adjustable gastric banding. Rural subjects were 0.283 times less likely to complete the bariatric program and receive a bariatric surgery, (p = .004). However, this relationship was confounded by insurance provider; after controlling for this variable, the relationship between rural status and surgery completion was non-significant (p = .066). For patients who completed surgery, rural status did not predict weight outcomes at six-months (p = .848) or twelve months postoperatively (p = .143). Rural status did not predict compliance for follow-up appointments (p = .232).
Conclusions: Rural bariatric patients have decreased success at completing bariatric programs which is likely confounded by their insurance provider. Yet, when the rural patient is able to realize the benefits of bariatric surgery their outcomes are unchanged compared to urban patients. This study highlights the need for reducing obstacles for bariatric surgery in an already underserved population, the rural community.

A5177

COMPARATIVE ANALYSIS OF DEGREE OF OBESITY STATUS AMONG SEDENTARY VS ACTIVE PRE-BARIATRIC SURGERY PATIENTS.

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Introduction: The current exercise prescriptions aimed at weight loss in people with obesity class II and III consist almost exclusively of continuous aerobic exercise with low intensity and long duration. However, it has been increasingly demonstrated the inefficiency of this model for weight loss in view of the exponential growth of obesity. In addition, the fact that there is no data correlating the physical activity levels in pre-bariatric surgery obese population shows that these recommendations are empirical and without foundation in literature, becoming necessary the accurate diagnosis of this profile obese to be submitted to intervention surgery.
Objective: To analyze the correlation between physical inactivity and weight gain in subjects with obesity class II and III pre-bariatric surgery.
Material e methods: The International Physical Activity Questionnaire was applied (IPAQ) in 256 patients of both sexes, aged between 17 and 66, selected according to the criteria of Brazilian society of bariatric and metabolic surgery. The data were correlated with anthropometric measures of body mass index (BMI).
Results: Research has shown a frequency of sedentary 81.2%, with a higher prevalence among men than women (85.2% vs 79.5%, respectively). The average age was 37.3 ± 10.7 years, mean BMI was 43.2 ± 5.3 kg / m² and the average weight was 119.4 ± 21.5 kg. Regarding the anthropometric parameters, there were no significant differences between active and sedentary (BMI in kg / m² = 43.5 ± 5.4 vs 42.5 ± 5.2, respectively), demonstrating that individuals who underwent activities for more than 30 minutes 5 times a week showed no significant difference in body weight and BMI compared to sedentary.
Conclusion: The results showed that even patients considered active do not showed significant differences in BMI compared to sedentary, proving the inefficiency of the current practices of physical activity for weight loss. Thus, it is essential to review the current concepts regarding prescription of continuous long-term aerobic exercise aimed at weight loss in obese individuals, especially those undergoing bariatric surgery.

A5178

EFFECT OF EARLY AMBULATION ON HOSPITAL LENGTH OF STAY FOLLOWING BARIATRIC SURGERY

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Introduction: Safe reduction in postoperative stay has become the focus to optimize utilization of healthcare resources. Studies have attempted to identify various factors that may reduce hospital length of stay, while keeping readmission rates and emergency department (ED) returns the same. In an attempt to reduce hospital length of stay, our institution introduced a new policy to attempt to ambulate post-bariatric patients as soon as possible following surgery. The aim of this study is to evaluate the effect of early ambulation on hospital length of stay following bariatric surgery.
Methods: Following Institutional Review Board (IRB) approval, a retrospective chart review was performed to identify all patients undergoing laparoscopic Roux-en-Y gastric bypass (lRYGB) and Laparoscopic Sleeve Gastrectomy (LSG) from June 2013 to March 2014. Patients undergoing revisional procedures, band implantations, with complications that required return to the OR, or with incomplete records were excluded. Chi-square and one-way ANOVA was used to assess differences between groups. P-values< 0.05 were considered statistically significant.
Results: Sixty-eight patients qualified for the study. Mean age was 38.64 +/- 11.43

years. Fifty-five (80.9%) of the 78 were female. The patients were separated into four quartiles depending on the time to ambulation from end of surgery (<5.14 hours; 5.14-7.2 hours; 7.21-8.33 hours; >8.34 hours) (see Table 1). No statistical differences were seen between groups in terms of age (P=0.38), sex (P=0.61), race (P=0.91); BMI (P=0.95); ASA class (P=0.58), and estimated blood loss (EBL) (P=0.15). Patients with longer time to ambulation also had longer operative times (P=0.048). There was no correlation between early ambulation and hospital length of stay, (P=0.15). There were also no statistical differences among the four groups in terms emergency department returns or re-admissions.
Conclusion: Early ambulation did not lead to decreased length of stay. In addition, this study shows that early ambulation had no effect on ED returns or re-admissions. Strategies other than ambulation should be utilized to minimize hospital length of stay and improve early bariatric outcomes.

A5179

EARLY ADHERENCE TARGETED THERAPY (EATT): A SKILLS-BASED INTERVENTION TARGETING POOR DIETARY ADHERENCE IN POST-BARIATRIC PATIENTS

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Background: Bariatric surgery is the most effective treatment for morbid obesity and yet up to 30% of post-surgical patients have suboptimal weight loss outcomes (defined as <50% Excess Weight Loss, or %EWL). Poor dietary adherence at 6 months has been shown to predict poorer weight loss outcomes at 12 months, indicating a potential window for intervention in high-risk patients (those with low dietary adherence). Current interventions offered in the early post-surgical period are limited as they a) treat all patients, regardless of risk, despite that the majority will do well with just usual care; b) exclude patients with psychiatric co-morbidity or on psychiatric medications, who make up the majority of bariatric patients; c) offer a pre-determined number of sessions; and d) do not individualize treatment by assessing for and targeting specific skills deficits underlying maladaptive behavioral patterns such as poor dietary adherence. To address these limitations, we piloted Early Adherence Targeted Therapy (EATT), an efficient, individualized, skills based intervention targeting high-risk patients reporting poor dietary adherence in the first 6 month post-surgery. EATT aims to convert poor-dietary adherers into high-dietary adherers, improving probability of optimal weight-loss outcomes. Patients with psychiatric co-morbidity were included.
Methods: Poor dietary adherence was defined by a score of < 7 on a 9 point Likert scale, where 1= not adhering well at all to the recommended post-surgical diet plan and 9 = adhering very well. Patients who reported poor dietary adherence within 6 months post surgery were offered EATT. A maximum of 12 weekly sessions were available, with the number actually delivered determined by an adaptive learning model based on patient progress (as indicated by dietary adherence). Outcomes, including dietary adherence and other maladaptive eating behaviors, as well as weight loss at 12 months post-surgery, were assessed.
Results: Of 24 post-bariatric patients given information about the study, 22/24 (91.7%) consented to enter. The two who refused stated they were not interested in the study. Of the 22 consented participants, 13/22 (59%) reported poor dietary adherence. Of the 13 who qualified, 13 accepted. These participants were 77% female, 69.2% White, 45.4 ± 10.5 years of age (range = 21-65), and had a pre-surgery Body Mass Index (BMI) = 48.0 ±13.4 kg/m^2. The majority (76.9%) carried a psychiatric diagnosis (most commonly a mood disorder) and 61% were on psychotropic medications (i.e., antidepressants, mood stabilizers). Most had undergone Roux -en-Y/gastric bypass (n=7, 54%), followed by gastric sleeve (n=5, 38 %) and lap band (n=1, 8%). The average number of treatment sessions was 4.5 out of a possible 12 (range 1-9). Eighty-five percent, or 11/13, completed treatment. Of the 2/13 (15%) who dropped, 1 had a family emergency and 1 could not be reached. From pre to post treatment, dietary adherence significantly increased from

5.4 ±1.6 to 7.8 ±.8, p= 001. This indicates that poor dietary adherers had been converted to high-dietary adherers. In addition, significant reductions were found for both grazing (p=.001) and mindless eating (p=.001). At 12 month follow-up, 62% (8/13) of this high-risk group had successful weight-losses, with a mean %EWL= 70.9% ±17.9.
Conclusions: EATT, an efficient skills based intervention, is the first post-bariatric surgery treatment to selectively target patients at-risk for suboptimal weight loss outcomes based on a previously identified predictor, poor dietary adherence in the first 6 months post-surgery. Additionally, EATT overcomes limitations of other interventions by including patients with psychiatric co-morbidities, titrating sessions using an adaptive learning model, individualizing treatment through targeting skills deficits underlying poor dietary adherence. EATT was also highly acceptable to patients. Early pilot results are promising, although a randomized trial with larger population is needed to replicate these findings.

A5181
EFFECTS OF A LEADERSHIP ACTING ON A TEAM OF BARIATRIC SURGERY
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Introduction: Currently, under the impact of the restructuring process, many organizations in order to ensure their permanence in the market, have promoted the pursuit of quality as a differential factor in maintaining an increasingly crowded space. In health, the work of an interdisciplinary team presents itself as a strategy to redesign this work and promote the quality expected. However, a team is composed of a variety of professionals from different specialties, so the existence of a leadership that has structured skills to keep this integrated and collective work is required. In obesity, more specifically in bariatric surgery, a traditional approach to the treatment has proved increasingly ineffective. Among the many reasons for this failure, the lack of leadership in teams is presented as a determining factor.
Objective: To analyze the effects of effective leadership in an interdisciplinary team specialized in bariatric surgery and to contribute to the formation of leaders in health teams.
Methodology: This is a longitudinal intervention study to identify the effects of an active leadership within a team specialized in bariatric surgery. **Results**: It can be seen that the absence of a leader in a team resulted in the lack of collective responsibility, inter professional, misinformation which damages the interaction with patients, incomplete reports and, consequently, poor image of the institution concerned. After the introduction and involvement of a leader changes were noted. Readjustment of skilled professionals, establishing clear objectives, development of treatment protocols, development of a structured flowchart, communication stimulation and collaborative participation of the members involved through regular meetings and regular evaluation of team work.
Conclusion: Teams of bariatric surgery that have a solid and participatory leadership are benefiting from greater involvement of professionals at work, fewer conflicts and greater inter-relationship with the patient, institution and interdisciplinary team.

A5182
ANALYSIS OF PATIENTS' PERSPECTIVE: OF CAUSE AND EFFECT RELATIONSHIP OF MORBID OBESITY TOWARDS CERTAIN CO-MORBIDITIES- A PROSPECTIVE EVALUATION OF 150 INDIVIDUALS.
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Background Obesity brings with it an array of co-morbidities and most of the time people are unaware of the cause-and-effect relationship between obesity and certain health issues. The study aims to evaluate the above in respect to the following co-morbidities like Acanthosis, Migraine, Urinary Incontinence, Hirsutism, Gynecomastia and Reflux Disease (GERD) among morbidly obese Indian population

(MO). Methods The study population included 150 MO (BMI = 46±17) patients undergoing Bariatric Surgery, i.e. 57 males and 93 females. A questionnaire was provided that contained a variety of obesity co-morbidities and patients were asked whether they perceived a cause-and-effect relationship between the particular disease state and obesity. Results Out of 150 patients 100% patients had one or multiple co-morbidities. The percentage of patients who believed obesity was a direct contributor to co-morbidities like Type II Diabetes, Hypertension, DOE, Snoring, Acanthosis, Irregular Menses/PCOD, Migraines, Depressive Symptoms, Lethargy, Urinary Incontinence, Hirsutism, Joint Pain, Edema, Varicose Veins, Gynecomastia and GERD was 80%, 60%, 100%, 15%, 10%, 90%, 0%, 60%, 65%, 0%, 0%, 100%, 60%, 10%, 5%, 0% respectively. Conclusions Many co-morbidities, like Acanthosis, Irregular Menses/PCOD, Migraine, Varicose Veins, Gynaecomastia and GERD (<50%), were not perceived by patients as having an association to obesity. Awareness ofobesity as a contributor to multiple co-morbidities was found lacking, even among this population of MO individuals. Clinician's organizations may be in need of appropriate education regarding the cause-and-effect relationship between obesity and co-morbidities.

A5184

FEASIBILITY OF WEIGHT-LOSS IN A PRE-BARIATRIC SURGERY PROGRAM

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Background: Pre-operative weight loss programs are designed to improve adherence to dietary changes and to reduce liver size in order to minimize surgical complications in bariatric patients. The feasibility and outcomes of such programs have seldom been assessed before.
Methods: We retrospectively reviewed the pre-operative outcomes of patients who underwent bariatric surgery at Boston Medical Center (BMC), a safety net hospital, during the year 2012 (n=269). The goals of the pre-operative program are to achieve a weight loss of 5% and to fulfill visits with dietitians and medical nutritionists, obtain psychiatric clearance and attend support groups. Patients were enrolled into the pre-bariatric surgery program from either an external referral from an outside clinic (n=180) or an internal referral from the medical nutrition group at BMC (n=89). Those referred from the medical nutritionist group previously attempted other weight loss methods. We examined their age, gender, race, percent weight loss, length of program, and the number of dietitian, medical nutritionist, and support group visits that each patient had encountered.
Results: The average duration of the pre-operative weight loss program was 10.4 months and the average weight loss was 4.5%. There was an overall significant effect of race with respect to the length of program [$F(3,265)= 5.24$, $p=0.001$] and percent weight loss [$F(3,265)=5.50$, $p=0.001$], with Hispanics spending a greater amount of time in the program (11.4± 5.7months, p=.001) and attaining a lower percent weight loss (3.39± 5.45%, p=.002) in comparison to whites (6.1± 4.2% and 8.3± 3.9months). A subgroup analysis revealed racial differences in patients enrolled from external referrals, but not in those enrolled from internal referral. Finally, multivariable analyses revealed that an overall higher frequency of medical nutritionist, dietitian, and support group visits were correlated with a greater percent weight loss (p=0.037).
Conclusions: Patients enrolled into the pre-bariatric surgery program at BMC were able to successfully lose an average of 4.5% body weight; however, there were racial differences suggesting a problem with access to care. We were also able to correlate a higher frequency of pre-operative visits with a greater percent weight loss.

A5185

EFFICACY OF LAPAROSCOPIC BARIATRIC SURGERY TREATMENT OF MORBID OBESITY PATIENTS IN A MEDICAL UNIVERSITY HOSPITAL IN TAIWAN

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Background: Obesity is an epidemic healthcare problem worldwide and associated with many chronic health problems. Obesity has become one of the major health-related issues in Taiwan. Bariatric surgery is now regarded as the most effective method to control morbid obesity. However, lack of large series of bariatric surgery with long-term follow-up in Taiwan. We present a series of 1638 consecutive laparoscopic bariatric surgery performed with 7 years follow-up.
Method: A retrospective review of prospectively collected database was conducted on patients who underwent Laparoscopic Bariatric Surgery from 2007 to 2014 in Taipei Medical University Hospital, Taiwan. Data included weight, height, BMI, idea body weight, comorbid conditions, intraoperative complications, mean length of hospital stay(LOS),readmission, postoperative complications, and percentage of excess weight loss(%EWL)
Result: Of the 1638 patients,65.3%(n=1071) were female, with mean age of 35.The preoperative mean body mass index was 39.8 kg/m^2.The comorbid conditions identified were diabetes mellitus (19.3%) ,sleep apnea (19.6%) , hypertension(38.6%), hyperlipidemia(10.5%),family history of diabetes mellitus (43.5%), family history of diabetes mellitus (43.5%), family history of hypertension(49.2%), family history of cancer(11.2%).There was no mortality in this series. Early post operative complications with leakage was 0.3%(n=5). Mean LOS was1.8 - 3 4 days, with a 0.79% of readmission,1.11% at 90 days postoperative complication.Mean %EWL at 12 months was 61.8±20.9 % respectively.Decrease in following hemoglobin A1C level showed better blood sugar control in diabetes patients after surgery.
Conclusions: In our study, the results suggest that patients who have received laparoscopic bariatric surgery has very low rates of early and long-term complications .The adequate weight loss had showed a better control of blood sugar in Diabetes patient and improvement of obesity-related comorbid conditions. After the surgical procedure performed, patients with higher follow-up visit rates had greater extend of body weight loss than low visit rates. More studies are needed to monitor the long-term effects.

A5186

COMPARISONS OF HEALTH RELATED QUALITY OF LIFE BEFORE AND AFTER BARIATRIC SURGERY: WHAT DO PATIENTS GAIN BY LOSING?

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Background: Past research has demonstrated that health related quality of life (HRQoL) is adversely affected by severe obesity. The most effective treatment of severe obesity is bariatric surgery. Recent literature suggests that HRQoL improves in most obese patients who receive bariatric surgery in comparison to severely obese patients who remain untreated. Given that many patients' primary motivation for pursuing bariatric surgery is to improve their HRQoL, it is important to examine HRQoL outcomes after bariatric surgery. The aim of this study is to compare changes in HRQoL before and after bariatric surgery for severely obese patients.
Methods: Since June 2012 all patients scheduled for bariatric surgery in our program are enrolled to take and/or administered the SF-36v2®. The SF-36v2® is a self-report measure of functional health and well-being. It consists of 36 items distributed by eight HRQoL domain scales that comprise two summary measures: the mental component summary (vitality, social functioning, role limitations due to emotional problems, and mental health) and the physical component summary (physical

functioning, role limitations due to physical problems, bodily pain, and general health). Patients were enrolled and/or administered the SF-36v2® within one month prior to their bariatric surgery date and again six months after of their date of surgery. 263 patients completed the SF-36v2® before surgery. Of these, 80 also completed the SF-36v2® six months after surgery. 80% of patients were female and 20% male. The mean age of patients completing both before and after surgery administrations was 51 years-old.
Results: On average, patients reported baseline (before surgery) HRQoL domain scale scores which were below the general populations mean scores. However, by six months after surgery patients reported HRQoL scores above the general population scores in all eight domain scales. The results are shown below in Figure 1. Likewise, baseline scores in both summary measures (Mental and Physical) were below the general population scores, but improved to above the general population scores by six months after surgery. Results are show below in Figure 2.
Conclusion: Improvements in HRQoL in patients with severe obesity appear to be enhanced following bariatric surgery. Patients reported improved HRQoL as early as six months postoperative across both physical and mental domains of functioning. Although prior to surgery patients with severe obesity reported HRQoL scores below the normal population; they appear to have positive gains in HRQoL that exceeds the general population scores after surgery. Ongoing research will examine qualitative components of these gains, as well as, whether these gains are maintained at 18 months after bariatric surgery.

A5187

MEDIUM TERM EFFECT OF THE SEVEN-MINUTE HIGH INTENSITY WORKOUT ON BODY WEIGHT, LEAN BODY MASS, GRIP STRENGTH AND HEART RATE

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Background: The Seven minute training program composed from aerobic and resistance exercises, is becoming a very popular workout. This is due to the fact that it targets individuals who would like to exercise but who have time constrains due to their busy lifestyles. The objective of the study is to investigate if this type of exercise, characterized by high intensity and very short duration would have a positive effect on body weight and composition, grip strength, heart rate and blood pressure.
Methods: Only healthy participants between the ages of 18 to 30 are included in this study. The workout investigated here was developed by the American College of Sports Medicine. The duration of this study is 6 weeks where 42 participants in total will do the 7 minute workout 5 days a week. Measurements such as height, weight, body mass index, waist circumference, hip circumference, middle upper arm circumference, blood pressure, heart rate, hand grip, and bioelectrical impedance are being collected and recorded during the beginning, middle, and the end of the full training program. Weight is recorded weekly. Participants will also fill a questionnaire related to their eating and physical activity habits. This will allow us to categorize them later based on their initial physical fitness and body weight. Measurements and the workout are conducted at the Lebanese American University in Beirut, Lebanon under supervision (data collection will end approximately on the 1st of June 2015). The study has been granted the Institutional Review Board approval.
Preliminary Results: We have recruited 30 participants so far (19 women and 11 men) of which 17 have already finished the 6 week period. Preliminary analysis showed significant increase in hand grip strength (right and left) ($p=0.04$) and an increase in the Mid-upper arm circumference ($p=0.032$). A trend of decreasing waist to hip ratio is observed ($p=0.057$). No changes in weight and BMI have been noted between the 1st and the 6th week yet. Body composition analysis is in process. Participants will be divided into categories depending on their baseline physical fitness level and their diet type.
Conclusion: This novel intervention study will show the effect of very short duration high intensity exercise on anthropometric measures and heart rate. We expect an increase in muscle

strength and mass. Body weight changes might not be perceived at this level as this activity does not involve remarkable fat loss, or heavy muscle building. This type of workout should be coupled with a complete exercise program, and should only be part of a healthy lifestyle and full workout program. Nevertheless individuals with time constraints can do the 7 minute workout on days when they cannot exercise for longer periods.

A5188

WARFARIN DOSE ADJUSTMENT AFTER DUODENAL SWITCH BARIATRIC SURGERY

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Background: The absorption of some medications and fat-soluble vitamins are impaired after bariatric surgery upon which intestinal length and function are altered. Consequently, the anticoagulant effect of warfarin is difficult to predict in the postoperative period. This study aimed at describing the average weekly warfarin dose required to maintain a therapeutic international normalized ratio (INR) before and one, three, six and twelve months after bilio-pancreatic diversion with duodenal switch (DS).
Methods: This descriptive and retrospective longitudinal population study included 20 patients using warfarin who underwent DS at IUCPQ between January 1st 2007 and December 31st 2012.
Results: One month after the DS, the median weekly dose of warfarin was 55% less than the pre-operative dose of 43.8 mg ($p < 0.0001$). At one year, it was still less than 39% of the pre-op dose ($p = 0.0047$). No significant difference was found between the weekly warfarin dose at three, six and twelve months, compared to that at one month.
Conclusion: DS caused an increase in the sensitivity to warfarin in the immediate postoperative period, which required adjustment to lesser doses. This sensitivity persisted over the first post-op year.

A5189

ASSESSMENT OF A COMBINATION OF DEXAMETHASONE AND ONDANSETRON IN THE PREVENTION OF NAUSEA AND VOMITING FOLLOWING A SLEEVE GASTRECTOMY

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Background: Postoperative nausea and vomiting (PONV) are common after a sleeve gastrectomy. Prevention of PONV was reviewed at the Institut universitaire de cardiologie et pneumologie de Québec (IUCPQ) in 2014. The aim of this study was to assess the efficacy of a combination of dexamethasone and ondansetron in the prevention of PONV following a sleeve gastrectomy.
Methods: Retrospective study assessing the effects of an intervention that began October 6, 2014 with a historic comparator (August-September 2014). Incidence of nausea and vomiting, number of rescue antiemetic doses (RED), time to first dose of RED, opioid consumption, length of postoperative stay and adverse events were collected from the postoperative recovery room until day 3.
Results: A total of 117 patients were included in the study, 66 in the treatment group and 51 in the control group. The complete absence of PONV was observed in 42% of patients in the treatment group compared to 12% in the control group ($p = 0.0004$). The use of at least one RED was observed in 53% of patients in the treatment group and 84% in the control group ($p = 0.0004$). A postoperative stay of less than 3 days was observed in 41% of patients in the treatment group and 22% in the control group ($p = 0.03$). The incidence of adverse events, postoperative complications and opioid intake were similar in both groups.
Conclusion: The combination of dexamethasone and ondansetron reduced PONV and the necessity of rescue antiemetics after sleeve gastrectomy, and also contributed in

reducing the length of postoperative stay without additional adverse effects.

A5190

A THREE-YEAR EVALUATION OF EATING PATHOLOGY AND WEIGHT CHANGE IN THE LONGITUDINAL ASSESSMENT OF BARIATRIC SURGERY-3 STUDY

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Background: Bariatric surgery procedures have been shown to result in significant long-term weight loss, although there is considerable inter-patient variability following the same surgical procedures. Binge eating and "loss of control" (LOC) eating have emerged as potential negative predictors of long-term weight loss, particularly when they occur post-surgery. However, the prognostic significance of additional forms of eating pathology as determined by structured interviews, such as the Eating Disorder Examination (EDE), has not yet been established. In addition, change in several aspects of eating pathology following surgery has not been described. To address these gaps, we report eating-related behavioral and experiential variables prior to and over the course of three years following bariatric surgery, and their relationship with pre- to post-surgery change in dietary intake and weight loss.

Methods: As part of a 3-site ancillary study to the Longitudinal Assessment of Bariatric Surgery Research Consortium, 185 of 199 participants completed assessments independent of clinical care, prior to Roux-en-Y Gastric Bypass (RYGB) or Laparoscopic Adjustable Gastric Band (LAGB) and at ≥ 1 annual follow-up assessment through year 3. This report utilizes the Eating Disorder Examination-Bariatric Surgery Version (EDE-BSV), a semi-structured interviewed designed to assess eating disorders and eating pathology based on the original EDE, with modifications to include problems specific to bariatric surgery. Approximately half of participants (N=90) also completed a 48-hour dietary recall pre-surgery and at ≥ 1 follow-up assessment, using the Nutritional Data System for Research (NDSR), from which daily intake (calories and grams of total intake, macronutrients and alcohol) were estimated. Mixed models were used to test change in prevalence of pathological eating behaviors and mean scores on ratings of eating-related experiential variables over time, as well as to test and estimate associations between select eating-related variables and pre- to post-surgery change in caloric intake and percent weight change, controlling for potential confounders.

Results: The sample was 93% white and 83% female. Pre-surgery, participants had a median body mass index (BMI) of 45 kg/m^2 and a median age of 46 years. The prevalence of several pathological eating behaviors and mean scores on eating-related experiences significantly declined pre-surgery to post-surgery (Table 1). Like the EDE-BSV global score, each of its component subscale scores was significantly lower in year 3 versus pre-surgery, including mean restraint score ($p=0.01$), as well as eating concerns score, shape concerns score, and weight concerns score (all $p<0.0001$). There were no significant differences in post-surgery prevalence rates or mean scores between years 1 and 3 (data not shown). The total daily energy intake (kcal), as well as total daily intake of fat, protein, and carbohydrates (grams), was significantly lower at year 3 versus pre-surgery (all $p<0.0001$). Between years 1 and year 3 there was a significant increase in total caloric intake only ($p=0.04$). Most pre-surgery eating variables did not predict change in daily caloric intake or percent weight change pre- to post-surgery. However, the presence of objective overeating (objective overeating episodes and/or objective bulimic episodes) pre-surgery was associated with a greater pre- to post-surgery decrease in caloric intake (503 kcal/day;

p=0.003). Additionally, every 100 kcal/day greater caloric intake pre-surgery was associated with 0.5% less weight loss at follow-up (p=0.01). Alcohol intake was the only post-surgery eating variable independently related to pre- to post-surgery change in caloric intake (increase of 52.9 calories pre-to-post surgery per 5 grams of alcohol consumed post-surgery; p=0.01). Both higher hunger and higher global scores (indicating more pathology) post-surgery were independently associated with diminished weight loss (0.8% per 1 point greater and 2.9% per 1 point greater, respectively; p for both <0.001). whereas post-surgery picking or nibbling, night eating syndrome (NES) score, and eating enjoyment scores were not associated with % weight change; nor were post-surgery alcohol intake or caloric intake.
Conclusion: Pathological eating behaviors and eating-related experiences are relatively common pre-operatively and improve markedly following bariatric surgery. The only pre-surgery predictor of diminished weight loss was higher caloric intake, whereas greater hunger and greater eating pathology (as measured with the EDE global score) post-surgery were associated with less weight loss.

A5191

SINGLE DOSE OF CEFAZOLIN 2 GRAMS PROPHYLAXIS IN BARIATRIC SURGERY PATIENTS: A PILOT STUDY

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Winthrop-University Hospital[1] Winthrop University Hospital[2] Winthrop-UniversityHospital[3] Hartford Hospital[4]

Purpose: Cefazolin is the first line antibiotic for prevention of surgical site infections (SSIs) in bariatric surgery. *Staphylococcus aureus* is a common cause of SSIs in the deep abdominal space. A minimal inhibitory concentration (MIC) of approximately 1mg/L for *Staphylococcus aureus* is considered to be acceptable. There are many controversies regarding cefazolin dosing in the morbidly obese population in the current medical literature. Some studies support the use of the 1 gram dose, while others support 2 grams or even higher. The goal of this study was to determine whether a single dose of cefazolin 2 grams IV push used prophylactically can provide an adequate MIC in the blood, subcutaneous adipose tissue, and the deep organ space during bariatric surgery.
Methods: This study was a prospective observational pharmacokinetic study. The study recruited 37 patients undergoing Roux-en-Y Gastric Bypass (RYGB) or Laparoscopic Sleeve Gastrectomy (LSG), aged 18-60 years old, and with a body mass index (BMI) $\geq 35 kg/m^2$. Patients who were pregnant, had moderate renal impairment (Serum creatinine>1.5mg/dl), or were allergic to penicillin were excluded from this study. Patients received one dose of cefazolin 2 grams IV push within 15 minutes prior to the skin incision. The following samples were collected at the time of initial incision and before the skin closure: 2 grams of superficial fatty tissue, 2 grams of fatty-deep peri-gastric tissue and a serum sample. Cefazolin concentrations were determined by using the high-pressure liquid chromatography (HPLC) method.
Results: At the current stage of the study, data from 19 patients was available. The mean cefazolin concentration at incision in the blood, subcutaneous adipose tissue, and peri-gastric adipose tissue were 134.18 $\pm$ 47.34 ug/mL, 10.47 $\pm$ 5.92 ug/mL, and 9.76 $\pm$ 6.23 ug/mL. At the completion of the procedure (last suture), the mean concentration of cefazolin in the blood, subcutaneous adipose tissue, and peri-gastric adipose tissue were 88.95 $\pm$ 32.11 ug/mL, 6.71 $\pm$ 4.81 ug/mL, and 6.76 $\pm$ 2.21 ug/mL for sleeve only surgeries, 95.5 $\pm$ 11.88 ug/mL, 10.51 $\pm$ 0.83 ug/mL, and 20.51 $\pm$19.22 ug/mL for sleeve with other procedures, and 71.08 $\pm$ 13.36 ug/mL, 8.40 $\pm$ 4.98 ug/mL, and 6.78 $\pm$ 3.98 ug/mL for gastric bypass. All individual samples, either blood or adipose tissue, had a cefazolin concentration above the MIC of 1 ug/mL. Mean subcutaneous and peri-gastric adipose tissue cefazolin concentrations were

approximately 10% of the blood concentration. No surgical site infections (SSIs) were reported within 30 days of surgery for all 19 patients. **Conclusions:** A single dose of 2 g cefazolin administered by IV push within 15 mins of incision provided a cefazolin serum concentration that exceeded the MIC for *Staphylococcus aureus*. Only about 10% of the cefazolin penetrated adipose tissue, but the cefazolin concentrations in adipose tissue were above the MIC for *Staphylococcus aureus* during sleeve gastrectomy or gastric bypass surgery. The study results show that high dose of cefazolin (3- 4 grams IV pre-operation), or re-dosing less than 4 hours to maintain protective level of cefazolin in blood and adipose tissue during bariatric surgeries (sleeve gastrectomy, sleeve gastrectomy with other procedures, or gastric bypass) is not indicated.

A5192

PRESURGICAL PSYCHOLOGICAL TESTING: INCREMENTAL CONTRIBUTION TO PREDICTING FAILURE TO FOLLOW THROUGH WITH BARIATRIC SURGERY

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Background: Why some bariatric surgery candidates decide not to proceed with surgery even after they are seen and not denied by a multidisciplinary team is understudied. Previous research suggests a history of, or current psychopathology and a lower Body Mass Index (BMI) are associated with failure to follow through with bariatric surgery. This study seeks to extend previous findings and explore whether presurgical scores on the Minnesota Multiphasic Personality Inventory – 2 – Restructured Form (MMPI-2-RF) Substantive Scales can predict failure to follow through with bariatric surgery after controlling for factors such as psychological diagnoses and history of psychiatric inpatient hospitalizations. Consistent with previous literature, we hypothesized that a current substance use disorder diagnosis, history of psychiatric inpatient hospitalizations, lack of current psychotropic medication use, and a lower BMI would all be associated with a failure to follow through with bariatric surgery. We also hypothesized that constructs measured on the MMPI-2-RF that are related to the presurgical variables (outlined above) such as emotional, behavioral, and interpersonal functioning would incrementally predict follow through with bariatric surgery.
Method: The sample composed of 1,160 consented bariatric surgery candidates [72.41% women; 65.76% Caucasian; mean age of 46.07 years (SD = 11.70); mean BMI of 49.08 kg/m^2 (SD = 11.05)] who were administered the MMPI-2-RF at their initial psychology visit and produced valid protocols. Extra-test data via psychodiagnostic clinical interviews were available for these candidates. Means, standard deviations, and t-tests for the hypothesized MMPI-2-RF Substantive Scales (e.g., Antisocial Behaviors, Family Problems, Anxiety) were computed and compared between patients who followed through with surgery vs. those who did not after 36 months of not returning to the program after seeing the bariatric surgery team. In order to be deemed both statistically and clinically meaningful, a Bonferonni corrected alpha (.05/25 = .002) was calculated and effect sizes (Cohen's d) had to reach at least .20. Hierarchical logistic path analyses were then calculated to test for incremental prediction of MMPI-2-RF substantive scales beyond information gathered from their medical charts such as psychological diagnoses and history of psychiatric inpatient hospitalizations. **Results:** 27.16% of the candidates did not follow through with bariatric surgery within 3 years after initial evaluation. They produced statistically and meaningfully higher scores on MMPI-2-RF substantive scales across a number of hypothesized scales (e.g., Antisocial Behaviors, Family Problems, Anxiety)when compared to patients who proceeded with surgery (Cohen's ds: range .20 - .50). Logistic regression analyses indicated that 15% of the variance (R^2 = .15) in not preceding with surgery were accounted for by a current substance use disorder diagnosis, history of psychiatric inpatient hospitalizations, lack of current psychotropic medication use, and

a lower BMI. MMPI-2-RF substantive scales (controlling for inter-correlations between scales) were entered by scale set in the second block of the equation. MMPI-2-RF scores incrementally predicted a greater likelihood of failure to follow through with surgery (change in R^2 = .02-.06.) after controlling for information gathered from their medical charts such as psychological diagnoses and history of psychiatric inpatient hospitalizations. MMPI-2-RF scales that assess constructs associated with demoralization, neuroticism, cognitive complaints, familial discord, disaffiliativeness, disinhibition, and substance use were useful in predicting patients who fail to follow through with bariatric surgery beyond information obtained from the psychological clinical interview and past medical chart information.
Discussion: Consistent with the literature, bariatric surgery candidates cleared for surgery, but who do not follow through with surgery, report more psychopathology on the MMPI-2-RF and during the psychodiagnostic interview relative to patients who proceed with surgery. Previous literature suggests that a majority of patients who do not proceed for surgery may do so because they are unwilling to complete psychological treatment prior to surgery. Our findings highlight the importance of educating bariatric surgery candidates who show signs of psychopathology on the MMPI-2-RF on the rationale of treatment and impact on surgical outcomes. Evidence of incremental validity of psychological testing indicated that using objective assessment instruments that are broadband can be useful. For example, psychological testing suggested that factors such as neuroticism, behavioral non-compliance, and spousal solicitation are additional predictors of not following through with surgery in addition to psychological disorders and patients medical history. Moreover, psychological testing can provide a dimensional framework for assessing the severity of these factors. Future research may be helpful in early identification of those who will not successfully achieve surgery.

A5193

EARLY WEIGHT REGAIN FOLLOWING ROUX-EN-Y GASTRIC BYPASS

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Introduction: Roux-en-Y gastric bypass (RYGB) results in massive weight loss with nadir weight generally occurring between 12 to 24 months. Upon reaching nadir weight, some individuals start to regain weight, and such early weight regain may hinder long-term weight loss success. Preoperative predictors of early weight regain remain unclear. In the present study, we have identified a subpopulation of patients with early weight regain and attempted to identify potential predictors. Specifically, we have 1) determined the percentage of RYGB patients who experience weight regain between one to two years postoperatively, and 2) examined early weight regain with regard to potential contributors: a) patient characteristics, i.e. gender, age, initial BMI, and b) the magnitude of initial weight loss.
Methods: From a large single surgeon series of totally robotic (TR)-RYGB patients, 268 patients had complete anthropometric data for baseline and postoperative months 6, 12, and 24. Preoperative BMI of these patients averaged 47.5 ± 7.6 (SD) (range = 35 to 70.7), mean weight was 295.7 ± 58.3 lbs (134.4 kg), and mean age was 52.5 ± 12.8 (18-76 y). Among the population, 76% were females and 24% males; 36% were superobese (BMI ≥ 50), and 35% were older patients (≥ 60 y). Total percentage weight loss for the study population averaged 27.6% at six months, 34.7% at year one, and 35.1% at year two. Weight regain was defined as ≥5% increase in initial weight loss between one to two years. Individuals who gained weight from years one to two were categorized as weight 'regainers'. Those whose weight stabilized between one and two years were categorized as being weight loss 'sustainers', and individuals who lost ≥5% of their initial weight loss between 1 and 2 years were considered weight 'losers'.

Results: At one year following RYGB, 64% of patients had reached their nadir weight, for an average weight loss of 102.9 lbs (range=18.5 - 197.5 lbs). By postoperative year two, 32.5% of patients had maintained their nadir weight (sustainers); 36% (losers) had lost additional weight (mean = 16.6 lbs; range = 7.8 to 66.4 lbs); and 31.7% of the study population had regained ≥5% of their initial one-year weight loss (regainers), with 18.2% of patients having regained ≥10% of their initital weight loss for an average of 14.7% (mean increase in weight = 13.2 lbs). Using regression analyses, we found no associations between % changes in one-year weights and patient age (r=0.085, p=0.1684) or preoperative BMI (r = 0.105, p = 0.0865). There were also no significant differences in the numbers of males vs. females (chi sq p = 0.891, older (≥60 y) vs. younger (<60 y) patients (chi sq p = 0.189), or superobese vs. morbidly obese patients (chi sq p = 0.187) between the weight regainers, losers or sustainers. Furthermore, there were no significant differences between the regainers, losers or sustainers with regard to the magnitude of their initial weight loss. Total absolute weights at one year postoperatively averaged a respective 192.2, 196.4, 189.3 lbs, p>0.05 for the regainers, losers and sustainers; one-year weight losses averaged 100.1, 102.7, and 105.9 lbs , respectively, (p>0.05); and % changes in weight from baseline were a respective 34.2%, 34.2, 35.9% (p>0.05).
Conclusions: In this study, nearly 1/3 of RYGB patients experienced early weight regain. Neither the magnitude of weight loss over the first year nor patient age, gender or initial body size were found to be predictors of early weight regain. As early weight regain may be detrimental to long-term weight loss success, it is important that we recognize this subset of RYGB patients and continue efforts to identify pre- and postoperative contributors in order to provide early and appropriate intervention.

A5194

REPLICATION OF DIETARY ADHERENCE AS A PREDICTOR OF SUBOPTIMAL WEIGHT-LOSS OUTCOMES IN POST-BARIATRIC PATIENTS

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Background: Obesity-related disorders in the U.S. cause more than 100,000 premature deaths annually and each year cost over $150 billion. Although bariatric surgery is frequently successful at promoting weight loss and reducing morbidity and mortality, approximately 30% of post-operative patients have suboptimal weight loss outcomes (commonly defined as < 50 % excess weight loss (%EWL)). This 30% is likely an underestimation given the high level of attrition in follow-up studies and evidence that those who drop out are significantly more likely to have poorer weight loss outcomes. Predicting a priori which patients will lose ≥50% EWL is a challenge. The current literature has not been able to identify any pre-operative psychiatric or behavioral variables that consistently predict post-operative weight loss outcomes. However, problematic *post*-operative behaviors have been identified including poor adherence to post-operative dietary guidelines and maladaptive eating behaviors. For example, Sarwer and colleagues (2008) assessed dietary adherence by 6 months post-operative using a simple 9-point Likert scale (where 1= not adhering well at all to the diet plan provided by the nutritionist and 9 = adhering very well). Patients were split into poor versus high dietary adherers based on whether they were below or above the median score of 7. Early poor versus high dietary adherence did not distinguish the amount of weight lost before 6 months post-operative, but it did significantly predict suboptimal weight loss outcomes between 6 and 12 months post operative. . This study replicated these findings in a distinct clinical research setting.
Methods: Consecutive post-operative patients at a university bariatric clinic who attended at least 3 standard follow-up appointments during the first post-operative year were recruited, consented to participate, and assessed for dietary adherence (at 2 weeks, 3 months and 6 months post-operative) and weight (at pre-operative, 6 months, and 12 month post-operative).
Results: A total of 72 post-operative patients

were enrolled and assessed through 12 months post-operative. Patients were 74% female with a mean age of 49.1 (SD=11.8) years, pre-surgical BMI = 43.3 (SD=6.8), , 6 month post-operative BMI = 33.8 (SD=7.0), 6 month post-operative %EWL= 53.7 (SD=26.9);, 12 month BMI = 32.6 (SD=5.8) , and 12 month %EWL = 59.8 (SD=27.5) . Post-operative dietary adherence was 7.6 (SD= 1.6) between 2-6 weeks,, 7.0 (SD=1.5) at 3 months, and 6.6 (1.8) at 6 months. Median dietary adherence at 6 months post-operative was 7. Patients were divided into poor (n= 22) versus high dietary adherers (n= 50) based on dietary adherence at 6 months post-operative. Differences between poor and high dietary adherence in %EBWL at 6 months were not statistically significant. However, patients with poor dietary adherence by 6 months post-operative had significantly poorer %EWL outcomes (49.7 SD=28.9) at 12 months than those with early high dietary adherence (%EWL=64 SD=25.9), p=.038. Poor versus high dietary adherence scores at 3 months post-operative did not predict statistically significant differences in %EWL at either 6 months [poor adherers had %EWL=48.15 (SD=17.9) compared to high adherers [%EWL=50.30 (SD=17.2), p=.721) or at 12 months post-operative.

Conclusions: This prospective study replicates the predictive findings of Sarwer et al. (2008), demonstrating that poor dietary adherence by 6 months post-operative predicts significantly poorer weight loss outcomes by 12 months. Additionally it was observed that poor versus high dietary adherence at 3 months or earlier does not significantly predict poorer weight losses at 12 months, suggesting 3-6 months post-surgery may be an ideal window for both identification of high-risk patients and timely therapeutic intervention.

A5195

BARIATRIC SURGERY PREOPERATIVE PSYCHOLOGICAL EVALUATION: IMPACT OF RELATIONSHIP AS A POTENTIAL PSYCHOSOCIAL VARIABLE FOR ASSESSMENT OF PSYCHOLOGICAL READINESS

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Background: Psychological evaluations requisite to bariatric surgery verify psychological competence and identify psychosocial factors that may aid or inhibit successful weight loss outcomes. Currently, there is an absence of predictable psychological outcome data that annotates the psychological-surgical interaction. Psychological evaluation using Bowen Family Systems Theory offers a theoretical framework to evaluate a added variable: the impact of relationship as an added psychosocial variable in evaluating psychology pre-bariatric surgery. It is widely observed by practitioners that patient concern about health conditions and quality of life is often intensified at the time of surgery decision. Recent emotional change in the individual in their important relationship(s) that prompts motivation may occur commonly, go unrecognized, and predict outcome. Research regarding the psychological outcome and adjustment of patients after surgery as well as the identification of risk factors that may predict difficulties or successes is needed and is vital to the future of bariatric medicine and behavioral health.

Methods: Pre-bariatric surgery psychological assessments were completed for 218 surgical candidates using ASMBS recommendations, with assessment of: previous weight loss attempts, eating and dietary styles, physical activity and inactivity, substance abuse, coping skills and emotional modulation, knowledge of obesity and surgical interventions, cognitive functioning, legal history, health-related risk-taking behavior, developmental history, utiization of social support, stressors, psychopathology, current life situation, motivation and expectations. In addition, clinical interview included family diagram, nodal family events, and social, emotional, and physical functioning of candidate as well as nuclear and extended family members. Emotional change (anxiety decrease or increase) reported by candidate in response to a recent

nodal event or change in the family emotional system coincident to the decision for bariatric surgery was identified as present or absent. Surgery candidates were classified per bariatric evaluation recommendations in categories that range from recommendation to advance to surgery, preoperative interventions, or not recommended for surgery. For purposes of this investigation, assessments were also classified by emotional change in the individual related to an emotionally important relationship, where the change was: 1. emotionally calming (anxiety decrease) 2. anxiety-increasing. 3. no emotional change identified. Example of emotionally calming change is a patient who describes relief about a divorce being finalized, and has entered into a new compensating relationship with a partner who lives a healthy active lifestyle desired by the patient, and is supportive for bariatric surgery, where the weight loss will contribute to togetherness/closeness. Example of anxiety-increased emotional change is a woman in an emotionally distant marriage, highly focused on children, with children grown and leaving home in the near future, and the shortage of marital closeness will be more strongly felt. She is also recently diagnosed with diabetes, added to anxiety about self.

Results: Of the 218 pre-surgery assessments, 110 (50%) noted increased anxiety associated with relationship impact coincident with decision for surgery, 72 (33%) noted decision occurred a calming change associated with relationship that occurred prior to surgery decision, and 36 (16%) were no emotional change identified. Of the 218 assessments, 182(83.4%) bariatric candidates were identified as having an emotional change in response to an emotionally important relationship coincident with the decision for surgery.

Conclusion: Based on systems theory, family relationships represent an important variable in symptom (obesity) development and symptom (obesity) resolution. Bariatric psychological assessments identified emotional change in the individual in the context of the relationship system coincident to decision for bariatric surgery in 83% of assessments. Initial review of outcomes data indicates a relationship change in the relationship system that is anxiety-reducing to the candidate's psychology may be optimal for weight loss outcome. Change in the relationship system that impacts the candidate may be a significant variable to be included in pre-bariatric psychological evaluation. Further investigation will elucidate whether the family relationship variable is a predictive variable for longterm weight loss outcome.

A5197

NONPLANNING IMPULSIVITY IS ASSOCIATED WITH BINGE EATING AND MALADAPTIVE EATING FACTORS IN A BARIATRIC SAMPLE

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Background: Impulsivity has been associated with both overweight/ obesity as well as disordered eating[1,2]. Previous literature also suggests that individuals with binge eating disorder may represent a specific subgroup of obese people with increased food related impulsivity[3]. Few studies have examined the relationship between impulsivity and binge eating in a bariatric sample. The current study seeks to identify the association among impulsivity, binge eating, and cognitive/ behavioral factors of eating, including cognitive restraint, disinhibition, and hunger, within a sample of patients seeking weight loss surgery.

Methods: This study used a naturalistic, retrospective design to investigate the relationship among impulsivity, binge eating, and eating factors within a sample of 88 patients seeking bariatric surgery at a large university medical center. Patients completed a standard psychological evaluation to determine appropriateness for bariatric surgery as part of routine clinical practice, which included measures assessing impulsivity (Barratt Impulsiveness Scale, Version 11; BIS), binge eating (Binge Eating Scale; BES) and behavioral and cognitive components of eating (Three Factor Eating Questionnaire; TFEQ).

Results: Patient mean age was 47; sample was predominantly female (83.1%), white (95.5%) and married (55.1%). Bivariate correlations were performed on the data to determine associations between BIS subscales, binge eating, and TFEQ

subscales. Nonplanning impulsivity was positively correlated with binge eating ($r = .37$, $p < .00$), disinhibition ($r = .43$, $p < .00$), and hunger ($r = .40$, $p < .00$). Nonplanning impulsivity was negatively correlated with cognitive restraint ($r = -.43$, $p < .00$). Attentional impulsivity was also positively correlated with hunger ($r = .37$, $p < .00$).

Conclusions: Only nonplanning impulsivity (versus attentional or motor impulsivity) demonstrated a significant correlation with binge eating, cognitive restraint, and behavioral disinhibition. This study lends further support to the relationship between impulsivity and binge eating in obese individuals. Additionally, these results suggest that binge eating and other maladaptive aspects of eating (high disinhibition, low cognitive restraint, and high hunger) may have more to do with lack of planning or forethought, than motor or attentional impulses. As such, assisting bariatric patients with planning and preparation skills may represent a particularly important intervention for reducing problematic eating behaviors.

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A5198

RESOURCE UTILIZATION PRE AND POST BARIATRIC SURGERY

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Introduction: In order to achieve optimal outcomes, an increase in healthcare resource utilization pre- and post- bariatric surgery is not uncommon. Although many small scale studies have evaluated the resources consumed, we analyzed a large retrospective database in order to better understand the types of procedures or services utilized by bariatric surgery patients.

Methods: CY 2012 Truven healthcare claims data for patients undergoing laparoscopic gastric bypass and laparoscopic sleeve gastrectomy were analyzed. Included were healthcare resource utilization in the form of CPT codes at 6 months prior and 12 months post bariatric surgery. In addition, selected top 100 CPT codes were categorized blood work, office visits, ER visits, imaging, psychology counselling, monitoring, nutritional therapy etc. Descriptive analysis was performed to assess the patterns in resource utilization and understand linkages with reimbursement.

Results: A total of 23,679 patients underwent bariatric surgery in CY 2012. 96% of the patients had an office visit pre-surgery (6 visits per patient) and 88% had a visit post-surgery (7.1 visits per patient). Blood work was done for 89% patients pre-surgery (14.1 codes per patient) and 81% patients post-surgery (22.8 codes per patient). 18% patients had a code for nutritional therapy pre-surgery and 9% had the code post-surgery. 44% patients had a psychological counseling pre-surgery (2.5 visits per patient) and 8% post-surgery (8.4 visits per patient). Cardiovascular, pulmonary and sleep monitoring was more common pre-surgery (71%, 17%, 17% patients, respectively). 12% patients had an ER visit pre-surgery while 26% patients had ER visit post surgery and 4% patients had a hospital visit. Table 1 further highlights the data.

Conclusion: Healthcare utilization in the form of blood work, physician visits, psychological counseling, and nutritional therapy is common but not consistent among bariatric patients. Payment for such procedures / services may be out-of-pocket or bundled with other reimbursed services like office visits. Lack of coverage of some services may lead to barriers of care. This offers opportunities to develop standardized protocol for pre- and post-surgical care and

appropriate coding, coverage and reimbursement of procedures / services.

A5199

GASTROINTESTINAL SYMPTOMS 5 YEARS AFTER ROUX-EN-Y GASTRIC BYPASS

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Background: Gastrointestinal symptoms are common in morbid obesity and in patients after Roux-en-Y gastric bypass (RYGB). We wanted to evaluate gastrointestinal symptoms 5 years after RYGB and compare these findings to those of morbid obese non-operated controls.
Methods: We invited patients operated at Oslo University Hospital with RYGB for morbid obesity, without previous bariatric surgery, between December 2008 and December 2009 (n=246). The controls were patients found eligible for RYGB at the department (February 2014 – April 2015, n=255). Demographics and comorbidities were noted. The Gastrointestinal Symptom rating Scale (GSRS) and Hospital anxiety and depression scale (HADS) questionnaires were used. The GSRS consists of 15 items, organized in 5 dimensions. The patients respond using a seven-point Likert-type scale (1=no discomfort and 7=severe discomfort). Mean score of 3 or higher was considered as bothersome symptoms. The HADS consists of 14 questions, patients respond on a scale 0 (minimal) to 3 (maximal). The sum score was used to calculate correlation.
Results: One hundred and fifty one (61%) patients met for the 5 year follow-up, 126 (83%) completed the GSRS. The control group consisted of 198 (78%) patients. Seventy-eight (62%) and 138 (70%) of the participants were women in the postoperative and control group respectively. The corresponding mean (+/- SD) age and BMI were 49 (8.7) and 44 (9.5) years, and 34 (6,2) and 43 (5,0) kg/m2. The prevalence of bothersome gastrointestinal symptoms in the postoperative group and the control group were; 25% and 7% for diarrhoea ($p<0.001$), 49% and 15% for indigestion ($p=<0.001$), 21% and 10% for constipation ($p=0.005$), 32% and 10% for abdominal pain ($p=<0.001$), and 6% and 7% reflux ($p=0.6$), respectively. Gastrointestinal symptoms correlated positively with symptoms of depression and anxiety ($r= 0.49$, $p<0.001$).
Conclusion: Gastrointestinal symptoms are frequent 5 years after RYGB, but also in patients eligible for bariatric surgery. Bothersome symptoms were more prevalent after RYGB in all but the reflux dimension of the GSRS. Future studies are needed to determine the causality of the differences observed.

A5200

CAN PRE-OPERATIVE EDUCATION AND POST-OPERATIVE CARE PATHWAYS IMPROVE SLEEVE GASTRECTOMY SAFETY OUTCOMES?

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Background: Sleeve gastrectomy has emerged as the most popular bariatric surgery, due to its safety and effectiveness. Leaks remain a serious complication of this procedure and are reported to occur in 1-2 %. Readmission rates within 30 days of surgery have been reported at 5-8% after the sleeve gastrectomy. We report leak rates and 30-day readmission rates that are significantly less than previously reported.
Methods: A retrospective review of 1162 patients undergoing sleeve gastrectomy at a single private community based bariatric surgery program in 2013 to 2014 was conducted. Data was prospectively collected and submitted to the ACS-ASMBS MBSAQIP program. Before surgery, all patients received comprehensive education by our multidisciplinary team including registered nurses, dietitians, and nurse practitioners regarding not only the diet, but also

the pace of eating food and drinking fluids. The concept of the "Speed Limit" was introduced to the patients before surgery and then further reinforced after surgery. Very specific post-operative care pathways were implemented and followed. All patients were instructed to drink 1 ounce of calorie-free liquids every 20 minutes while awake for the first 5 days following surgery, followed by at least two weeks of liquids at a maximum rate of one ounce every 5 minutes to include 3 servings of liquid protein per day. This was then followed by at least 2 weeks of consuming pureed consistency foods prior to being allowed to progress to regular solid food.

Results: The 1-year EWL was 59%. The 30-day mortality was 0% (0). The 30-day leak rate was 0% (0). The 30-day readmission rate was 1.6% (19)

Discussion: With improvements of surgeons' techniques and of surgical devices, the sleeve gastrectomy has become safe and effective. Beyond the technical factors that may impact outcomes, pre-operative patient education and post-operative care pathways may play an important role in further increasing the safety of the sleeve gastrectomy. We believe that our program's pre-operative patient education and post-operative care pathways have had an impact in lowering complication rates to below those reported in the current literature.

A5201

THE EFFECTIVENESS OF COGNITIVE-BEHAVIORAL THERAPY GROUPS ON BARIATRIC PATIENTS WITH POST-OPERATIVE WEIGHT GAIN.

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Introduction: The current study follows the effectiveness of post-operative groups among individuals who have experienced post-operative weight gain. In short, the review of the literature suggests that weight loss surgery is becoming a leading alternative for individuals who are struggling with morbid obesity. The role of mental health professionals working with this population is becoming more important as the amount of individuals having weight loss surgery increases. Understanding the potential impacts of post-operative care is essential in individuals maintaining a healthy weight.

Purpose: This purpose of this study is to expand the base of research within the mental health community with post-operative patients. Moreover, much of the focus in the past has been on the pre-operative assessment of individuals seeking weight loss surgery and not on the psychological aftercare of patients. This study aims to expand the base of knowledge for mental health practitioners on psychological after-care of patients and best practices in helping patients maintain their overall success.

Research Questions: The following research questions were specified for the current study: What are the psychological impacts on individuals participating in post-operative counseling groups; To what extent does the Cognitive-Behavioral Approach to group counseling effect lifestyle changes in post-operative patients?; Is there a direct correlation between cognitive-behavioral counseling groups post-operatively and weight loss? **Method:** A qualitative method was used to assess the effectiveness of the Cognitive-Behavioral Group patients participated in. The sample was derived from advertising to post-operative bariatric patients who had gained back weight they had loss since having weight loss surgery. Over the course of 1 calendar year, 8 different groups were executed for patients. Weight history, age, surgery type, surgery year, and sex were recorded prior to their participation in the group. Upon completion of the 8-week group, patients participated in a structured interview to rate their thoughts, feelings, success, and other outcomes during the 8 week process. The data was compiled and coded in order to present accurate findings.

Data and Analysis: Research findings and analysis of data are ongoing; however, initial analysis shows an increase in weight loss among at least 79% of patients involved in groups and an overall feeling of success in being able to overcome emotional and physical hurdles impeding weight loss. Qualitative self-reporting from participants also suggests that bariatric patients experiencing post-operative weight gain could benefit greatly from cognitive-behavioral groups after having weight loss surgery.

Conclusion: Implications include best practices for mental health providers in post-operative treatment of bariatric patients. Much of the current research connected to mental health and bariatric surgery has been focused greatly on pre-operative clearance; however, with the population of patients having bariatric surgery increasing, the mental health services for these patients must expand to enhance their post-operative care.

A5202

ENHANCING THE KNOWLEDGE BASE OF HEALTHCARE PROVIDERS WHILE IN TRAINING REGARDING WEIGHT MANAGEMENT OUTCOMES

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Obesity is a public health issue of global monumental importance. Healthcare providers have the enormous responsibility to find effective strategies to treat and even prevent the disease of obesity. The disease of obesity is so significant and a public health challenge that health care providers while in training, specifically nurse practitioner students must have enhanced and strengthened strategies to deliver competent care for this population. Although the training of health care providers in the United States is viewed as the best benchmark, much work remains to be done. Entry-level readiness is required to support competency, however even seasoned practitioners find it difficult to provide care to the obese population regarding weight management outcomes. This project consist of a pre test called the Obesity Risk Knowledge-10, it is a Validation of a brief, reliable scale to measure knowledge about the health risks associated with obesity, then a educational engagement following a post test of the same tool. A p value (0.05) will be determined from the pre test and the post test after the educational engagement is explored.
The current education of our health care providers must support the ambitious efforts to effectively prepare entry-level providers regarding obesity. The purpose of this project is to strengthen the knowledge base of all healthcare providers by utilizing nurse practitioner students; in the areas of developing, implementing and evaluating an effective plan of action in treating the overweight and obese population. This doctoral project has a focus on the obese population to identify areas that need enhancement and or strengthening for practice to prepare nurse practitioner students for entry-level excellence. The novice nurse practitioner's arsenal for practice will now include effective weight management tools. The tools are in the form of obesity algorithms as an avenue to support, coach, encourage an individualized treatment plan. At the conclusion of the project the student nurse practitioner will have increased confidence and competency in regards to caring for the obese population.

A5288

Motivation and time commitment do not impact early weight loss after weight loss surgery

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Previous studies have identified poor early weight loss at first post-operative visit as a predictor of poor weight loss at one year following bariatric surgery. This has allowed for early patient identification and an opportunity to alter the clinical course. At our institution we have created a seven weeks course, titled "Early Intervention" which is specifically designed to intervene and help patients get back on track for those with poor weight loss at the one month visit. This program is offered to patients at their pre-operative visit. The purpose of this study is to evaluate if motivation and time commitment to such programs impact early weight loss following weight loss surgery. Following IRB approval, 151 patients were identified. Patients' characteristics and procedure type were recorded. In addition, Excess Weight Loss (EWL) was calculated and follow-up attendance and nutrition evaluation at three weeks and three

months were recorded. Sixty nine (46%) patients agreed to participate compared to 82 patients who were not willing. There was no statistical significance between the two groups in terms of mean age (P=0.60), gender (P=0.84), ethnicity (P=0.32), or type of procedure chosen (P-0.14) (Table 1). Patients who agreed to participate had a slightly higher mean initial BMI, although not statistically significant (P=0.65). No differences were seen between the two groups in terms of EWL at 3 weeks and 3 months follow up, P=0.97 and P=0.48, respectively. In addition, follow up attendance was higher in the consented groups, 95% versus 89%, although not statistically significant. Motivation and time commitment to post-operative intervention programs do not have any impact on early (up to 3 months) weight loss after weight loss surgery. This calls into question pre-operative programs, which are intended to wean people who may potentially not have the motivation and time commitment to participate.

TOPIC: Malabsorptive Procedures

A5203

ARE THE POSTOPERATIVE OUTCOMES OF MALABSORPTIVE BARIATRIC PROCEDURES TRULY SUPERIOR TO RESTRICTIVE BARIATRIC PROCEDURES?

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Introduction: Bariatric surgery is an effective method of treatment for morbid obesity as it provides not only weight loss but also resolution of obesity-related co-morbidities. The aim of this study was to evaluate the clinical efficacy of malabsorptive procedures (Laparoscopic Gastric Bypass-LGBP & Duodenal Switch-DS) versus restrictive procedures (Laparoscopic Sleeve Gastrectomy-LSG) as it relates to percentage excess weight loss, postoperative complications & resolution of comorbidities.
Methods: A systematic review was conducted identifying all relevant studies from 2005 – 2015 with comparative data on malabsorptive and restrictive procedures. The primary outcome was percentage excess weight loss and postoperative complications (leaks, bleeding, strictures etc.).The secondary outcome was resolution of comorbidities (Diabetes Mellitus-DM, Hyperlipidemia-HLP, Gastroesophageal Reflux Disease-GERD & Hypertension-HTN). The results were analyzed as standard difference in means with standard error. Statistical analysis was done using random-effects meta-analysis to compare the mean value of the two groups (Comprehensive Meta-Analysis Version 3.3.070 software; Biostat Inc., Englewood, NJ).
Results: Thirteen studies were quantitatively assessed and included for meta-analysis including one double-blind randomized controlled trial, two randomized controlled trials, three prospective studies and seven retrospective studies. There were a total of 3,035 LGBP patients, 155 DS patients, and 2006 LSG patients. Malabsorptive procedures were associated with greater %EWL (-0.070 ± 0.03; p=0.02) and postoperative complications (2.03 ± 0.07; p< 0.001) when compared to restrictive procedures. GERD demonstrated greater postoperative occurrence in restrictive procedures compared to malabsorptive procedures (-2.05 ± 0.07; p< 0.001). Malabsorptive procedures were associated with greater resolution of comorbidities in terms of DM (0.87 ± 0.07; p< 0.001), HLP (1.03 ± 0.09; p< 0.001) & HTN (-0.48 ± 0.65; p< 0.001). CONCLUSIONS Malabsorptive bariatric procedures yielded significantly higher percentage excess weight loss, rate of postoperative complications and resolution of comorbidities than restrictive procedures.

A5204

SWITCHING BILIOPANCREATIC DIVERSION TO ROUX-Y BYPASS TREATS COMPLICATIONS AND FAILURE TO LOSE WEIGHT

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Background: Nicolas Scopinaro has popularised Biliopancreatic Diversion (BPD) as a malabsorptive procedure and he focused on leaving a relatively large stomach to maintain high intake of protein and argues that a reduced stomach volume is associated with a higher reintervention rate No significant modification has been done to this procedure as a result of the reluctance of bariatric surgeons to perform the procedure outside of Italy. In Saudi Arabia, we had a surge in the number of BPD procedures as it has become the main procedure in two high volume public centers. We have performed the procedure in a few patients but we have dealt with the complications of this procedure in many others.

Methods: We describe 6 cases that required switching to Roux-Y bypass for: Hypoproteinemia, severe vitamin and iron deficiency, residual morbid obesity, and pathological fractures. Two of the six cases had their deficiencies corrected temporarily and refused to undergo further surgery, for financial reasons. All operated cases had either hypoproteinemia or failure to lose enough weight. Patients with deficiencies had them corrected prior to surgery. In three of them, the revision consisted of revising them to a Roux-y bypass: 1. Reattaching the distal end of the alimentary limb on the biliopancreatic limb 30 to 50 cm from the ligament of Treitz 2. Restricting the gastric pouch and the gastroileostomy by sleeving them in continuity or taking the anastomosis down and creating a new 30cc gastric pouch and a 1.5 cm diameter gastroileostomy. Procedure was done in one stage except for one patient who was converted to open as the abdomen could not be insufflated due to severe oedema of the abdominal wall and she had to have the procedure in two stages as she was critically ill and she regained weight to morbid obesity level a year after stage 1.Operative findings showed the common channel was ultra short reaching 40 cm and a huge stomach. The last case, patient requested reversal with gastroduodenostomy and jejunoileostomy.

Results: Postoperatively, all patients recovered from their deficiencies; reaching a BMI between 28 and 31. They all showed improvement in their quality of life score on follow up. Patients had no micronutrient deficiency off vitamins and supplements one year after surgery

Conclusion: Bypassing small bowel is often associated with protein malnutrition and micronutrient deficiency that could cause disastrous consequence especially if the patient develops any acute unrelated illness. High cure rate from co-morbid illnesses does not justify the risk associated with BPD. Hypoalbuminemia is partly related to the size of the stomach especially in cases where the common channel length was 50 cm as described by Scopinaro Removal of the distal stomach can have deleterious effects as it made reversal technically not feasible in many cases. In critically ill patients the procedure should be staged where the priority is to correct hypoalbuminemia then to address the weight regain risk. Even in patients with normal micronutrients and failure to reach a desirable weight, conversion to a proximal Roux-Y Gastric bypass is a successful option to lose to ideal weight without the potential risk of protein malnutrition, it can be done in a single stage or a two stage surgery.

A5205

THE LAPAROSCOPIC STOMACH, INTESTINAL AND PYLORUS SPARING (SIPS) PROCEDURE; A SINGLE CENTER ANALYSIS OF OUR FIRST 100 PATIENTS

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Background: The sleeve gastrectomy with a single anastomosis duodenal-intestinal bypass procedure has been gaining in popularity since first described by Dr. Torres several years ago. It has gone by many names most notably

the Stomach Intestinal and Pylorus Sparing surgery (SIPS). However, there are few studies describing the results of these procedures.
Methods: Using our internal practice database and the MBSAQIP database, clinical data was obtained for our initial set of 100 Patients who underwent the SIPS procedure and compared with the data of those who underwent a laparoscopic sleeve gastrectomy, laparoscopic roux- en-y gastric bypass, and a laparoscopic duodenal switch. Main outcomes were weight loss and 30 day risk adjusted serious morbidity and mortality.
Results: We analyzed our first 100 patients who underwent a SIPS procedure and compared them to similar patients who underwent a laparoscopic sleeve gastrectomy (SG), gastric bypass, and a duodenal switch. So far the EWL is comparable in the patients already seen, and we expect that trend to continue or even more closely mirror the results of RNY or DS with a risk profile that is less than that of DS or RNY.
Conclusion: The use of Laparoscopic SIPS procedures have been increasing on a national level. Compared with laparoscopic gastric bypass and duodenal switch, a SIPS procedure is associated with a lower 30-day risk-adjusted serious morbidity and equivalent 30-day mortality with increased weight loss

TOPIC: Metabolic Surgery for Diabetes

A5206

THE EFFECT OF LAPAROSCOPIC ROUX-EN-Y GASTRIC BYPASS VERSUS LAPAROSCOPIC SLEEVE GASTRECTOMY ON RESOLUTION OF TYPE 2 DIABETES MELLITUS IN PREDOMINANTLY UNDERSERVED MINORITY POPULATION OF MORBIDLY OBESE PATIENTS.

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Purpose: The burden of diabetes is much higher in minorities especially in the underserved areas. Over 10.8 percent of non-Hispanic blacks, 10.6 percent of Mexican Americans, and 9.0 percent of American Indians have diabetes, compared with 6.2 percent of whites. Evidence based clinical trials have suggested that bariatric procedures such as roux-en-y gastric bypass (GBP) and sleeve gastrectomy (SG) produce sustainable weight loss with resolution of co-morbidities including type 2 diabetes mellitus. The aim of this study is to compare the 6 month, 1 year, and 2 year outcomes of GBP versus SG on resolution of type 2 diabetes mellitus in our predominantly Hispanic and African American patient population.

Methods: A retrospective cohort study was conducted using a single institution database. Patients were included if they had a diagnoses of diabetes mellitus and had undergone either GBP or SG between 2009 and 2013. Age, body mass index (BMI), Hemoglobin A1c (HgA1c) and diabetes medications were assessed preoperatively at 6 month, 1 and 2 year intervals. Univariate comparisons were conducted using t-tests for continuous variables and chi-square tests for categorical variables. Repeated measures ANOVA was used for analysis of HgA1c and BMI to assess the effect of time and for comparison between procedures.
Results: Eighty seven percent of the patients were identified as Hispanic or African-American. Of the 117 patients identified, 64 underwent GBP and 53 had SG. Both groups of patients were comparable with regards to age (Mean age 51.0 for GBP and 53.2 for SG, p=0.1996); pre-surgical BMI (mean 46.1 for GBP and 45.5 for SG, p=0.6982) and pre-surgical HgA1c (mean 7.9 for both groups, p=0.9). Most patients were females (84% in the GBP group and 81% for SG, p=0.6428) and on pre-surgery type 2 diabetes mellitus medications (100% for the GBP group and 96% for the SG group). At 6 month, GBP patients had an average BMI of 35.50, HgA1c 6.41, and 44.68% of patients were no longer on any diabetic

medications, whereas SG patients had an average BMI of 36.70, HgA1c 6.81, and 36.96% of patients were no longer on any diabetic medications. At 1 year interval, GBP patients had an average BMI of 33.44, HgA1c 16.26 and 51.28% of patients were no longer on diabetic medications, compared to SG patients who had an average BMI of 35.43, HgA1c 6.84, and 48.48% of patients were no longer on diabetic medications. While both groups experienced improvements on HgA1c over time ($p<0.0001$) repeated measures ANOVA revealed no differences between the 2 groups. While both groups experienced a reduction in BMI ($p<0.0001$), there was a difference between the 2 groups ($p=0.0186$) with the GBP group experiencing greater and continued weight loss up to 2 years.

Conclusion: Bariatric surgery serves as an effective therapeutic option for morbidly obese patients in terms of sustainable weight loss as well as resolution of type 2 diabetes mellitus in the minority obese patients. This study suggests that SG has equal efficacy in comparison to GBP bypass on resolution of type 2 diabetes mellitus in the short term in our patient population. The data suggests a trend towards early weight regain and re-emergence of diabetes in sleeve gastrectomy patients.

A5209

PRIMARY INADEQUATE WEIGHT LOSS AFTER ROUX-EN-Y GASTRIC BYPASS IS NOT ASSOCIATED WITH POOR METABOLIC OUTCOMES

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Background: Despite the effectiveness or Roux-en-Y gastric bypass (RYGB),, some patients have suboptimal weight loss or weight regain after surgery.
Objective: The aim of this study is to determine the rate of inadequate weight loss one year afterRYGB in a high-volume tertiary center. **Setting** Academic center, United States
Methods: Weight loss outcomes of 2,420 RYGB patients were assessed during the first postoperative year. Primary inadequate weight loss was defined as total body weight loss (TWL) less than 15% at twelve months after the procedure. Changes in metabolic comorbidities, including hypertension, diabetes, and dyslipidemia were evaluated in this selected cohort.

Results: We identified 105 (4.3%) patients of 2,420 with primary inadequate weight loss during the 12-year period study. The cohort had a male-to-female ratio of 1:2.6, mean age of 49.3 ± 11.3 years, mean number of comorbidities of 4.1 ± 2.0, mean initial excess weight of 62.0 ± 25.6 kg, and mean BMI of 46.8 ± 8.8 kg/m^2. Of the 105 patients, 81 (77.1%) had hypertension, 67 (63.8%) had hyperlipidemia, 52 (49.5%) had diabetes, and 33 (31.4%) binge eating disorder. A total of 103 (98.0%) cases were completed laparoscopically except in two (1.9%) patients. Mean operative time and length of stay were 199.2 ± 72.1 minutes and 4.6 ± 10.8 days. Two (1.9%) major intraoperative and five (4.7%) early (first 30 days after surgery) postoperative complications occurred. At 12 months; mean BMI and excess weight significantly improved (41.9 ± 7.9 kg/m^2 and 48.0 ± 22.1 kg, respectively), $p<0.01$. Total %EWL and %WL were 24.4 ± 15.6%, and 10.2 ± 4.8%, respectively ($p>0.05$). Additionally, all metabolic parameters including mean plasma glucose (128.9 ± 55.3 vs 102.7 ± 27.3 mg/dl), LDL cholesterol (103.6 ± 35.8 vs 89.2 ± 30.0 mg/dl), triglycerides (177.3 ± 139.1 vs 117.6 ± 59.3 mg/dl), HDL cholesterol (46.3 ± 11.6 vs 54.1 ± 12.7 mg/dl), and hemoglobin A1C (7.3 ± 1.9 vs 6.1 ± 1.0%), significantly improved ($p<0.01$). Type 2 diabetes (T2DM) and hypertension also improved in 39 (75%), and 27 (37%) patients, respectively. Insulin and oral anti-diabetic agents requirements decreased from baseline ($p<0.01$). Six (5.7%) late complications were reported in the studied cohort.

Conclusion: The results of our study suggest that primary inadequate weight loss after RYGB is not associated with suboptimal metabolic outcomes. Further research is needed to confirm these results in the long term.

A5210

LAPAROSCOPIC SINGLE ANASTMOSIS SLEEVE ILEUM BYPASS (SASI BYPASS) : TECHNIQUE AND PRELIMINARY RESULTS

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Objective: In bariatric surgery, still new surgical techniques are developed .SASI bypass is a Novel Metabolic/Bariatric Surgery operation based on mini gastric bypass operation and Santoro 's operation in which a sleeve gastrectomy is followed by an side to side gastroileal anastmosis . The preservation of the normal way of food and as in the same time the undigested food touch the mucosa of the ileum to induce metabolic effect of the operation in which reduce operation time , no mesenteric openings and decrease of nutritional deficiency**.**
Methods: We review the results obtained from the first 50 patients who underwent laparoscopic SASI bypass with one year follow up .The inclusion criteria for the study were according to the Asian Pacific Bariatric Surgery Society guidelines. Sleeve gastrectomy was performed over a 36-Fr bougie, 6 cm from the pylorus , 250 cm from the iliocecal valve the ileum brought to be anastmosis side to side with the antrum.
Result: The mean BMI 47 Kg/m2 were operated on . Hypertension was present in 25 % , sleep apnea in 10 % , hypertriglyceridemia in 70 % ,hypercholesterolemia in 50 % and all patients are type 2 diabetes , most of them an oral antidiabetic therapy for at least 3 years . There are one complete stricture at gastroileal anastmosis which is revised after 3 months . Follow up is complete in all patients . EBWl reached 95.6% at one year . At one year mild anemia in one patient and one patient has low albumin level but above 3 , all patients have normal glucose level in the first month after surgery with no need to antidiabetic therapy.
Conclusion: SASI bypass is a promising operation which offers excellent weight loss and metabolic result . The elimination of two ways for passage of food and one anastmosis decrease nutritional deficiency and the possibility of surgically related complications .

A5211

SLEEVE GASTRECTOMY (LSG) IN LOW BMI INDIANS WITH TYPE II DIABETES MELLITUS (T2DM) - RETROSPECTIVE ANALYSIS OF GLYCEMIC CONTROL

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Background: Laparoscopic Sleeve Gastrectomy (LSG) is known to be effective for T2DM in the Morbidly Obese patients, however very few studies quote results of LSG in non-morbidly Obese. Such study is more important for Asians since T2DM occurs at a lower BMI.
Methods: Retrospective analysis of prospectively collected data of 32 patients, M:F 19:13, Aged 28 to 60 years, BMI 26.4 to 34 kgs/m2, with Metabolic syndrome and uncontrolled T2DM , HbA1c > 7.5 % and C. Peptide > 1, subjected to LSG, were evaluated at baseline and at 2 years, for glycemic control and % Excess Weight Loss (EWL). 22/ 32 were on Oral Hypogycemic drugs (OHA), 10/32 on Insulin in addition. Average duration of T2DM was 5 years.
Results: 25 of the 32 were in remission and 7 had improvement in glycemic status at 2 years, with mean % EWL of 68%. Of those 10 on insulin, 7 were in remission and 3 improved on OHA and were off insulin. Remission correlated with % EWL.
Conclusion: LSG could improve T2DM in non-morbidly obese Indians. Larger studies with longer follow up may be recommended to benefit a larger population.

A5212

BARIATRIC SURGERY FOR OBESE PATIENTS WITH A GAD ANTIBODY POSITIVE

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Background A growing body of evidence has demonstrated that significant and sustained improvement in glycemic control in type 2 diabetes after bariatric surgery. However, patients with a glutamic acid decarboxylase (GAD) antibody positive are thought to be in contraindications of bariatric surgery. There was no data for result of bariatric surgery for Asian Diabetes patient with the GAD antibody positive.
Patients: Five Japanese morbidly obese diabetic patients (F/M=2/3) with the GAD antibody positive underwent two different types of bariatric surgery in our center. The mean titer of anti-GAD antibody was 4.7 u/ml (range; 3.5-6.5, normal range: less than 1.3). The mean preoperative age, BW and BMI were 37.6 years old, 113.1kg and 39.7 kg/m2, respectively. The mean duration of diabetes from diagnosis was 6.9 years and the mean HbA1c was 8.8%. One patient was treated with insulin, two with oral anti-diabetic agent and one with life style modification.
Result: LSG was performed in 2 patients and LSG/DJB was performed in the remaining 3 patients. The mean follow-up period was 19.6 months (range; 2-36 months). At 1 year (n=4), the mean BW and BMI significantly dropped to 83.0kg and 30.1 kg/m2, respectively ($p<0.01$), accounting for the mean %EWL of 71.1%. The mean HbA1c became from 8.75 to 5.4%. All the four patients satisfied the ADA definition of complete remission (HbA1c less than 6% without diabetic medication). This trend of good glycemic control was durable up to 3 years of follow-up (n=3). One patient was followed up less than one year. He was the most severe case (duration of DM; 22 years, Insulin injection : 88 units/day , HbA1C 8.8% and BMI29.6) and stll could not achieve remission at 2 months after surgery. However he could achive better glycemic contol and HbA1C became 7.4% with 13units of insulin and one oral agent at 2 months after surgery.
Conclusion: Bariatric surgery in obese type 1 diabetic patients with GAD antibody weakly positive seemed effective in glycemic control in short-term. Weak positive of the GAD antibody may not be a contraindication of bariatric surgery. Longer follow up with larger number of patients, and also, the validation with more advanced type 1 diabetes patients will be needed.

TOPIC: Nutrition

A5213
EFFECT OF MOVIE VIOLENCE ON MOOD, STRESS, APPETITE PERCEPTION AND FOOD PREFERENCE: A RANDOMIZED CONTROLLED TRIAL

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Background: TV/movie watching has been associated with increased risk for obesity. Weight gain is promoted due to both the sedentary behavior aspect of watching TV/movies and the increase in energy intake while doing the activity (snacking, eating alone, impulsive eating). Violence has become a major component of media content and it results in an increase in heart rate, blood pressure, and a general effect on cardiovascular health. Yet, few studies have investigated media violence and its effect on appetite, eating behavior and food preferences specifically. Two studies conducted on playing violent video games, which is a participatory game, indicated that such violence exposure was associated with elevated markers of stress and appetite, and an increased consumption of food during a test meal. he present study aimed at investigating the immediate acute effect of violence in movies, on appetite and stress hormones, heart rate and blood pressure, along with food preferences and intakes in young normal weight individuals.

Methods: Eligible participants (n=45) age between 18-40, normal BMI, are randomized to either control group (watching a nonviolent narrative movie) or the experimental group (watching a violent movie). Subjects are required to fast and to avoid drinking caffeinated beverages for 12 hours prior to their visit in which assessments and movie watching occurs. Upon arrival, height, weight, and waist circumference are measured. Baseline measurements are taken after subjects consume a standardized breakfast which include Heart Rate (HR), Blood Pressure (BP), Grip Strength, and appetite and stress perception using the Visual Analogue Scale (VAS). Saliva sample collection is performed too for the alpha-amylase analysis. Similar measurements are performed after movie viewing. Subjects are then provided with a snack tray after the movie containing various items (salty, sweet, fatty, healthy, etc) to be consumed ad libitum whereby ingested quantities are calculated afterwards. Study is performed at the Lebanese American University.

Preliminary Results: 22 participants have so far completed the trial, data collection will be done by June 1st. Preliminary results showed that passive exposure to movie violence lead to an elevated HR (p=0.04), Grip Strength (p=0.032) (indicator of stress and glucose release in the muscle) and stress (measured by the VAS) in the experimental group compared to the control. No changes has been noted in blood pressure. An increase in appetite and a preference for fatty foods was observed. Results of the salivary amylase will help us understand the relation between changes in eating behavior in relation to stress.

Conclusion: This very novel trial will help us in understanding the effect of violence in movies (and other medium) on food preferences, appetite and eating behavior. Violence has become a major component in media and might be affecting weight balance in high consummers. The study is a replica of real life environement/experience and could hold promising results

A5214

SUCCESSFUL WEIGHT LOSS POST BARIATRIC SURGERY ASSOCIATES WITH GREATER AFFINITY FOR HEALTHY DIETARY AND ACTIVITY BEHAVIORS—PRELIMINARY SUPPORT FROM A CASE-CONTROLLED STUDY

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Background: Little is understood about which dietary-related factors predict successful weight loss after bariatric surgery. In addition to the surgical intervention, weight loss and maintenance requires alterations in both energy intake and expenditure. The question of interest is if bariatric surgery associates with changes in affinity for dietary and physical activity behaviors associated with weight loss. Aim: In a pilot investigation, we aimed to compare reported liking of food and physical activity between morbidly obese females before bariatric surgery with females 1-year post-surgery. We hypothesized that those more successful with weight loss post-surgery will report greater liking for foods and activities that associate with energy deficit/balance. Based on previous research, survey-reported liking is a proxy for dietary intake, correlating well with reported food intake, biomarkers of nutritional status and reported physical activity.

Methods: A case-control study was conducted with a convenience sample from one bariatric surgery program: 10 morbidly obese adult females pre-bariatric surgery; 15 females 1-year post-surgery. The post-surgical group was recruited from the highest and lowest quartiles of excess weight loss at 1-year. The post-surgical group included those most successful (N=11, highest quartile) and less successful (N=4, lowest quartile) in weight loss following gastric bypass (N=6) or sleeve gastrectomy (N=9). The women completed a validated, 100-item liking survey comprised of foods/beverages, physical/ sedentary activities, and general pleasurable/unpleasurable experiences. They were oriented on the survey with graded examples of liked (winning the

lottery, succeeding), neutral (doing a routine chore), and disliked (running out of money, paper cut) activities placed on a bi-directional, horizontal scale labeled at either end with strongest disliking/liking of any kind (score ±100) and mid-point of neither like nor dislike "it's okay" (score 0). The survey items were formed into 16 groups (averaging the scores across the items)—nutritional (alcohol, desserts, fruits, vegetables, protein, sugar-sweetened beverages, fats, carbohydrates, fiber, salty); additional sensory groups (bitter, spicy, sour), physical activities; and pleasurable and unpleasurable experiences. A single additional item, watching television, was the sedentary behavior. The nutritional groups were formed into an index of dietary quality (i.e., diet healthfulness; Sharafi et al., 2015) similar to the USDA Healthy Eating Index (Guenther et al., 2010). The liking group scores were treated two ways for assessing differences between pre- and post-surgery: as ranking of mean scores from least to most preferred for Mann-Whitney U testing; and as absolute mean scores for t-tests. Significance criterion was $p \leq .05$.
Results: Patients took between 4 and 6 minutes to complete the survey. The responses indicated that the task was understood (e.g., unpleasurable experiences were reported least liked, watching television as most liked), scores varied across participants and the liking groups showed reasonable internal reliability (Cronbach's alpha$\geq$0.6). Among all patients (pre and post surgery), alcohol, bitter, sour and spicy foods were the least liked, while fruits, protein foods, and fats were the most liked. In non-parametric analyses, there were significant differences in ranking of liking groups between the pre-surgery group compared with the post-surgery group (N=15). Compared with pre-surgery, post-surgery patients ranked significantly higher liking for fiber-rich foods and physical activities yet ranked significantly lower liking for sugar-sweetened beverages, and watching television. In parametric analyses comparing the mean differences, post-surgery patients reported significantly greater dietary quality scores, including lower liking for desserts, sugar-sweetened beverages, and fats/fatty foods, as well as greater liking of physical activity and lower liking of watching television and pleasurable activities. Females in the less successful weight loss group did not show significant differences in ranking or magnitude of liking compared with females in the pre-surgery group. Thus, those who were more successful at weight loss drove the differences between pre and post-surgery groups.
Summary: These preliminary findings suggest that patients who are successful at weight loss at 1-year reported different food and activity liking than those who are awaiting bariatric surgery. Those most successful at weight loss post-surgery reported greater liking for an overall healthier diet, including lower affinity for energy-dense foods (sweets, fats), sugar sweetened beverages and fiber-rich foods. The liking for physical activities also was greater in women post-surgery than those pre-surgery. Those who were less successful at weight loss post-surgery failed to report liking for foods or physical activities that would support or sustain weight loss. The findings are limited by the small sample size and comparisons across groups (i.e., not repeated measures of the same patients pre- to 1-year post-bariatric surgery). Nonetheless, the liking survey is a feasible and useful assessment of food and activity behaviors, with preliminary findings supporting the hypothesis that females who have lost weight report food and activity behaviors that might sustain this weight loss. We are recruiting more subjects to more fully test the study hypothesis. Future studies are recommended to determine if these behaviors vary by the type of surgery given differing physiological effects associated with the procedures.

A5215

PREVALENCE OF VITAMIN D DEFICIENCY AND SECONDARY HYPERPARATHYROIDISM IN A MINORITY BARIATRIC SURGERY POPULATION

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Background: Vitamin D (Vit D) deficiency is more common in Hispanics and African-Americans (AA) compared with non-Hispanic Caucasians (1) and in morbidly obese compared to normal weight patients, since Vit D is lipophilic and stored in fat cells (2). We previously evaluated our patients, 2 years status post bariatric surgery to look at the prevalence of Vit D deficiency and secondary hyperparathyroidism. The objective of this current study was to update our prior study with a patient cohort which has significantly increased in size and has a greater length of follow-up available, to see if abnormalities persist or are corrected long term, when patients experience weight stabilization and are no longer expected to have rapid vitamin and mineral shifts. .
Methods: Retrospective study of Vit D and parathyroid (PTH) status in a predominately white Hispanic and AA morbidly obese population undergoing bariatric surgery from 2006-2014 at a New York City public hospital. Serum levels of 25(OH)Vit D, parathyroid hormone and creatinine/GFR measured as part of routine evaluations, pre-op and post-op at 6 months, and then annually for years 1-4 were obtained from electronic medical records. Inclusion criteria: patients with concurrently measured 25(OH)VitD and PTH pre-op and at a minimum of at least one of the post-op time points. Exclusion criteria: patients with a diagnosis of 1° or 3° hyperparathyroidism or CKD stage 3 or greater. Primary outcomes: % of patients with Vit D deficiency, defined as 25(OH)Vit D level under 20 ng/mL; % of patients with Vit D insufficiency, 25(OH)Vit D of 21-29 ng/mL and % of patients with secondary hyperparathyroidism, at the pre-specified time points. Data are expressed as mean ± SD. Differences were tested by Mann-Whitney U-test and associations assessed by Pearson's correlations. P-values <0.05 were considered statistically significant.
Results: 486 patients met inclusion criteria. Mean age at time of surgery was 41 ± 11.76 yrs (range 18.30 - 68.79 yrs); 91.76% females; 77.37% white Hispanic, 17.90% African-American. See Table 1 for complete demographic information. Roux-en-Y gastric bypass (RYGB) was performed in 60.29%, sleeve gastrectomy (SG) in 36.62% and laparoscopic adjustable gastric banding (LAGB) in 3.09%. Mean Vitamin D and PTH levels along with rates of Vitamin D deficiency, Vitamin D insufficiency and secondary hyperparathyroidism at each time point are detailed in Table 2. Mean pre-op Calcium was 9.30 ± 0.4 mg/dL (range 8.2-11.6mg/dL). Vit D levels had a statistically significant inverse correlation with PTH levels before surgery and after surgery at years 1-3, but not at 6 mos and 4 years post-op.
Discussion: Pre-op mean Vit D levels in this group of morbidly obese Hispanic and AA patients were in the range of Vitamin D insufficiency, briefly reaching the level of sufficiency at 6 mos post-op and thereafter remained insufficient. Additionally, the prevalence of Vit D deficiency was 21 % pre-op and decreased significantly at each post-op time point compared with pre-op rates, while rates of Vit D insufficiency increased concurrently over time. Our results illustrate that these patients who remain under heightened medical care after a surgical procedure are receiving repletion, as evidenced by the decreased prevalence of Vit D deficiency, yet their levels of Vit D remain suboptimal. This study is limited by its retrospective nature, an inability to gauge compliance with supplementation, particularly calcium, which could affect PTH levels, and the smaller number of patients with follow-up labs at the furthest time points post-op. Prospective studies are needed to determine optimal repletion guidelines for bariatric patients for Vitamin D and to evaluate for sufficiency of other vitamin and mineral levels post-op as well.
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A5216
GASTROINTESTINAL SYMPTOMS COMPARISON BETWEEN ROUX EN Y GASTRIC BYPASS VERSUS SLEEVE GASTRECTOMY IN A MEXICO CITY PUBLIC BARIATRIC CENTER

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Introduction: Roux en Y Gastric Bypass and Sleeve Gastrectomy are safe and effective bariatric procedures for treatment of obesity and its comorbidities producing anatomical, mechanical and physiological changes of the gastrointestinal tract. These modifications promote food restriction and may cause a variety of gastrointestinal symptoms. The objective of the study was to compare the prevalence of gastrointestinal manifestations after bariatric surgery.
Methods: A gastrointestinal signs and symptoms questionarie was performed in all patients at 1 month after their primary bariatric surgery (RYGB and SG) from July 2013 to February 2015 at the "Clínica Integral de Obesidad y Enfermedades Metabólicas del Hospital General Dr. Rubén Leñero", in Mexico, City, Mexico. The test included 16 items (pyrosis, disphagia, food intolerance, dry mouthdeness, nausea/vomiting, number of depositions, change in bowel habits, transanal bleeding, number of daily flatus, presence of dark urine, cephalagia, mood disorder, astenia/adinamia, sleep disturbance, sadness and dumping syndrome). Statistical analysis was performed with IBM SPSS Statistics v. 22, with a KS and Student t test for parametric independent samples and Mann Withney U for ordinal samples, with a significance reported with $p<0.05$.
Results: Two hundred thirteen patients post primary bariatric surgery were included, 168 (79.9%) were RYGB and 45 (21.1%) sleeve gastrectomies. One hundred and seventy five patients were female (82.1%) and 38 were male (18.34%); mean age was 37.1 ± 9.8 (19-65) years. The most common gastrointestinal signs and symptoms in RYGB group were: changes in bowel habits (52.9%), dry mouthness (52.3%), flatulence and asthenia / adinamia (44%), and in SG group were (48.8%), heartburn (46.6%) and changes in mood (42.2). There was a significant difference in gender among RYGB and SG patients (RYGB 86.3% and SG 62.2% females $p<0.05$), with no difference observed with age ($p=0.433$). When gastrointestinal signs and symptoms were compared between RYGB and SG patients, change in bowel habits, sadness and dumping syndrome presentes statistical difference ($p<0.05$).
Conclusions: Post bariatric patients suffer form a variety of GI symptoms in many differents ways, related to the changes at their GI tract anatomy. At our study, SG and RYGB had simlilar rate of GI symptoms. Post RYGB patients main complaint was associated with change in bowel habits and dumping syndrome, meanwhile SG patients complain mainly on gastresophageal reflux symptoms. When compared both groups, RYGB group showed statistical diferrence among change in bowel habits, flatulence and dumping syndrome. A higher sample size and longer follow up is suggested to confirm our results.

A5217

THE STATE OF VITAMIN D TREATMENT IN BARIATRIC SURGERY CANDIDATES: A PROSPECTIVE CHART REVIEW OF PATIENTS SEEKING WEIGHT LOSS SURGERY

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Importance: Obesity is a known risk factor for vitamin D (VitD) deficiency and fat mass correlates with VitD status. Thus, patients with morbid obesity seeking surgical weight loss

treatment are at high risk of poor VitD status. We have found VitD deficiency (< 20 ng/ml) in 71.4% of a sample of our patients.
Objective: To assess the extent to which our bariatric patients, a high risk population for VitD deficiency, are having their VitD status tested by their Primary Care Physician (PCP) prior to bariatric surgery and to assess whether and how our patients are being treated for VitD deficiency pre-operatively.
Design, Setting, and Participants: We reviewed the electronic medical records of all bariatric surgery candidates at our center with upcoming appointments from November 2014 through January 2015 (3 months). To assess the rate of VitD testing by PCPs, we collected serum 25(OH)D concentration and test date or order date if testing was still pending. To assess treatment, we collected supplementation information including multivitamin and calcium supplements containing VitD. We collected information about type of VitD ($VitD_3$ or $VitD_2$) as well as dosing and frequency.
Results: Most bariatric surgery candidates were female (83.0%) and were almost equally white (48.7%) and black (44.5%). Median age was 43 years. Median BMI was 46.3 kg/m^2. Male surgical candidates were more likely to be white (71.1%). The most popular procedure was the vertical sleeve gastrectomy (VSG), 55.8%, followed by the gastric bypass (GBP), 35.6%, with 7.6% of patients undecided and 1 interested in the adjustable gastric band (AGB). More than 3 out of 4 procedures were planned to be performed laparoscopicaly. There was no difference in procedure or approach by sex or race. More VSG candidates were white (55.1% vs. 44.9%, p=0.016) as were more laparoscopy candidates (54.4% vs. 46.0%, p=.0192). VitD testing results were on file for 18.5% of candidates and orders were pending for 4.2% for a total of 58 out of 265 (21.9%) potentially having pre-operative results. Median serum 25(OH)D concentration was 21.5 ± 15.3 ng/ml. Availability of VitD status, serum 25(OH)D concentration, nor VitD related history varied by sex or race. Surgical candidates who were tested did not differ from those who were not demographically. Those who had testing were more likely to have a history of VitD deficiency (65.3% vs. 12.2%, p<0.001), be on high dose VitD therapy (26.5% vs. 8.3%, p<0.001), as well as take daily VitD (28.6% vs. 13.0%, p=0.007). Patients who had testing were more likely to be taking $VitD_2$ (24.5% vs. 8.3%, p=0.001) over $VitD_3$. Those taking $VitD_2$ were more likely to be black (53.3% vs. 35.7%, p<0.001) as were candidates on high dose VitD (51.6% vs. 39.0%, p=0.005) Candidates with a history of VitD deficiency were not different from those without a history. There was a trend towards lower serum 25(OH)D concentration in those with a history of VitD deficiency compared to those with no history (21.0 ± 11.4 ng/ml vs. 27.0 ± 20.1 ng/ml, p=0.065). Candidates with a history of VitD deficiency were significantly more likely to have VitD testing results (55.2% vs. 8.3%, p<0.001).
Conclusions and Relevance: We found testing for VitD status to be lower than clinically indicated. While all patients in this cohort have obesity—a risk factor for VitD deficiency—at least 44.5% have more than one risk factor, since these patients have high melanin concentration. Of the candidates who had VitD testing, 34.8% were VitD deficient. Much higher rates of VitD deficiency have been reported for bariatric surgery candidates including a previous study at our center. A significant proportion of bariatric surgery candidates have not had their VitD status tested but yet are likely to be VitD deficient. The consequences of this deficiency on surgical and clinical outcomes have not been fully elucidated.

A5218

A DIFFERENT KIND OF CRAVING: INCIDENCE AND TREATMENT OF PICA AFTER LAPAROSCOPIC ROUX-EN-Y GASTRIC BYPASS

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Background*:* Iron deficiency can occur in patients after Roux-en-Y gastric bypass (RYGB) due to altered absorption postoperatively; with an incidence ranging from 12 - 53%. Pica, the compulsive intake of non-nutritive substances, is

a rare and poorly understood presentation of iron deficiency. The rate of pica in patients who have undergone RYGB has never been reported.
Methods: A retrospective chart review of patients who underwent laparoscopic RYGB from September 2001 to December 2011 was performed. Patients who had complaints of pica or other abnormal cravings were identified.
Results*:* Pica was identified in 17 (1.5%) patients of the 1144 patients who underwent RYGB during the study period. The most common presenting symptom was pagophagia (ice cravings). All patients with pica were female and had multiple risk factors for iron deficiency with 14/17 being premenopausal and 8/17 non-compliant with oral iron supplementation. Patients presented with pica at a mean of 3.6 ± 2.1 years after RYGB. Iron deficiency was identified in all 17 patients with a median ferritin level of 5.5 ng/mL (range 2 – 27). Fourteen (82%) patients had iron deficiency anemia with a concurrent hemoglobin <11.8 g/dL. Intravenous iron was initiated within 3 months after pica symptoms were identified. Twelve patients underwent >1 treatment of intravenous iron, with 4 patients requiring 4 intravenous iron treatments. All 17 patients with pica reported resolution of symptoms after treatment with intravenous iron.
Conclusions: Pica is a rare phenomenon that occurs in approximately 1.5% of patients that undergo RYGB. It is associated with iron deficiency and can occur despite compliance with oral iron supplementation. In our experience, treatment with intravenous iron can relieve symptoms. Patients considering weight loss surgery should be educated on the symptoms of pica prior to surgery. Patients presenting with unusual cravings consistent with pica should be evaluated for iron deficiency.

A5219

ASSESSMENT OF PRE AND POST-OP IRON NUTRITION IN A LARGE COHORT OF BARIATRIC SURGERY PATIENTS

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Introduction: Iron deficiency is common in obese individuals as well as a recognized nutritional complication of bariatric surgery. The threshold defining "low" ferritin levels differs in many studies. Current evidence suggests that postoperative iron deficiencies stabilize about 2 to 4 years after bariatric surgery. Both obesity and ferritin elevation, an acute-phase reactant, have been associated with inflammatory conditions. Molecular associations between severe obesity, low grade inflammation, and iron metabolism may contribute to the relationship between obesity and iron deficiency. The aim of our study was to understand the overall prevalence of iron deficiency following bariatric surgery as well as the time frame at which patients are at greatest risk.
Methods: A total of 3097 research-consented patients who underwent Roux-en-Y Gastric Bypass (RYGP) or Sleeve Gastrectomy (SG) between 2004 and 2013 were studied. Only those 2660 patients with an iron panel including Hemoglobin (Hgb) and Ferritin (F) done together preoperatively were selected for study. Time until postoperative iron deficiency and severe anemia (Hgb<10mg/dL) were estimated using Kaplan-Meier analysis. Cox regression was used to measure association between demographics and time until deficiency.
Results: The 2660 individuals meeting the inclusion criteria included 1653 (62%) with normal pre-op Hgb and F, 598 (22.5%) with low Hgb and/or low F, and 409 (15.4%) with elevated F. Post-op iron labs were available in 1916 (72%) with median follow-up after bariatric surgery of 3.6 yrs. In the group with normal pre-op Hgb and F, the Kaplan-Meier estimated 1-, 3-, and 5-year rates of post-op iron deficiency and severe anemia were 32%, 59%, and 76%; and 11%, 24%, and 36%, respectively. As compared to older females, the females <50 years were 1.39 times more likely to develop post-op iron deficiency (HR=1.39, p=0.0003). As compared to younger males, the males aged >50 years were 1.83 times more likely to develop post-op iron deficiency (HR=1.83, p=0.0006) and 2.04 times more likely to develop severe anemia (HR=2.04, p=0.0017). Baseline

BMI was not associated with post-op iron deficiency.
Conclusion: Our study revealed that iron abnormalities are common after bariatric surgery but do not seem to be associated with preoperative BMI. A significant proportion of bariatric surgery patients with normal iron status preoperatively go on to develop postoperative iron deficiency. Younger females and older males are at the highest risk. Also, the proportion of patients suffering from severe anemia continues to increase 5 years after bariatric surgery. The risk of developing postoperative iron deficiency persists much longer than demonstrated in previous studies. This study presents strong evidence that Hgb levels and micronutrients, including iron, need to be closely monitored for life after bariatric surgery. Further work needs to be done to investigate the impact of perioperative iron deficiency on the inflammatory state and the subsequent risk of postoperative bariatric complications.

A5220

MALNUTRITION IN BARIATRIC SURGERY CANDIDATES: MULTIPLE MICRONUTRIENT DEFICIENCIES PRIOR TO SURGERY

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Background: Over 78 million American adults have obesity. Bariatric surgery is the leading means of durable weight loss. Nutritional deficiencies are commonly treated post-operatively but are often undiagnosed pre-operatively. Malnutrition is correlated with adverse surgical outcomes. **Objectives:** To assess pre-operative nutritional status in our bariatric surgery candidates in a cross-sectional study.
Methods: We recruited 58 bariatric candidates approved to undergo the Roux-en Y gastric bypass. Nutritional status was determined for vitamins A, B-12, D, E-α, and E-β/γ as well as thiamine, folate, and iron. We used clinical as well as frank deficiency cut-offs based on the Institute of Medicine and the World Health Organization guidelines.
Results: This cohort was largely female (77.6%) and white (63.8%). Median age was 42.2 years. Median body mass index (BMI) was 46.3 kg/m^2. Multiple comorbidities (MCM) were present in 41.4%: 54.0% hypertension, 42.0% diabetic, 34.0% sleep apnea. Men had more comorbidities, 69.2% with MCM. Folate and iron saturation varied significantly by sex. Vitamins A, D, E-α, and thiamine significantly varied by race. Vitamin D negatively correlated with BMI (p=0.003) and age (p=0.030). Vitamin A negatively correlated with age (p=0.001) and number of comorbidities (p=0.003). These pre-operative bariatric candidates had significant malnutrition, particularly in vitamin D (92.9%) and iron (36.2% to 56.9%). Multiple micronutrient deficiency (MMND) was more common in blacks (50.0% vs. 39.7% overall). Number of comorbidities did not correlate with MMND.
Conclusions: Malnutrition in one or multiple micronutrients is pervasive in this pre-operative bariatric cohort. The effect of pre-operative supplementation, especially vitamin D and iron, should be explored

A5221

SUPPLEMENT ADHERENCE AT THE MAIN PUBLIC BARIATRIC CLINIC IN MEXICO CITY.

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Background; Adherence to vitamin and minerals supplementation is essential to avoid malnutrition after bariatric surgery. In Mexico an ideal supplementation scheme containing an adequate nutrient concentration is complicated and only achieved after consuming over 5 pills and Vitamin B12 injections.
Methods: A cross-sectional study to evaluate multivitamin supplementation adherence was performed in patients who had bariatric surgery from November 2010 to April 2014 at CLIO. Sample size was calculated with 95% confidence level and 5% confidence interval. To evaluate adherence Morisky-Green and Hermes Spanish validated versions tests were performed to consecutive patients who attended for clinical follow up. Demographics, costs and causes for not taking the supplementation were also asked. Data analysis was performed using SPSS v20. Chi-square test was used in the analysis, $p \leq 0.05$ was considered significant.
Results: From 780 patients, n=258 tests were performed. 81% patients were female, with an age 39.2±10.2 years. Follow up after surgery was 11±9.1 months. A poor correlation among tests was observed, with a 55.4% and 22.1% compliance with Hermes and Morisky-Green tests respectively. Supplementation was observed in 86.8%, never the less; only 4.65% patients fulfilled the ASMBS requirements ($p \leq 0.05$). A monthly cost of 64.6±39.7 dlls was observed. Bad taste, dizziness and missing follow up were the main factors related to poor adherence.
Conclusion: A poor supplement adherence was observed after bariatric surgery. As most patients from our clinic have a low economic level, a high cost of supplements (46.6±31.3% of minimal income) could be an associated factor. A strategy to include bariatric supplements in the public drug program is encouraged.

A5222

WHAT IS THE INFLUENCE OF A GASTRIC BYPASS ON THE INTAKE OF MICRONUTRIENTS? - PRELIMINARY RESULTS OF INOGMA STUDY

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Background: Roux-en-Y gastric bypass (RYGB) is an effective treatment for morbid obesity. Nonetheless, these patients have an increased risk for the development of nutritional deficiencies as RYGB results in a reduced food intake and in an altered anatomical structure of the gastrointestinal tract. The objective of this study was to assess the total intake (both dietary and from supplements) and status of iron, vitamin B_{12}, vitamin C, zinc and copper in patients before and after RYGB.
Methods: Patients who had planned RYGB surgery were included at University Hospitals Leuven, Belgium and were followed until 12 months post-RYGB. Patients completed an estimated dietary record of two non-consecutive days before and 1, 3, 6 and 12 months post-RYGB and supplement/drug use was questioned. Usual dietary intake of iron, vitamin B_{12}, zinc, copper and vitamin C was calculated using the Multiple Source Method (MSM) [1] and compared with the Institute of Medicine (IOM) age- and gender- specific Estimated Average Requirements (EAR) [2]. Furthermore, associations between total intake of these micronutrients and status markers (including hepcidin) were analyzed. Linear mixed models for repeated measures were used for analysis; statistical significance was set at $p<0.05$. This trial was registered at clinicaltrials.gov as NCT01571180.
Results: Fifty-four patients (33♀, 21♂; mean age: 48.0 [95 % CI 46.6; 49.3] years; mean preoperative BMI: 40.4 [95 % CI 39.4; 41.4] kg/m²) were included. One month post-RYGB, the usual dietary intake of the studied micronutrients was significantly decreased compared to pre-RYGB, but gradually increased until 12 months after RYGB, remaining below baseline values (see Table 1). By including supplement intake of the micronutrients, 12 months post-RYGB values were higher than baseline, except for zinc. By including supplement intake of the micronutrients, there were still some patients with an inadequate intake of iron, copper and vitamin C one year

post-RYGB, compared to the age- and gender-specific EAR. Hemoglobin, ferritin, vitamin B_{12} and C-reactive protein (CRP) serum concentrations were significantly decreased and transferrin saturation was significantly increased 12 months post-RYGB. Serum hepcidin concentration was significantly decreased 6 months post-RYGB. A significant correlation between the total intake of vitamin B_{12} and vitamin B_{12} plasma concentration was observed. **Conclusions:** The dietary intake of iron, vitamin B_{12}, vitamin C, copper and zinc is markedly decreased after RYGB, suggesting that medical nutritional therapy is essential following bariatric surgery. The iron status was improved after RYGB by an increase in transferrin saturation and a decrease in serum hepcidin concentration.

A5223

SEVERE FATTY LIVER IN A MALNOURISHED PREVIOUSLY MORBIDLY OBESE PATIENT STATUS POST GASTRIC BYPASS: A PROPOSED MECHANISM

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Background: In 1980 Ludwig et. al. was first to coin the term non-alcoholic steatohepatitis (NASH) to describe a syndrome in morbidly obese females with type 2 diabetes mellitus (DM) and no history of alcohol use, in whom the hepatic histology was consistent with alcoholic hepatitis. There are, however, other secondary causes of non-alcoholic fatty liver (NAFL), which can develop into non-alcoholic steatohepatitis (NASH), recognized in the years since, such as dramatic rapid weight loss and malnutrition. A number of cases have described either deterioration of NASH or development of NAFL within 2 years after gastric bypass surgery (GBS). However, there are no case reports describing NAFL as a long term complication of GBS, which is related to malnutrition and protein deficiencies. We report a case of a post GBS patient with malnutrition who developed NAFL, which resolved after nutritional support.
Methods: DK is a 50 year old female with a history of asthma, DM type II, obesity, and status post GBS 8 years ago. The patient lost weight after GBS appropriately and without any complications. For last 3 years, her enteral intake had been significantly decreased due to development of intra-abdominal hernia and recurrent intermittent small bowel obstruction (SBO). Her multiple admissions for SBO resulted in progressive and chronic weight loss and poor nutritional status. She claimed to be eating only cheese and crackers at home and immediately before her current admission she was tolerating only water. She was admitted to the hospital for gastrostomy tube placement in gastric remnant at gastric bypass and enteral nutrition support.
Results: During the laparoscopic insertion of gastrostomy tube, her liver was noted to be yellow in color and enlarged, well below the costal margins bilaterally. Previously, her liver was grossly normal. This change in appearance and size of the liver led to a biopsy, which showed almost complete replacement of hepatocytes by adipocytes (Figure-1). A CT of the abdomen showed diffuse decreased attenuation of the liver, consistent with hepatic steatosis (Figure -2a). Her hepatic profile revealed transaminitis, elevated alkaline phosphatase and total and direct bilirubin. She denied any history of alcohol abuse, vital hepatitis or autoimmune hepatitis. She had a normal liver function test 2 years ago. Interestingly, her HDL cholesterol was undetectable, serum Apolipoprotein B was low normal and serum Apolipoprtein A1 was well below normal. Consequently, parenteral nutrition (PN) had to be started for tube feeding intolerance. After 14 days of PN providing an average of 1500 Kcal and 90 grams protein, her nutrition status had significantly improved. Repeated abdominal CT scan showed normalized hepatic contour and attenuation (Figure-2 b). Lipid and hepatic profiles had normalized.
Discussion: This case is the first to report of a patient developing a profuse fatty liver changes due to severe malnutrition and protein deficiency as a long term complication of post

GBS surgery. This case may have a different pathophysiology from previously reported cases. Previously reported cases had hepatic complications within 2 years after bariatric surgery. Their pathophysiologies of developing hepatic decompensations are related with rapid weight loss, bacterial overgrowth, and/or carnitine deficiency. In our case, the severe chronic malnutrition and protein deficiency were predisposed to synthesis of Apolipoproteins. Especially, decreased Apoprotein B100, which is a primary Apolipoprotein of VLDL, can reduce mobilization of triglyceride from hepatocytes. Furthermore, decreased level of Apoprotein A1, which is known as an inhibitor of lipoprotein lipase, may lead to accelerating lipoprotein lipase mediated lipolysis (Figure-3). As a result, the influx of serum free fatty acid to hepatocytes can increase. Therefore, decreased mobilization and increased uptake of lipid in hepatocytes could induce NAFL changes in our case. It is also meaningful to note that the hepatic decompensation and abnormal synthesis of Apolipoprotein can be quickly reversed by proper nutrition support within 14 days.

A5224

IRON DEFICIENCY THREE MONTHS AFTER BARIATRIC SURGERY: – A PARADIGM SHIFT?

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Objective: Morbid obesity is a multifactorial disease with a pandemic-like increase within the last decades worldwide. So far, surgical intervention is the only known sufficient treatment for long-term excess weight loss. Two bariatric surgical procedures have been established and are widely accepted for treating morbid obesity, namely sleeve-gastrectomy (SG) and roux-y-gastric bypass (RYGB). After surgery, it is recommended to start treating patients with iron supplements 6 months after surgery. This study investigates the sufficiency of iron treatment in patients within the first 3 months after bariatric surgery.
Methods: Patient data was acquired between 2011-2014. Ferritin serum levels were assessed prior and 3 months after bariatric surgery. We advised patients to substitute iron right after surgery. Patient data was statistically evaluated by repeated measures ANOVA.
Results: In total, 204 patients were included. Of these patients, 110 patients underwent RYGB, and 94 patients SG. In RYGB group, male to female ratio was 90:20, in SG group male to female ratio was 59:35. Preoperative Ferritin levels did not differ significantly between the groups. However, ferritin serum levels were increased in SG after surgery, whilst ferritin serum levels in RYGB group were decreased ($p = 0.004$): numbers of patients with iron deficiency increased by 11.8 % in RYGB group; whilst in SG group iron deficiency decreased by 2.13 % after surgery. In fact, in RYGB group 16 people were diagnosed with iron deficiency although substitution had been started right after surgery.
Discussion: Our results underline the necessity of iron substitution and dosage adjustment after bariatric surgery. The Endocrine Society suggests starting iron substitution 6 months after surgery. However, our data points towards the necessity of iron substitution directly after bariatric surgery.

TOPIC: Revisional Procedures

A5225

CONVERSION FROM GASTRIC BYPASS TO SLEEVE GASTRECTOMY FOR COMPLICATIONS OF GASTRIC BYPASS

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Background: Complications following gastric bypass (RYGB) are well documented in the literature. Reversal of gastric bypass is unusual, but in select cases, reversal is the treatment of choice. Patients who undergo reversal often regain significant weight. Conversion from gastric bypass to sleeve gastrectomy (VSG) has been proposed as a method of correcting certain complications of gastric bypass without leading to significant weight gain. However, little is known about outcomes following this procedure.
Methods: A retrospective study of all patients who underwent RYGB to VSG conversion at a single institution was undertaken. Data were collected regarding preoperative characteristics and postoperative outcomes including complications, readmissions, need for supplemental nutrition, and long term weight.
Results: 12 patients underwent RYGB to VSG conversion for the following indications: refractory gastrojejunal anastomotic ulcer or stricture, refractory dumping, gastrogastric fistula, hyperinsulinemic hypoglycemia, and failure of weight loss. 10 of 12 surgeries were completed laparoscopically. There were no perioperative deaths. 4 patients experienced 7 major complications, including seroma, portal vein thrombosis, bleeding, pancreatic leak, pulmonary embolus, anastomotic leak, and anastomotic stricture. 2 required reoperation. 6 required readmission within 30 days. 4 patients underwent jejunostomy placement during surgery, and of the 8 who did not, 4 required supplemental nasoenteric feeding postoperatively due to nausea and poor oral intake. The condition for which the operation was undertaken resolved in 11/12 patients. At 12.8 months follow up, the average change in BMI was a decrease of 2.2.
Conclusions: Laparoscopic conversion RYGB to VSG is a feasible treatment for complications of gastric bypass. It does not result in short term weight gain. Similar to other revisional bariatric surgery procedures, there is a significant risk of complication, readmission, and need for supplemental nutrition.

A5226

CONVERSION OF LAPAROSCOPIC SLEEVE GASTRECTOMY TO ROUX-EN-Y GASTRIC BYPASS, INITIAL EXPERIENCE AT A PUBLIC OBESITY CLINIC IN MEXICO CITY

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Background: Sleeve gastrectomy has gained popularity as a primary bariatric surgical procedure because of its adequate weight loss results and technical feasibility. Nevertheless, conversion from Sleeve gastrectomy (SG) to Roux-en-Y gastric bypass (RYGB) has been described in 10-25% patients due to inadecuate weight loss, presence of weight regain, persistent comorbidities or postoperative complications.
Objective: To assess the perioperative complication rate, weight loss and metabolic success of laparoscopic conversion to RYGB after SG failure.
Methods: A retrospective descriptive analysis of our prospectively colected database of all patients who underwent laparoscopic conversion from SG to RYGB from January 2008 to January 2014 at The Obesity Clinic (CLIO) from a public hospital in Mexico City.
Results: From 272 SG performed at our Clinic, 17 patients (6.25%) were converted from SG to RYGB. Nine other conversions from SG to RYGB were performed as well at CLIO, nevertheless, were excluded from the study as their primary SG was performed at other clinic. Main indications for conversion were: 11

(64.7%) patients with inadecuate weight loss, 1 (5.9%) patient with weight regain, 3 (17.6%) patients had GERD refractary to PPIs, 1 (5.9%) stricture at incisura angularis and 1(5.9%) chronic fistula. Mean weight and BMI before SG were 145±26.41 (92-197) kg and 55.25±9.05 (37.5-70.85) kg/m^2, respectively. At conversion, mean pre-RYGB weight, BMI and %EWL were: 122.89 ± 23.43 (75-154) kg, 44.08 ± 7.76 (29.30-59.92) kg/m^2 and 37.80 ± 20.10 (4.90-65.62)%, respectively. The interval for conversion from SG to RYGB was 23.10 ± 8.98 (9-36) months. Mean follow up after RYGB was 12 months. Mean post-RYGB weight, BMI, and %EWL were: 103.54 ± 22.87(59.60 -141.30) kg, 36.61± 7.26 (23.28-47.07)kg/m^2 and 42.13 ± 33.12 (15.75-140)% respectively. Before SG, 4 patients (23.5%) had comorbidities related to obesity: 1 patient had 5 comorbidities (T2DM, hypertension, hypercholesterolemia, hypertriglyceridemia, GERD), 2 patients had 2 comorbidities (T2DM/hypertension and hypercholesterolemia/hypertriglyceridemia) and 1 patient had 1 comorbidity (hypertension). After SG, one patient with no previous comorbidities debuted with refractary GERD. From the patients with comorbidities associated, the patient with 5 comorbidities didn't show resolution nor improvement in comorbidities, nevertheless, presented refractory GERD; 1 patient had 2 resolved comorbidities (hypercholesterolemia, hypertriglyceridemia) with a new-onset of refractory GERD; 1 patient had 1 resolved comorbidity (T2DM) and 1 improvement (hypertension) and the last patient showed improvement of his hypertension. After undergoing conversion, all patients either presented resolution or improvement in their comorbidities: 5 patients (29.4%) had a total of 6 resolved comorbidities (T2DM, hypertension, GERD) and 3 improved comorbidities (hypertension, hypercholesterolemia, hypertriglyceridemia), as follows: 1 patient had 1 resolved comorbidity (hypertension), 2 patients had 1 resolved comorbidity each (GERD), 1 patient had 1 improved comorbidity (hypertension) and 1 patient had 3 resolved comorbidities (T2DM, hypertension, GERD) with 2 improved comorbidities (hypercholesterolemia, hypertriglyceridemia). Postoperative complications after SG and after conversion from SG to RYGB conversion: Complications were grouped according Clavien´s classification, after SG, grade III b complications occurred in 6 (35.2%) patients: 3 (17.6%) severe GERD, 1 (5.8%) fistula, 1 (5.8%) stenosis, 1 (5.8%) cholecystitis) and grade I complication occurred in 1 (5.8%) patient (atelectasis). After RYGBP, grade III b complications occurred in 3 (17.6) patients : 2 (11.7%) Petersen's hernia, 1 (5.8%) pelvic abscess; grade II complications occurred in 5 (29.4%) patients: 2 (11.7%) fistulas, 1 (5.8%) bronchoaspiration, 1 (5.8%)gastrointestinal bleeding, 1 (5.8%) pneumonia; and grade I complication occurred in 2 patients: 1(5.8%) steatorrhea, 1 (5.8%) vomiting.

Conclusions: Conversion from SG to RYGB is an effective treatment after failed SG since there was a greater percentage of excess weight loss, increased rate of resolved/improved comorbidities associated to obesity and persistent after SG. As well, a lower perioperative complication rate after conversion from SG to RYGB was observed when compared with primary SG. A higher sample is needed in order to confirm our results.

A5227

THE EFFECTS OF THE ADJUSTABLE GASTRIC BAND ON ESOPHAGEAL MOTILITY IN PATIENTS WHO PRESENT FOR BAND REMOVAL

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Introduction: The aim of this study was to determine the effects of the adjustable gastric band (AGB) on esophageal motility in patients who present for removal of the AGB.

Methods: A retrospective review of the 23 consecutive patient charts at Mount Sinai Hospital, New York, NY. High resolution esophageal manometry with impedance testing was performed after AGB removal in majority of patients while the rest had manometry with

the AGB still In place. The age, sex, BMI, comorbidities, symptoms of dysphagia and food intolerance and manometry results were analyzed.
Results: 15/23 were female, the average age was 46 years and the average initial BMI was 42.1. 17 patients had GERD, 3 patients had dysphagia and 7 patients had significant food intolerance and 6 presented with inadequate weight loss. While 14 of the patients underwent manometry after removal of the band, 9 underwent manometry with the AGB present. 10 / 23 patients (43%) had significant dysmotility - ineffective peristalsis > 40% swallows. The AGB was removed in 17/23 for insufficient weight loss, significant gastroesophageal reflux, dysphagia or food intolerance. A revisional procedure was performed in 11 patients out of 17 (sleeve - 4, gastric bypass - 7). 6 of the 17 patients are waiting for the esophageal dysmotility to improve or resolve prior to revisional surgery.
Conclusion: There is significant prevalence of esophageal dysmotility in patients who present for removal of AGB.

A5228
SLEEVE RESECTION OF THE GASTRO-JEJUNOSTOMY AND POUCH: OUTCOMES AFTER REVISION OF ROUX-EN-Y GASTRIC BYPASS
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Introduction: Significant weight regain or inadequate initial weight loss occurs in approximately twenty percent of patients after gastric bypass (GBP). This represents a difficult group of patients to treat and no standard surgical approach has been widely accepted. Options include pouch and/or stoma revision, limb length modification, and banding of the gastric pouch. We present our experience with "sleeving" the bypass.
Methods: A single institution, prospective, clinical database was retrospectively queried for patients who underwent "sleeve resection of the gastro-jejunostomy and pouch" (SRGJP) as revision of GBP for inadequate weight loss or weight regain. Our technique involves resection of the "candy cane" jejunal limb and the lateral portions of the gastro-jejunostomy, and pouch over a small (30-34 Fr) intraluminal bougie. The staple line is then imbricated with a permanent suture. Patients are managed per our standard post op bariatric protocol. We evaluated weight loss, complications and readmissions.
Results: Between 2011 and 2014 sixty-six patients, 94% female, average age 45±9.84 underwent SRGJP from 3-16 years after their initial GBP. Average BMI at initial bariatric surgery was 54.6±8.33 kg/m^2. Average BMI and weight at time of revision was 44.3±7.79 kg/m^2 and 263.4±52.69 lb. respectively. Average weight loss and percent excess BMI loss were 28.8 lb and 36.4% (p=0.008) at 6 months and 30.1 lb and 34.3% (p=0.006) at 12 months respectively. There was no statistical difference in weight loss or percent excess BMI loss at 6 vs. 12 months (p=0.91). There were 5 readmissions (7.6%), 1 leak (1.5%), and 4 patients required blood transfusion (6.1%).
Conclusion: SRGJP is a viable option for revision of gastric bypass. Weight loss is comparable to banding the gastric pouch. Complications are slightly higher than after primary GBP but are within acceptable limits.

A5229
WEIGHT LOSS AFTER CONVERSION FROM LAPAROSCOPIC BAND TO LOOP DUODENAL SWITCH
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Objective: The Laparoscopic Lap Band is designed to be an adjustable laparoscopically placed gastric restriction device for treatment of severe obesity. While majority of patients achieves good outcomes with Lap Band, there is subset of patients who experiences complications or fail to lose sufficient weight after banding procedure. The purpose of this study was to access the outcomes of patients who had failed Lap band and were converted to

Loop Duodenal Switch, in terms of their weight loss.
Method: We evaluated all from June 2013 to March 2015, with failed Lap band who were laparoscopically converted to Loop Duodenal Switch. Indication for conversion included- 1) Failed weight loss, 2) Failed weight loss with band slippage, 3) Lap Band causing esophageal obstruction and dysphagia, 4) Failed lap band with inability to tolerate adjustments, 5) Lap band causing severe abdominal pain. All the surgeries were done by one surgeon at one institution. We followed their intraoperative and postoperative complications and length of stay. Change in BMI between pre-op and post op follow up was evaluated.
Result: Among 15 patients (mean age-46.53±10.27 years) who underwent revision surgery, the mean BMI before the Loop Duodenal Switch was 46.15 kg/m² (range=29.33-82.73, SD-12.87) and the mean weight was 286.75 pounds (range=181.70-661.900, SD-116.69), mean revision operative time was 93.71 mins (range=65-125 mins), mean hospital stay was 3.67 days (range=1-15). The morbidity of the re-operation was 40 %: 3 abdominal Hematoma and 3 wound infections. No long term complications and no deaths were recorded. Mean excess weight loss was 30.76% with mean excess BMI lost of 38.55% at 3 months, 43.69%% with 55.128% at 6months, 72.79%% with 91.66% at 12 months and 98.65% with 124.13% at 18 months respectively.
Conclusion: Laparoscopically revision from Lap Band to Loop Duodenal Switch is safe and is a more effective alternative to gastric bypass who have failed Lap Band procedure. Revision to Loop Duodenal Switch in this subset of patients is technically challenging but if performed in the hands of experienced surgeon, can result in superior weight loss and better quality of life in shorter time period than other treatment options.

A5230
LAPAROSCOPIC SUBTOTAL GASTRECTOMY & ROUX-EN-Y ESOPHAGOJEJUNOSTOMY FOR CHRONIC LEAK FOLLOWING SLEEVE GASTRECTOMY

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Introduction: Laparoscopic sleeve gastrectomy (LSG) is increasingly performed as a primary operation for morbid obesity. A leak, with an incidence of up to 5.1%, is one of the most serious life-threatening complications associated with LSG.
Methods: We present a case of a 20 year old female who underwent LSG 4 months prior at an outside institution. She developed a gastric leak at the gastroesophageal junction, requiring endoscopic stenting. She had been NPO and on TPN in the last 3 months with an adequately functioning drain. UGI and CT scan of abdomen revealed a leak in the proximal stomach and gastroesophageal junction. An esophagojejunostomy was created using a side-to-side linear stapler technique. A side-to-side jejunojejunostomy between biliopancreatic and alimentary limbs were performed.
Results: On post operative day 3, she developed a new onset of sinus tachycardia. A decision was made to proceed with exploratory laparotomy. No leaks or purulent material were detected. The tachycardia resolved, and she was discharged on post-operative day 12 on a Phase II diet.
Conclusion: Roux-en-Y esophagojejunostomy at the leak site should be considered in chronic leaks after LSG when non-operative measures and endoscopic stents are rendered ineffective.

A5231
INADEQUATE WEIGHT LOSS AFTER ROUX-EN-Y GASTRIC BYPASS: A 3 ARMS COMPARATIVE STUDY

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Background: Weight recidivism after Roux-en-Y gastric bypass (RYGB) is a challenging problem for patients as well as bariatric surgeons. Traditional operative strategies to combat weight regain are technically complicated and associated with a high morbidity rate. The aim of this study is to compare 2 different bariatric reoperations (distal gastric bypass vs. banded RYGB pouch) with a third group of patients treated by medically supervised weight loss.
Methods: This retrospective study was conducted in an academic tertiary referral center. RYGB patients with inadequate weight loss that underwent a second operation were identified. Data collected included patient demographics, perioperative outcomes, and weight loss metrics. In the medically supervised weight regain patients, type of medications and complications were also reported. Inadequate weight loss was defined as excess weight loss (EWL) < 50%. Parameters were analyzed using paired and unpaired student's t-test (or Mann-Whitney test) for continuous variables and Chi-square test (or Fisher's exact test) for categorical variables. All tests were two tailed and results with a $p<0.05$ were considered statistically significant.
Results: Both surgical groups, banded RYGB pouch (n=27) and distal RYGB group (n=20), had similar demographic characteristics (age, gender, type of RYGB, and comorbidities) at time of reoperation. Mean age, interval between first RYGB and reoperation, and body mass index (BMI) reported in the banded RYGB and distal RYGB group were: 47.6 ± 10.6 vs. 52.9 ± 10.3 years (p=0.05), 8.9 ± 4.4 vs.10.5 ± 3.2 years, and 45.6 ± 8.0 vs. 52.2 ± 14.9 kg/m^2 (p=0.08), respectively. Postoperative outcomes were not significantly different between banded RYGB and distal RYGB patients; mean early complications (first 30 days) observed were 18% (n=5) vs. 15% (n=3), p=0.7, whereas late complications (> 90 days) were 21% (n=6) vs. 25% (n=5), p=0.5, respectively. Length of stay (p=0.9), intraoperative complications (p=0.4), and conversion rate (p=0.1), were also comparable between groups. At last follow up time, mean percent excess weight loss (%EWL) and percent weight loss (%WL) were higher in the distal RYGB group in comparison to the banded RYGB; 22.5% vs. 13.0% (p=0.07), 10.2% vs. 6.7% (p>0.05). The medically treated group included 17 patients. Medications included phentermine (n=13), topiramate (n=3), and Naltrexone/bupropion (n=1), mean number of medications was 1.1 ± 0.4 per patient. Three patients reported side effects (constipation, numbness, blurred vision) during the follow-up period. Weight loss was significantly lower in the medical group in comparison to both surgical groups; mean %EWL and %WL at 12 months was 5.7% and 1.4%, respectively ($p<0.01$).
Conclusions: Our results show no significant differences in and weight loss outcomes between banded RYGB and distal RYGB for the treatment of weight recidivism, although the distal RYGB patients achieved greater weight loss. As expected, both surgical procedures showed better weight loss outcomes when compared to the medically treated group.

A5232

REVISIONAL BARIATRIC SURGERY IN AFRICAN AMERICANS: SHORT TERM OUTCOMES

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Abstract Background: African Americans have the highest incidence of obesity compared to other groups, and some have benefitted greatly from weight loss operations. Unfortunately there has also been an increase in the need for revisional surgeries due to unsatisfactory weight loss or weight regain. We report the short term outcomes of revisional bariatric surgeries in African Americans at a tertiary academic medical center. **Methods:** We conducted a retrospective study of eligible subjects identified

at Howard University Hospital. Patients included were those meeting NIH criteria who underwent revisional bariatric surgery over a 5 year period from August 2008 to July 2013. based on condition post the original bariatric procedure (gastric reflux disease, increased weight, increased bmi, etc.), underwent revision bariatric surgeries between 2008 and 2013. Data on the patients' demographics, BMI, and comorbid conditions were recorded prior to the surgery, and at 1, 6, and 12 months post-surgery.
Results: 364 patients underwent bariatric surgeries during the time frame of the study. 77 (21%) of the 364 were revisional bariatric surgeries. The original surgery was Roux En Y gastric bypass in 75 patients and sleeve gastrectomy in 2 patients. The mean revisional pre-op BMI was 42.1. The mean BMI at the 12 month period was 34.3. Average percent excess weight loss (ewl) was 31.5% at 12 months post-surgery. 6 patients (8%) developed post-operative complications. 2 patients (3%) showed post-operative bleeding but only one required a transfusion. 2 patients (3%) developed a small bowel obstruction requiring reparative surgery. 1 patient (1%) developed an incisional hernia through the revisional surgery incision, needing reparative surgery, and 1 patient (1%) acquired sepsis after having a staple line leak that was repaired. There were no mortalities.
Conclusion: Revisional bariatric surgery is a feasible and safe solution for African Americans who have experienced weight regain or unsatisfactory weight loss after the original bariatric procedure.

A5233

ENDOLUMINAL REVISION OF GASTROJEJUNAL ANASTOMOSIS FOR RECIDIVISM: IS IT AN EFFECTIVE ALTERNATIVE?

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Background: Recidivism occurs in approximately 25% of patients who underwent roux-en-Y gastric bypass (RYGB) for morbid obesity. One cause of weight gain is thought to be attributed to a dilated gastrojejunal anastomosis. Surgical revision procedures for recidivism are associated with an increase in peri-operative morbidity and mortality in addition to lacking the guarantee of weight loss. Given its less invasive nature, endoscopic techniques have been employed to reduce the aperture of the gastrojejunal anastomosis thus reinstating the satiety factor associated with the RYGB.
Methods: A single institution review of 28 consecutive patients who underwent endoscopic revision of gastrojejunal anastomosis was performed. Patients who presented with weight gain and dilated gastrojejunal anastomosis after RYGB were included. All GE Anastomosis were scored with electrocaudery and revised using the endoluminal suturing device. The diameters of the anastomeses were reduced to less than 3mm in all cases. Patients were followed at 2 weeks, 1 month, 3 months, 6 months, 1 year, and 2 years.
Results: The average pre-endoscopic revision body mass index (BMI) was 38.63. The average post-endoscopic revision BMI was 34.83 and 36.98 at 6 and 12 months, respectively. The average post-endoscopic revision percentage-excess weight loss was 16.0 and 7.8 at 6 and 12 months, respectively.
Conclusion: Although low-risk and minimally invasive, the endoscopic revision of gastric bypass recidivism does not appear to offer long term weight loss benefits. Beyond 6 months post-endoscopic revision, overall weight gain occurred in the patients considered in this study. Worth noting is the lack of long term follow-up and the bias towards weight gain that was created by this event. Standardization of endoscopic techniques and further investigation of long term weight loss is necessary to elucidate the utility of this procedure in being an acceptable alternative to surgical intervention in the setting of RYGB recidivism.

A5234

ALWAYS ONE STAGE CONVERSION OF ROUX-EN-Y GASTRIC BYPASS TO BILIOPANCREATIC DIVERSION WITH DUODENAL SWITCH

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Since 2010 we have performed 11 conversions of Roux-en-Y gastric bypass (RYGB) to biliopancreatic diversion with duodenal switch (BPD-DS) for insufficient weight loss, weight regain and persistent comorbidities. RYGB had been performed a mean 78.2 months before conversion (range 53-120) for an initial body mass index (BMI) of 55.7 ± 14.2 kg/m^2. 6 patients had had an adjustable gastric banding before their RYGB. The lowest BMI after RYGB was 38.2 ± 10.3 with a percentage of excess weight loss (%EWL) of 63.0 ± 21.7%. At revision, the BMI was 44.3 ± 6.8 and the mean %EWL 34.9 (range 0 to 53.9%) with 9 patients having a %EWL<50%. 6 patients had persistence of recurrence of at least 1 comorbidity (sleep apnea, type 2 diabetes or hypertension). 1 patient still with a %EWL>50% did not have any comorbidity but was regaining weight with a 10 point increase in BMI. All the patients showed a small gastric pouch (<50 cc) on the control barium swallow. Among other options, conversion of RYGB to a malabsorptive procedure can be seen as the most powerful solution to restore weight loss. However, the available literature is limited and reports in about 50% of the conversions the need to abort the procedure after dismantling the RYGB and restoring the gastric continuity because of the length and complexity of the conversion to a BPD-DS. We therefore designed a technique allowing single stage conversion of RYGB to BPD-DS. This procedure is based on the use of a "hybrid" sleeve instead of restoring the full gastric anatomy. The gastrojejunal anastomosis (GJ) is not altered and the alimentary limb is divided 5 to 6 cm below the GJ. The remnant stomach which was excluded at the time of the RYGB is freed from its attachments and divided at the level of the incisura, resecting the fundus and body of the stomach and leaving only the antrum. A hand sewn jejunogastric anastomosis is performed. The rest of the procedure is a standard BPD-DS with division of the ileum 250 cm from the ileocaecal valve, an ileoileal anastomosis at 100 cm from the ileaocaecal valve and a termino-lateral duodenoileal anastomosis. In this procedure the alimentary limb of the former RYGB was left untouched in the last 7 patients. All the procedures could be completed in 1 stage in a mean 184 minutes (range 150-240') and laparoscopically except in 2. The first surgery was done deliberately open because of a ventral hernia and 1 was converted to open due to the inability to clearly locate the alimentary limb after an open, retro-colic, retro-gastric RYGB. 2 patients developed a complication: 1 intra-abdominal abscess of unknown origin requiring reoperation and prolonged (77 days) hospitalization and 1 unexplained fever. None of these were fatal. Patients were discharged a mean 12.3 days after surgery. As for other BPD-DS, follow-up visits occur every 3 months the first year, 6 months the second year and yearly thereafter. The mean follow-up is 22.5 months with no lost to follow-up. 5 patients have a follow-up >24 months, 2 patients ≥18 months and 2 patients ≥12 months. The BMI of the 10 patients with an available follow-up is 33.2 ± 7.2 with a mean %EWL of 75.5% (range 44.9-109.4%). All the patients benefited from an increase in %EWL compared to the pre-revision weight loss and 7 of 9 patients with a follow-up > 3 months have a superior %EWL compared to the nadir of weight loss after their RYGB. 1 patients was readmitted for a marginal ulcer (on the gastrojejunal anastomosis) in a context of anti-inflammatory treatment on the long term. In conclusion, except in case of a retro-gastric, retro-colic RYGB where the alimentary limb may be difficult to identify, this procedure involving the creation of a "hybrid" sleeve allows an always 1 stage conversion of RYGB to BPD-DS. Operative time as well as the complication rate appear acceptable. Weight loss is on par with the published data after BPD-DS and is capable of resuming weight loss after a failed RYGB.

A5235

ONE PRACTICE'S ADJUSTABLE GASTRIC BAND CONVERSION ALGORITHM

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Introduction: As the adjustable gastric banding experience in the United States is approaching fifteen years, an increasing number of patients will need their adjustable gastric bands

removed. This paper seeks to further elucidate the most appropriate operation to offer these patients.
Methods: We conducted a retrospective chart review of patients seen in our practice over the past year. We reviewed the reason for revision and how we determined which operation would be most appropriate for the patient.
Results: Two patients had their bands removed without further revision. One of these patients had a band placed in 2001 that had previously been revised for a slip. At her initial office visit she was diagnosed with a slip that did not improve with band deflation and her band was removed the following day with symptom resolution. The second patient simply requested that her band be removed. Six patients had their bands converted to Roux-en-Y gastric bypass (RYGB) for esophageal dilatation, reflux and either poor weight loss or weight regain. Two patients had their bands converted to gastric sleeve (VSG) for poor weight loss, poor restriction with the band and no reflux symptoms.
Conclusion: Patients with adjustable gastric banding failure have several options available. Most patients in our practice that have an adjustable gastric band were uncomfortable with the concept of Roux-en-Y gastric bypass and preferred a sleeve gastrectomy as an alternative to the band. In an attempt to avoid recurrent symptoms, our conversion algorithm is based on the principle that patients with esophageal dysmotility, based on clinical and/or radiographic grounds, would best be converted to an operation with less esophageal stress such as a Roux-en-Y gastric bypass. To date, both RYGB and VSG patients are losing weight with resolution of their pre-conversion symptoms with a high degree of patient satisfaction.

TOPIC: Scientific Research

A5236
SUCCESSFUL OUTCOMES AFTER BARIATRIC SURGERY IN BLACK PATIENTS
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Introduction: The incidence of obesity has reached epidemic proportions affecting one-third of US adults. African Americans (AA) are 1.5 times more likely to be obese and specifically in this group, women are 80% more likely to be obese than their White counterparts. Comparing co-morbidities, AA are 1.8 times more likely to have diabetes mellitus (DM) and 40% more likely to develop hypertension (HTN). Bariatric surgery has produced significant improvements in cardiovascular risk factors and diabetes among morbidly obese White patients; however few studies have evaluated similar outcomes in AA patients. Our study aims to evaluate weight loss and resolution of co-morbidities outcomes of bariatric surgery at an urban academic institution serving predominantly African American patients.
Methods: A retrospective review was conducted utilizing data from an urban academic institution on patients who underwent bariatric surgery from August 2008 to June 2013. Patient level data included demographic, pre-operative co-morbidities and risk factors, procedures, and post-operative outcomes up to 12 months. Patients were categorized by procedure: laparoscopic roux en y gastric bypass (LRYGB), laparoscopic sleeve gastrectomy (LSG), and laparoscopic adjustable gastric banding (LAGB). The primary outcome was mean post-operative body mass index (BMI). Secondary outcome was resolution of co-morbidities. Descriptive

and summary statistics were performed for post-operative outcomes by procedure.
Results: 284 patients underwent bariatric surgery of which 256 patients (90%) identified themselves as AA and 242 patients (85%) were female with a mean age of 44 years. Most patients had HTN (69%) and diabetes (36%). Of these 74%, 16%, and 10% had a LRYGB, LSG, and LAGB, respectively. Overall mean pre-operative BMI was 48.0 kg/m2. The mean pre-operative BMI for each procedure was 48.7 kg/m2 (LRYGB), 48.6 kg/m2 (LSG), and 42.2 kg/m2 (LAGB). For LRYGB the BMI at 1, 6, and 12 months was 44, 37, and 34 kg/m2. Resolution of HTN and DM for LRYGB patients were 50% and 80%. For LSG the BMI at 1, 6, and 12 months was 44, 41, and 41 kg/m2. Resolution of HTN and DM for LSG patients were 57% and 75%. LAGB the BMI at 1, 6, and 12 months was 39, 39, and 35 kg/m2 s. Resolution of HTN and DM in LAGB patients was 52% and 71%.
Conclusions: Black patients receiving bariatric surgery have successful outcomes regarding weight loss and resolution of co-morbidities at one year. In a population with higher rates of obesity and obesity related co-morbidities, bariatric surgery can serve as a viable option for treatment.

A5238

EFFECT OF WEIGHT LOSS POST-BARIATRIC SURGERY ON KIDNEY FUNCTION IN A MULTI-ETHNIC ASIAN POPULATION

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Introduction: Current literature, mainly from non-Asian centres, reports improvement in kidney function in obese patients after bariatric surgery. It is unclear in the obese Asian patient how glomerular hyperfiltration is affected by post-surgery body composition changes. We studied the clinical nutrition assessments of body fat mass (BFM), fat-free mass (FFM) and body surface area (BSA) on kidney function changes in an Asian population after bariatric surgery.
Methods: Data of 68 obese patients who were followed-up for 1 year post-surgery were retrieved from a retrospectively collected clinical care database. Body composition was obtained by bioimpedance analysis. Usual estimations of kidney function were calculated as follows: normalised glomerular filtration rate (eGFR, mL/min/1.73m²) was estimated using the Chronic Kidney Disease Epidemiology Collaboration (CKD-EPI) equation, and estimated absolute glomerular filtration rate (aGFR, mL/min) by applying Du Bois and Du Bois equation for BSA. Creatinine clearance (mL/min) was calculated by the Salazar-Corcoran equation.
Results: One year after surgery, body mass index (BMI) declined from 42.6±5.6 to 29.5±4.2 kg/m² (P<0.001), BSA decreased from 2.15±0.23 to 1.86±0.18 m² (P<0.001), and BFM was reduced from 45.1±9.7 to 25.6±10.5 kg (P<0.001). FFM also declined from 66.4±15.9 to 53.7±12.2 kg (P<0.001) but this decrease was not associated with serum creatinine decrease (65±27 vs. 64±25 µmol/L; P=0.984), nor eGFR changes (108±22 vs. 108±19 mL/min/1.73 m^2; P=0.414). However, estimated aGFR and creatinine clearance were reduced 135±31 vs. 116±25 mL/min (P<0.001) and 163±47 vs. 140±39 mL/min (P<0.001) respectively. Change in estimated aGFR at 1 year were associated with reduction in BFM (P=0.010) and BSA (P=0.049). Correlation with FFM did not reach statistical significance.
Conclusion: Reductions in BFM and BSA are associated with changes in estimated aGFR in obese Asian patients after bariatric surgery. FFM reduction is not associated with serum creatinine or eGFR changes.

A5240

A SINGLE CENTER COMPARISON OF LAPAROSCOPIC GASTRIC BYPASS, SLEEVE GASTRECTOMY, AND DUODENAL SWITCH IN THOSE ≥ 65 YEARS OLD

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1991[1]

Background: Thirteen percent of the United States population is comprised of senior citizens, and the prevalence of obesity in men and women ≥ 60 years old is 32% and 38%, respectively. As in the younger population, obesity is associated with numerous comorbidities and effective treatment with laparoscopic roux-en-y gastric bypass (RYGB), vertical sleeve gastrectomy (SG), and biliopancreatic diversion with duodenal switch (BPD/DS) results in improved health and quality of life. Although numerous studies have compared RYGB, SG, and BPD/DS, few have focused specifically on the senior population.
Methods: The charts of all patients ≥ 65 years old who underwent laparoscopic RYGB, SG, or BPD/DS between January 2008 and December 2014 through a single bariatric center were examined. Data extracted included patient demographics(age, gender, pre-op BMI, pre-op weight), hospital length of stay (LOS), and 30 day rates of leaks, bleeds, readmission, and mortality. Follow up data at 6 months was collected for comorbidity remission, including hypertension (HTN), hyperlipidemia, diabetes, anxiety, depression, asthma, obstructive sleep apnea (OSA), osteoarthritis (OA), joint pain, and gastroesophageal reflux disease (GERD). Quantitative data were compared using ANOVA and Tukey's post-hoc analysis to investigate significant differences. Quantitative data are shown as the mean±SD. Nominal data were compared using the chi-square or Fisher's Exact test where appropriate and are shown as percentages. Significance was assessed at $p<0.05$.
Results: Of the 315 patients who underwent weight-loss surgery, 137 had a RYGB, 161 had a SG, and 17 had a BPD/DS. Patient demographics were similar between all groups except for a statistically significant higher pre-op weight between the RYGB group (258.6±44.1) and the SG group (272.6±52.7; p=0.037). LOS was significantly lower in the RYGB group (1.72±1.7) compared to both the BPD/DS group (2.53±0.72; p=0.003) and the SG group (2.14±0.81; p=0.023). Thirty day rates of complications, readmissions, and mortality were similar in all groups. The RYGB group had a statistically significant greater 6 month EWL% compared to the SG group (54.4±21.9 and 44.8±32.9, respectively, p=0.039). There was no significant difference in 6 month EWL% between BPD/DS and RYGB (p=0.979) or between BPD/DS and SG (p=0.526). There were significant differences among BPD/DS, SG, and RYGB with regard to resolution of HTN (93.3%, 54.6%, and 25.5%, respectively, $p<0.001$), depression (50%, 36.9%, and 15.8%, respectively, $p<0.03$), OA (42.9%, 21.3%, and 4.3%, respectively, $p<0.04$), and GERD (76.9%, 73.2%, and 46.3%, respectively, p=0.01). There were no statistically significant differences among the groups in regards to remission of hyperlipidemia, diabetes, anxiety, asthma, OSA, or joint pain.
Conclusions: Laparoscopic RYGB, SG, and BPD/DS appear to be safe and effective in patients≥ 65 years old, although BPD/DS and SG result in longer LOS. Despite RYGB resulting in greater EWL%, BPD/DS and SG had higher 6 month remission of hypertension, depression, OA, and GERD.

A5241
OUTCOMES AFTER BARIATRIC SURGERY IN BLACK MALE PATIENTS

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Introduction: More than one-third (34.9%) of American adult males are obese, with significant incidence in Black males, where 37.1% are obese. In addition, Black males are 1.8 times more likely than their White counterparts to have diabetes, and 40% more likely to develop hypertension. With obesity rates continuing to grow, bariatric surgery has become one of the most common operative procedures performed

in the US, and the most effective treatment for long-term weight loss, contributing to improvements of obesity-related diseases. Regrettably, few studies focus on outcomes of Black male bariatric surgery patients. Our objective was to evaluate the effectiveness of bariatric surgery on weight loss and resolution of co-morbidities among Black males at an urban academic institution.
Methods: A retrospective review of collected data was performed on Black male patients who underwent bariatric surgery from August 2008 to June 2013 at an urban academic institution. Patient level data collected included demographic, pre-operative co-morbidities and risk factors, procedures, and post-operative outcomes (body mass index [BMI], resolution of co-morbidities) up to 12 months. Patients were categorized into two groups by procedure: laparoscopic *roux en y* gastric bypass (LRYGB), and laparoscopic sleeve gastrectomy (LSG. The primary outcome was post-operative BMI. Secondary outcome was resolution of co-morbidities at 12 months. Descriptive and summary statistics were performed for post-operative outcomes by procedural category.
Results: Of those undergoing bariatric surgery, 38 patients met our inclusion criteria. The mean age at surgery was 45. The procedures performed were LRYGB, and LSG and included 31, and 7, patients respectively. The mean BMI was 47.6 kg/m² and 40% of patients had a BMI between 40-49.9. The most frequent co-morbid condition was hypertension (76%), followed by diabetes (42%), and hypercholesterolemia (33%). At 12 months post-operatively, patients lost 49.4% of excess weight loss and the overall post-operative BMI was 37.5. For LRYGB the mean post-operative BMI was 41, 36, 35 kg/m² at 1, 6, and 12 months, respectively. For LSG, the post-operative BMI was 45, 40, 45 kg/m² at 1, 6 and 12 months. Amongst patients who underwent LRYGB, resolution of co-morbidities at one year was 60%, 80%, and 74% for hypertension, dyslipidemia, and diabetes mellitus, respectively. In those who underwent LSG, the resolution of comorbidities was 17%, 16%, and 57% for hypertension, dyslipidemia, and diabetes mellitus, respectively.
Conclusions: Although Black males are less likely to undergo bariatric surgery, the outcomes have been successful regarding weight loss and resolution of co-morbidities at one year. By increasing the number of Black males who undergo bariatric surgery, the complications of obesity and its associated co-morbidities could be resolved. Greater efforts should be directed towards engaging all qualified obese patients, especially Black males that have high rates of obesity and related disease burden.

A5242
IMPLEMENTATION OF A PEER SPONSORSHIP MODEL TO IMPROVE WEIGHT LOSS AFTER BARIATRIC SURGERY
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Introduction: While the success of bariatric surgery stems from the well-understood surgical alteration of a patient's anatomy, its long-term efficacy depends on a number of lesser-studied social and behavioral factors. Online support blogs, in-person support groups, and expert follow-up have all been studied for their positive effects on post-surgical weight loss, yet the use of individual sponsors/coaches has not been explored. This longitudinal study aims to explore the effect of individualized peer coaching on post-surgical weight loss outcomes in obese patients undergoing bariatric surgery.
Methods: 10 Bariatric Coaches, individuals with previous bariatric surgery (≥12 months post-surgery) and excellent weight loss outcomes (12-month percent excess weight loss, %EWL≥75%), were identified and completed a nurse-led peer mentorship training course. 22 subjects undergoing laparoscopic bariatric surgery were enrolled in this study; 10 subjects were randomized to the experimental group and received a Bariatric Coach while 12 were randomized to the control group (no coach). Subjects in the experimental group participated in regular mentoring sessions with their assigned Bariatric Coach by telephone. Preoperatively and at all postoperative visits, all subjects

completed the Short Form (36) Health Survey (SF-36), Medical Outcomes Social Support Survey (MOS), and Social Capital Short Form Survey (SC). For both coaches and subjects, demographic and anthropometric data were collected preoperatively and weight-loss outcomes were tracked following bariatric surgery.
Results: Demographic data revealed our subjects had an average age of 45.2 years, were 77.3% female, 72.5% Caucasian race, 59.1% underwent Roux-en-Y gastric bypass (RYGB), and 40.9% underwent sleeve gastrectomy (SG). Bariatric coaches had an average age of 56.5 years and surgical distribution was 70.0% RYGB, 20.0% SG, and 10.0% gastric banding. Preoperatively, MOS survey showed cases to have greater overall social support (p=0.0249) while SC survey showed no difference in cases versus controls (p=0.8474). SF-36 survey revealed no preoperative difference in self-reported functional health or well-being between cases and controls in in any of the eight health domains surveyed (all p's >0.05). At 3 months postop, cases saw improvement in several quality of life domains assessed by SF-36, including a 16.7% improvement in emotional role functioning, 38.9% improvement in vitality, and 32.5% improvement in physical functioning. There was no difference in preoperative BMI between cases and controls (45.3 vs. 44.6 kg/m^2, p=0.9094). At 3 months postop, BMI had decreased from pre-op baseline by 18.1% for cases and 18.0% for controls, however there was not a statistically significant difference for 3-month BMI (p=0.4762) or %EWL (p=0.4476) between these groups. During this 3-month period, coaches saw a decrease in their weight, with an average weight loss of 2.62%. Several coaches reported increased mindfulness toward their own bariatric health and renewed focus on maintaining proper post-bariatric nutrition and lifestyle practices.
Conclusions: As bariatric providers continue to push toward increased quality and safety surround bariatric surgery, peer sponsorship may present a unique strategy to further improve outcomes. Herein we reported preliminary early outcomes implementing an individualized bariatric sponsor model and demonstrated significant weight loss for all patients as well as renewed focus on weight management leading to weight loss for post-operative Bariatric Coaches.

A5243

LOWER EXTREMITY JOINT AND BACK PAIN IS COMMON IN VETERANS UNDERGOING BARIATRIC SURGERY

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Introduction: Musculoskeletal disease is common in the obese and veteran populations. We examined the prevalence of lower extremity joint and back pain before and after bariatric surgery.
Methods: A prospective bariatric database was retrospectively reviewed. Bariatric patients were followed before and after surgery in a multidisciplinary clinic that included a physical therapist (PT). A standard 1 to 10 pain-scale was used to assess lower extremity joint and back pain. **Results:** A PT followed 74 patients who underwent bariatric surgery. Most were male (78%), their average preoperative body mass index (BMI) was 45.8 kg/m2 and mean age was 53 years. Of these, 70% had preoperative pain on the day of evaluation and 59% had a pain complaint greater than 5; while a pre-existing diagnosis of degenerative disc disease or osteoarthritis of lower extremity joints was present in 52.7%, and these patients underwent intensive follow-up by the PT before and after surgery. The average pain scale prior to bariatric surgery was 4.0. This decreased to 2.8 at 6 months after bariatric surgery (p=0.024), and further decreased to 2.4 at 12 months (p=0.074). At 12 months after bariatric surgery, the cohort of patients with a diagnosis of lower back or lower extremity joint disease receiving intensive physical therapy instruction had a significantly greater %EBMIL (62.8% vs. 49.7%, p=0.048) compared to the patients who did not have a pre-existing musculoskeletal diagnosis.

Conclusion: Lower back and lower extremity pain are common in veterans presenting for bariatric surgery. A majority of these patients have a prior diagnosis of degenerative joint or disc disease. Joint and lower back pain, and %EBMIL improve after bariatric surgery with physical therapist follow-up.

A5244

MEASURING OF INTRABDOMINAL SPACE IN LAPAROSCOPY SURGERY WITH SUPERFICIAL NEUROMUSCULAR BLOCKADE AND DEEP NEUROMUSCULAR BLOCKADE IN OBESE PATIENTS

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Background: The intrabdominal space is a need for the surgeon. The lack of neuromuscular relaxation reflects in a lack of space, conditioning technical difficulties and causing CO2 flow increase. Tissue hypoxy and hemodynamic changes can be high risk for the patient. The objective of the study was finding out if there are changes in the intrabdominal space with the use of the Deep neuromuscular blockade with a low CO2 preassure. **Material and Methods:** 30 operated patients in a prospective, comparative and transversal study. Inclusion guideline: ASA 2-3, 18-60 years old for emergency and elective laparoscopy surgery.with IMC > $35m^2$ Exclusion guideline: patients with peritonitis or intrabdominal bleeding. The patients were handled with general balanced anaesthesia, with rocuronium as a neurumuscular blockade (0.8mg/kg dose).(calculad Once TOF 0 PTC+3 was obtained a measuring of the abdominal cavity was performed. We applied 0.3 mg/kg and we waited for 2 minutes. The obtaining of TOF 0 PTC 0 was verified and we performed a second measuring of the abdominal cavity. All the procedures were carried out with an intrabdominal preassure of 12 mmHg.

Results: 30 patients, 22 (62.8%) female and 13(37.1%) male, with an age average of +-45,2 years old. The majority of the patients had an ASA 3 (68%). The difference in the second measuring with deep neuromuscular blockade was significantly higher compared to the first measuring with Deep neuromuscular blockade (p=0.052), with an average of 7.20 cm (STDEV 0.76) for the first measuring and 8.53 cm (STDEV 1.04) for the second one.
Conclusions. If we use Deep neuromuscular blockade in laparoscopic procedures,for patiens obese we will obtain better surgery conditions with a low abdominal preassure, and we will better ventilation diminishing morbility and mortality related to pneumoperitoneum.

A5245

ENDOMETRIAL HEALTH OF BARIATRIC SURGERY CANDIDATES

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Introduction: Severely obese women undergoing bariatric surgery are an excellent group to target for endometrial cancer prevention research as they are at high risk for the development of endometrial abnormalities. Little is known about the prevalence of prior gynecologic procedures (hysterectomy and endometrial ablation) that would prevent the study of endometrial health in this population. This study documents the prevalence of hysterectomy and endometrial ablation among a sample of women undergoing bariatric surgery. It also documents reasons for endometrial biopsy failure in a group of women with uteri that our group attempted to sample for endometrial health assessment.
Methods: This analysis includes 111 consecutive, adult female bariatric surgery candidates being screened for participation in a prospective cohort study examining endometrial health between February 2013 and June 2014. We also investigated reasons for endometrial biopsy failure for 48 women with uteri

undergoing pipelle endometrial screening. Descriptive statistics were used to illustrate central tendencies of variables. Wilcoxon rank sum tests (continuous variables) and chi-squared tests (categorical variables) were used to compare characteristics between those with and without a history of hysterectomy or endometrial ablation.
Results: Participants were aged 43 (Interquartile Range (IQR): 33, 53) years, 85% Caucasian, and had a median BMI of 44.17 kg/m2. Twenty-four (21.62%) women reported a history of hysterectomy or endometrial ablation. In women with attempted biopsies, common reasons for biopsy failure were inability to locate the cervix, stenosis of cervix, and inability to collect sufficient sample of endometrial tissue.
Conclusions: Further research is needed to investigate endometrial health in bariatric surgery candidates. As obesity and endometrial health research are increasing, the scientific community would benefit from improved knowledge about basic characteristics of this high-risk population.

A5246
THE VALUE OF PREOPERATIVE TESTING IN PATIENTS UNDERGOING BARIATRIC SURGERY
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Introduction: Before undergoing bariatric surgery, patients undergo a testing regimen intended to reveal absolute and relative contraindications to surgical procedures. The purpose of this study is to examine the influence of preoperative testing on surgical decision-making in a single bariatric practice.
Methods: This was a retrospective chart review that underwent IRB approval and was conducted following HIPAA guidelines. Subjects included patients of a single surgeon who underwent preoperative workup for bariatric surgery between Jan 2009 and June 2014. Preoperative tests included right upper quadrant ultrasound, esophagogastroduodenoscopy with pathological sample, and upper gastrointestinal series. Endpoints examined included whether a patient proceeded to surgery, and what surgery was performed (laparoscopic sleeve gastrectomy, Roux-en-Y gastric bypass, hiatal hernia repair or other).
Results: 89 patients underwent partial or complete preoperative workup for bariatric surgery. Of these patients, 243 (62%) underwent surgery, and 226 underwent uncomplicated and successful bariatric surgery (58%). Logistic univariate models showed that patients with a relative contraindication to bariatric surgery on EGD were less likely to proceed to surgery ($p = 0.000$, $p < 0.020$, respectively). Of patients who underwent successful bariatric surgery, 207 (92%) received a laparoscopic sleeve gastrectomy, and 19 (8%) had a Roux-en-Y gastric bypass. Logistic univariate models showed that patients with gastric dysmotility on UGI were more likely to undergo Roux-en-Y bypass ($p<0.039$). Multivariate logistic regression showed no other significant predictors of type of surgery performed, or whether a hiatal hernia repair was performed.
Conclusion: Preoperative testing had minimal statistically significant influence on progression to surgery, or the type of bariatric surgery received by patients. Right upper quadrant ultrasound was of no utility in preoperative management. We found that both upper gastrointestinal series and esophagogastroduodenoscopy were of moderate use in preoperative management. As EGD is a higher yield test, we recommend EGD as a single standard preoperative test, with UGI to be performed in selected patients symptomatic for dysmotility, and RUQ US to be performed in patients with concern for hepatitis and/or biliary colic.

A5247
COMPARATIVE EFFECTIVENESS OF THREE BARIATRIC PROCEDURES: ROUX-EN-Y GASTRIC BYPASS, LAPAROSCOPIC ADJUSTABLE GASTRIC BAND, AND LAPAROSCOPIC SLEEVE GASTRECTOMY IN VETERAN PATIENTS
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Background: Bariatric surgery is associated with improved related comorbidities, quality of life and survival in severely obese patients. Common bariatric procedures include Roux-en-Y gastric bypass (RYGB), laparoscopic adjustable gastric band (LAGB), and laparoscopic sleeve gastrectomy (LSG). Currently, comparative effectiveness evidence on different bariatric procedures in veterans patients is limited. The objective of this study was to compare the effectiveness of the three bariatric surgery procedures performed in Veterans Affairs Loma Linda Health System (VALLHS). **Methods**: This study was a single-institution, retrospective cohort study. Patients were identified if they underwent bariatric surgeries in between August 1, 2006 and February 1, 2014 at VALLHS. The primary outcome was weight reduction, expressed as percentage weight loss (%WL) and percentage excess weight loss (%EWL) following 12 months of bariatric surgery. Secondary outcomes were number of medications prescribed and laboratory markers for obesity-related chronic conditions (diabetes, hypertension, hyperlipidemia, GERD, and obstructive sleep apnea). Inverse-probability weighting propensity score method was used to balance patients' baseline demographic and clinical characteristics among three bariatric procedures.
Results: A total of 162 patients (84 in RYGB, 48 in LSG, and 30 in LAGB) were included in the study. The mean %WL and %EWL were 31.4% and 41.3% for RYGB, 20.8% and 27.5% for LSG, and 12.1% and 16.2% for LAGB, respectively ($p < 0.001$, and $p < 0.001$, respectively). The mean (± SD) reduction in number of chronic medications for RYGB, LSG, and LAGB were 3.2 (± 3.5), 1.9 (± 3.2), and 1.2 (± 2.2), respectively ($p < 0.001$). In addition, the mean (± SD) total cholesterol and LDL at 12-month post-surgery were 161.8mg/dl (± 48.4) and 90.4mg/dl (± 39.8) for RYGB; 187.9mg/dl (± 77.8) and 115.6mg/dl (± 71.4) for LSG; and 168.9mg/dl (± 45.7) and 100.7mg/dl (± 44.8) for LAGB, respectively ($p = 0.003$ and $p = 0.001$, respectively). No significant differences were observed in fasting glucose, HbA1c, HDL, triglycerides, and blood pressure among three procedures at 12-month post-surgery.
Conclusions: For short-term outcomes, RYGB appears to achieve better weight reduction and management of obesity-related chronic conditions as compared to the LSG and LAGB procedures in Veteran patients. LSG could be the next alternative over LAGB for bariatric procedure for this patient population.

A5248

IMPROVEMENT OF CO-MORBIDITIES AND QUALITY OF LIFE AFTER BARIATRIC SURGERY ON SAUDI POPULATION

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Objective: To analyze and compare the efficacy of various standard bariatric surgical procedures on Saudi patients using the Bariatric Analysis and Reporting Outcome System (BAROS).
Methods: It's a prospective, descriptive analytical study conducted in two medical institutions in the Kingdom of Saudi Arabia. A total number of 270 patients who had different bariatric surgery procedures during the period from March 2010 to December 2012 were included in this study. The questionnaire of bariatric analysis and reporting outcome system (BAROS) was translated into Arabic language to make it more understandable to a wide range of population. The questionnaire was validated before collecting data from the study subjects. The data was analyzed and scored against three outcomes, excess weight loss, cure or improvement of co-morbidities, and quality of life changes. The data was statistically analyzed using SPSS 21.
Results: Two hundred and seventy (270) patients who had different bariatric surgical

procedures were included from March 2010 through December 2012. Of the total population under study, 79 (29.25%) underwent Laparoscopic Roux-en-Y gastric Bypass Procedure (LRYGBP), 159 (58.88%) had Laparoscopic Sleeve Gastrectomy (LSG), and 32 (11.85%) had Laparoscopic Adjustable Gastric Banding (LAGB). The overall female to male ratio was 2.5:1, 0.8:1, 1.3:1 for LRYGBP, LSG, andLAGB respectively. An average age was 36.41±8.87, 31.87±9.83, 34.75±11.24 and average BMI, 47.51, 48.59 and 38.45 respectively for the same three procedures .Complete remission of at least one comorbidity was reported in 36% of LRYGBP, 51% in SG, and 42% in LAGB. While all other patients have improved comorbidities. The results of different procedures were very encouraging and each procedure has its own place and rank in the three variables that constitute the main body of BAROS. The BAROS score was good or higher in 78.5% of LRYGBP, 83.6% for the LSG, and 84.4% of LAGB patients. The average excess weight loss (EWL) was 67.94%, 75.82 %, and 81.65 %. **Conclusion:** Overall**,** bariatric surgical procedures provide a substantial reduction in excess weight, improvement and cure of co-morbidities, and improvement in quality of life. LSG was found to be the most effective procedure against obesity related co-morbidities followed by LRYGBP. LSG is superior for weight reduction as measured by t-test, and LAGB can be equally effective to other procedures in selected obese candidates, at least for a short-term follow up. Therefore, standard bariatric procedures have different degrees of impact and outcomes that can be beneficial in selecting appropriate procedure for appropriate indications and patients**.**

A5249

OBESITY IS ASSOCIATED WITH INCREASED CHEMERIN ACTIVATION

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Background: Chemerin is a chemoattractant involved in immunity and adipogenesis. It exists in several isoforms with different biological activity, regulated through precise C-terminal proteolytic cleavages by proteases involved in coagulation, fibrinolysis and inflammation. Obesity is associated with increased circulating chemerin; however the relative composition of active and inactive chemerin isoforms is unknown. Increased adipose mass is associated with increased levels of proinflammatory proteins; therefore, we propose that in obese people there will be higher levels of active chemerin in plasma and adipose tissue compared to lean individuals.
Methods: Total chemerin and levels of four specific chemerin isoforms with different biological activity were measured by specific ELISAs in plasma and adipose tissue in 30 obese patients undergoing bariatric surgery and 10 lean volunteers. Chemerin was purified from plasma and analyzed by mass spectroscopy.
Results: Total chemerin in plasma was higher in obese patients than in lean volunteers (176.2±13.4 ng/ml vs. 77.3±6.7ng/ml, $p<0.0001$). Active chemerin constituted a higher proportion of total chemerin in adipose tissue than in plasma (27.6% vs. 1.81% respectively, $p<0.0001$). Chemerin activation in plasma was higher in the obese than the lean group. A large proportion of chemerin in the obese group was undefined and not identified by the isoform-specific ELISAs. Mass spectrometry of purified chemerin from obese patients found significantly more peptides with a C terminus at Asp 144 than in control donors ($p=0.021$), indicating the presence of higher levels of smaller chemerin isoforms in the plasma of obese patients, likely due to increased proteolysis.
Conclusion: Activation of chemerin in plasma is significantly higher in obese patients.

A5250

THE EFFECT OF SMARTPHONE APPLICATIONS AND TECHNOLOGY ON WEIGHT LOSS SUCCESS AND THEIR POSSIBLE IMPACT ON BARIATRIC PATIENTS

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Today, over 76 million Americans are obese. Those with a BMI over 35 qualify for bariatric surgery as a weight loss mechanism. As smartphones and their applications have become prevalent over the last decade, clinical researchers have looked at whether they can function as a viable and feasible weight loss tool; specifically in a bariatric setting. It is estimated that 180 million people own a smartphone and there are currently 61 Apple, 100 Google Play and 1 Blackberry applications targeted specifically to bariatric patients according to smartphone store searches. Smartphone applications that are weight loss oriented gain rationale through clinical trials and FDA approval. In addition, academic or hospital affiliation with smartphone applications adds to their validity. Today only 12% of surgical smartphone applications are associated with academic institutions or associations. Clinical trials that have been conducted regarding weight loss applications are often thought of in terms of patient engagement, compliance, clinical outcomes and feasibility. Smartphone applications have been found to significantly increase patient engagement as well as compliance to clinical recommendations. While the applications prove feasible in this sense, they fail to significantly impact clinical outcomes such as weight loss when compared to control groups. Future research is needed to relate these categorical components to bariatric patients. Smartphone applications may possibly prove a viable weight loss tool in this population.

TOPIC: Sleeve Gastrectomy

A5251

PERIOPERATIVE OUTCOMES OF SINGLE-PORT LAPAROSCOPIC SLEEVE GASTRECTOMY VERSUS CONVENTIONAL MULTI-PORT LAPAROSCOPIC SLEEVE GASTRECTOMY

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Introduction: Laparoscopic sleeve gastrectomy (LSG) has been gaining popularity in the US as a single stage procedure for the surgical management of morbid obesity. The conventional method involves a multi-port approach with an average of four to five trocar sites. With the increasing use of a single-port approach in various gynecologic, urologic, and general surgical procedures, this method may be a feasible alternative to the multi-port approach for laparoscopic sleeve gastrectomy.

Methods: A systematic review was conducted to identify all relevant studies between 2005 – 2015 with comparative data on single-port versus multi-port LSG. The primary outcomes were use of postoperative analgesia, mean operative time, mean hospitalization, percentage excess weight loss, and postoperative complications (incisional hernia, bleeding, staple line leakage). Secondary outcomes included cosmesis and resolution or improvement in comorbidities. Results are expressed as standard difference in means with standard error. Statistical analysis was done using random-effects meta-analysis to compare the mean value of the two groups (Comprehensive Meta-Analysis Version 3.3.070 software; Biostat Inc., Englewood, NJ).

Results: Six studies were quantitatively assessed and included for meta-analysis, which included three prospective and three retrospective studies. Among the six studies, 450 were single-port LSG patients and 511 were multi-port LSG patients. The use of postoperative analgesia was significantly lower in the single-port group (-1.0±0.25, $p<0.0001$) when compared to the multi-port group. Patients in the single-port group expressed better satisfaction with their

incisional scars. There was no significant difference between the single and multi-port LSG approaches with regards to mean operative time (0.24±0.18, p=0.20), mean hospitalization (-0.23±0.23, p=0.31), and percentage excess weight loss (0.023±0.066, p=0.73). Postoperative complications and resolution or improvement of comorbidities were similar in both patient groups.
Conclusions: Single-port LSG is a feasible alternative to multi-port LSG for surgical management of morbid obesity, as it is associated with reduced use of postoperative analgesia and better cosmesis.

A5252
WEIGHT LOSS AT THREE MONTHS PREDICTS SUCCESS AT ONE YEAR AFTER SLEEVE GASTRECTOMY
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Introduction: Predictors of long-term weight loss in sleeve gastrectomy(SG) currently do not exist. We reviewed our long term data in a single private practice to assess for variables that will help surgeons predict weight loss failure early after SG.
Objective: To create weight prediction models to aid in the evaluation of the adequacy of short-term weight loss post SG on long-term weight maintenance.
Methods: 491 patients undergoing SG in a Private Practice setting were included in the study. Data was collected retrospectively from March 2011 through September 2013. Percent excess weight loss (EWL) was calculated for each patient at 3 months and 1 year. Linear regression was performed on all patients with greater than 1 year follow up in order to interpolate their weight at 1 year. Patients were included only if they had at least 3 follow up visits and their weight loss could be modeled with a R^2>0.95. Multivariate analysis was used to determine the predictive factors that influence weight loss.
Results: Patients were divided into EWL quartiles. The patients quartiles were as follows at three months quartile 1 7-33%, quartile 2 34-41%, quartile 3 42-51%, quartile 4 >51%. Patient's weight loss tended to remain in the quartile they were in at their 3 month visit, especially those in the 1st and 4th quartiles. The positive and negative predictor values at 12 months for the 1st quartile results were 70% and 84% respectively.
Conclusions: We are the first group with data documenting that short-term weight loss can predict long-term weight loss success or failure quite accurately. Identifying failure early is critical to the long-term success of the bariatric patient. This knowledge will allow surgeons to discuss intervention such as medication, lifestyle or conversion to gastric bypass or duodenal switch reoperations at three months rather than waiting years for weight regain to occur.

A5253
SLEEVE GASTRECTOMY HAS THE LOWEST READMISSION RATE OF ANY BARIATRIC PROCEDURE
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Objective: The aim of this study is to analyze in detail readmissions triggered after a bariatric procedure.
Background: Laparoscopic Sleeve gastrectomy(LSG) is the most popular bariatric operation worldwide. Some speculation exists on the increased 30-day readmission rate after LSG because of diet intolerance.
Methods: We retrospectively reviewed all the readmissions in patients who had undergone a bariatric procedure in at our institution from

December 2010 to November 2014. We analyzed all of the patients who were readmitted. Procedures that resulted in readmission were categorized in 4 groups: gastric band (LGB), Roux-n-Y Gastric bypass (LRYGB), gastric sleeve (LSG), revisions. Each group was studied individually. Comparisons of length of readmission stay were made between procedure types using the Kruskal-Wallis rank-sum test. Comparisons of length of readmission were observed as follows (less than 23 hours) vs. inpatient admission (more than 23 hours) were performed using Pearson's 2 test.
Results: Over the 4 year period there were 1133 operations 43 (3.7%) LGB, 643 (56.7%) LSG, 279 (24.6%) RYGB and 168 (14.8%) Revisional procedures. A total of 133 patients were readmitted within 30 days of the index procedure. This resulted in a total of 162 readmissions, 133 patients were readmitted at least once, 22 twice, 5 three times and 2 patients four times. The total readmission rate was 11.6% for LGB (n=5), 8.1% for LSG (n=52), 15.1% for LRYGB (n=43), 19.6% for Revisions (n=33). These differences probed to be statistically significal when Sleeve gastrectomy was compared to LRYGB (p=0.007) and to Revisional procedures (p<0.001). From the total 162 readmission encounters 35% (n=57) were observations and 65% (n=105) inpatient admissions. No differences in patients' characteristics were found for the two modalities of readmission. The breakdown of type of admission per type of procedure is as follows:LGB 4% of observations (n=2) 3% of admissions (n=3), LSG 42% of observations (n=24) and 41% of admissions (n=43), LRYGB 25% of observations (n=14) and 31% of admissions (n=33), REV 30% of observation (n=17) and 25% of admissions (n=26) (p=0.81). The differences seen in the length of stay during the readmission between procedure types are not significant (p=0.79) With a median stay of one day of stay in every procedure and an overall average of 2.8 days.
Conclusions: Laparoscopic sleeve gastrectomy has the lowest readmission rate of all bariatric procedures. Multiple reasons can trigger a readmission after bariatric surgery; none of them however are procedure specific. Patients present with a similar pattern in terms of time after surgery, length of stay and chief complain. Efforts to reduce readmission after bariatric surgery have to be aimed at the overall operated population regardless of the original procedure they received.

A5254
EARLY EFFECTS OF SLEEVE GASTRECTOMY ON CHRONIC LOW GRADE INFLAMMATION IN MORBIDLY OBESE PATIENTS
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Introduction: The pathophysiology of obesity is multi-factorial. Many studies implicate chronic low grade inflammation in the interplay between obesity and metabolic complications, such as atherosclerosis, hypertension, type 2 diabetes, osteoarthritis et al. There are only a few studies to look at the inflammatory marker changes in obese patients after weight loss surgery. The aim of this study is to investigate the early effects of sleeve gastrectomy on the inflammatory markers and cytokines in morbidly obese Japanese patients.
Method: This is a prospective study on patients who underwent sleeve gastrectomy. Diverse epidemiological variables were collected from the patients, including age, sex, BMI, personal history, and surgical data. Different analytic values were gathered before and after surgery to evaluate weight loss results, and other data related to comorbidities after surgery. The clinical outcomes and the biochemical parameters were assessed at the preoperative visit, and first and sixth months after surgery. The blood samples were drawn in the morning and in a fasting state. All the patients satisfied surgical criteria for bariatric surgery in Japan, multiple dietary failures and a BMI greater than 35 kg/m^2 in the presence of obesity-related comorbidities. All patients were informed about the study characteristics and granted signed informed consent to participate. The surgical approach was laparoscopic with the use of five to six trocars. After the sectioning of the major gastric curvature, the gastrectomy was

performed from a distance of 4 cm from the pylorus to the angle of His, adjusted to a 36-Fr bougie. The staple line was oversewn and tested for leakage using gastroscopy.
Results: This study enrolled 8 patients, 4 of whom were women, with a median age of 46 years. The median BMI before surgery was 43 kg/m^2 with 89% of type 2 diabetes, 100% of hypertension, and 100% of dyslipidemia. There was no surcial complications. The excess weight loss 1- and 6-month after surgery were 38% and 74%, respectively. Most of comorbidities were improved or remitted after surgery. During the post-intervention period, the average levels of leptin, IL-4, IL-6, hs-CRP significantly decreased, whereas IL-1β remained unchanged. Adiponectin and bile acid increased postoperatively.
Discussion: Bariatric surgery is an effective therapeutic option that has demonstrated the greatest improvements in weight loss and comorbidities at mid- and long-term intervals in patients with morbid obesity. Several studies have demonstrated the effects of bariatric surgery on different inflammatory and endothelial function parameters can contribute to improvements in function and potential benefits in the cardiovascular and metabolic disorders. It has been reported that obese patients who underwent gastric bypass or sleeve gastrectomy demonstrated significant decreases in the levels of acute-phase reactants and inflammatory mediators such as CRP, fibrinogen, and leptin. An increase in anti-inflammatory parameters such as adiponectin has also been reported. In our work, the decreased levels of cytokines, such as IL-4 and IL-6, were observed after sleeve gastrectomy, which might be associated with improvement of chronic low grade inflammation in morbidly obese patients.
Conclusion: Sleeve gastrectomy is an effective procedure for metabolic complications of obesity by reducing weight and ameliorating chronic inflammatory state.

A5256
LAPAROSCOPIC SLEEVE GASTRECTOMY IS SAFE AND EFFECTIVE IN SEPTUAGENARIANS
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Background: Bariatric surgery has not traditionally been offered to patients at extremes of age, given the belief that surgical risk increases with age. Studies have been limited in regard to the safety and efficacy of bariatric surgery in the elderly. In this study we evaluated our experience with the laparoscopic sleeve gastrectomy in patients more than 70 years of age.
Methods: We queried our practice EMR for all patients with charges for sleeve gastrectomy CPT codes. This data was then delimited by age at date of surgery. A retrospective review was then performed on the practice and hospital charts of those patients identified as being 70 years or older at the time of surgery. Major morbidity, mortality, readmission, length of hospital stay, percent excess weight loss and change in BMI were recorded. **Results**: We identified 23 patients, 7 men and 16 women, 70 years or older (mean 73.7, range 70-83) who underwent laparoscopic sleeve gastrectomy with our practice between 2013 and 2015. The mean pre op BMI was 43.85 kg/m(2) (range 35.4 - 57.47kg/m(2)) and excess body weight was 130 lb (range 81 -215 lb). No mortality, major morbidity or readmission were identified, The average length of stay was 3.04 days. Mean percent excess weight loss at 3, 6, 12, and 18 months where 27.4, 40.58, 33.64, and 57.84 percent respectively. Mean change in BMI at 3, 6, 12, and 18 months where -7.72, -8.98, -10.99, -10.95 respectively.
Conclusion: Sleeve gastrectomy in patients over 70 years of age is associated with a low perioperative morbidity and mortality with effective weight loss in the obese patient. Thus, we conclude that sleeve gastrectomy is a safe and viable option in this cohort.

A5257
COMPARISON OF SIZE 60F AND SIZE 34F BOUGIES IN CALIBRATING SLEEVE GASTRECTOMY IN PATIENTS WHOSE

ASMBS

BMI IS BELOW 60: THE SIZE DOES NOT MATTER IN THE SHORT TERM

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Background: Laparoscopic sleeve gastrectomy (LSG) is the one of the most common bariatric procedures performed in North America. The ideal bougie size, used by surgeons to calibrate the sleeve size, is frequently debated. The aim of this study was to determine whether short-term weight loss varies with bougie size used during LSG.
Methods: We retrospectively reviewed the data from all patients whose BMI was <60kg/m2 who had undergone LSG at our institution in 2012 and 2013. The patients were randomly distributed between two surgeons depending on clinic and OR availability. One surgeon uses size 60F bougie exclusively while the other surgeon uses size 34F bougie exclusively. The data analyzed included preoperative BMI, age, gender and diabetes status. The primary outcome was percent excess weight loss (%EWL) at 12 months.
Results: A total of 168 patients underwent LSG during the 2-year period. Of these, 119 patients had their sleeve calibrated with size 60F bougie, and 49 had their sleeve calibrated with size 34F bougie. There were no differences between the two groups with regards to gender, age, pre-operative diabetic status and BMI. The mean percentage excess weight loss for the whole group was 49% (0-95%). The %EWL at 12 months for patients who had size 34 bougie and size 60 bougie was 52% and 48% respectively (p=NS)
Conclusion: LSG results in significant weight loss in the short term. When comparing one year %EWL between size 34F and 60F bougie, there was no significant difference. However, longer term follow-up of the two groups is required to determine whether a difference becomes evident over time. This is the first study, which we are aware of, that compares outcomes between size 60 bougie and size 34 bougie in patients whose BMI is less than 60.

A5259

COMPARISON OF DIFFERENT BOUGIE SIZES DURING LAPAROSCOPIC SLEEVE GASTRECTOMY: A SINGLE INSTITUTION EXPERIENCE

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Background: Laparoscopic sleeve gastrectomy (LSG) is one of the most common bariatric procedures performed in the United States. The aim of this study was to evaluate the outcomes of LSG based on the use of various bougie sizes.
Methods: We performed a retrospective review of primary laparoscopic sleeve gastrectomy cases performed at Cleveland Clinic Florida from 2004-2013. We compared the outcomes of LSG for each different bougie size. The data analyzed included: bougie size, body mass index (BMI), Post operative gastroesophageal reflux disease (GERD), Strictures and Early Complications (wound infection, leakage, bleeding, obstruction, Dumping Syndrome/Hypoglycemia, Nausea/Vomiting/Diarrhea, Staple line disruption, reoperation and death). The associations between categorical variables and Bougie size have been tested using the Wilcoxon rank-sum test, and association between continuous variables and Bougie size have been testing using Spearman's correlation. All analyses have been done using R software (R version 3.1.1 (2014-07-10),Vienna, Austria). All testing is two-sided and uses a 5% level of significance.
Results: We analyzed a total of 884 patients who underwent LSG over a 9 year period. The mean pre BMI was 43.4(Range 30-72.1). . Ten bougie sizes ranging from 38F to 60F were used. Post operatively GERD, stricture and early complications occurred in 6%, 1% and 7% of the patients. There were no statistically significant differences in the outcomes based on bougie size except for new onset of GERD (0.03) (Tables 1-

2). The most significant association between bougie size and the select variables was post operative GERD with a p value of. Althoughthe highest rate of GERD (12.3%) was noted with Bougie size 52F, the cumulative rate of GERD for the bougie sized 38-44 was the highest (table 2). There was one staple line disruption in the early learning curve in a bougie of 52.
Conclusion: Based on our analyses, different bougie sizes do not alter the outcome of LSG. The only variable affected by bougie size is the new onset of GERD. Further studies with more power in each categories are needed to draw definitive conclusions.

A5260
ENHANCED RECOVERY AFTER SURGERY (ERAS) PROTOCOL FOR OUT-PATIENT LAPAROSCOPIC SLEEVE GASTRECTOMY IN AMBULATORY SURGERY CENTER – SAFE AND EFFECTIVE
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Enhanced recovery after surgery (ERAS) is a multimodal perioperative care pathway designed to achieve early recovery after major surgical procedures. Use of the ERAS pathway has been shown to reduce care time by more than 30% and reduce postoperative complications by up to 50%. The aim of this study was to determine the outcomes following implementation of an ERAS protocol for out-patient Laparoscopic Sleeve Gastrectomy (LSG) in the Ambulatory Surgery Cente (ASC) settings.
Methods: The data from all consecutive patients who underwent LSG in the ASC from 2011 to 2015 was prospectively collected and retrospectively analyzed. Patients with previous open foregut surgeries were referred to in-patient facility. All procedures were performed by one surgeon (S.L.). Anesthesia was performed by one anesthesiologist (D.L.) LSG was performed in a standardized technique using 40 Fr bougie. Transversus abdominis plane block was performed in all patients. Starting from 2013 the majority of procedures were performed robotically. Drains were used selectively. Enhanced recovery after surgery (ERAS) protocol (preoperative education, early aggressive ambulation, clear liquids as soon as the patient is fully awake and non narcotic analgesia) was implemented. Patients were observed in the surgical center overnight and released home next morning. Data analyzed included demographics, preoperative BMI, and postoperative complications.
Results: 229 patients (182/47 F/M, mean age 32 y., mean BMI 42 kg/m2) underwent LSG (143 laparoscopic, 85 robotic assisted). Total 13 patients (5.7%) developed complications. Of them 5 patients (2%) were transferred to in-patient facility. In 1 patient the procedure was aborted due to trocar induced retroperitoneal injury. The patient was transferred to in-patient facility for observation and had uneventful recovery. 2 patients were transferred due to inability to tolerate liquids, and 2 – due to suspected cardiac event, which was not confirmed later. Three of these were discharged next day after transfer, and 1 patient developed acute renal failure after undergoing CT scan with IV contrast. There were 8 readmissions: 2 for portal vein thrombosis, 2 for dehydration, 1 for intra-abdominal bleeding required blood transfusion and 1 patient developed urinary tract infection week after surgery. There were no leaks or reoperations.
Conclusion: ERAS is an effective pathway and can be safely implemented in patients undergoing out-patient LSG in the ASC settings.

A5262
GRIPPING SURFACE TECHNOLOGY FAILS TO REDUCE WASTED STAPLE CARTRIDGES IN SLEEVE GASTRECTOMY
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Background: Performing sleeve gastrectomy requires multiple staple cartridges (SC). Staple

cartridges can be wasted by resecting portions of previously created staple line or by firing staples without tissue. In an attempt to minimize wasted sleeve cartridges (WSC), a new staple cartridge has been introduced to potentially limit tissue extrusion during multiple staple fires. Our study aim was to determine whether the number of WSC decreased after switching to Gripping Surface Technology (GST) cartridges.
Methods: To determine the minimum number of SC required for pouches of variable length, we calculated the number of staple cartridges per case that should be used—the ideal staple cartridge number (ISC). We used the formula WSC = SC – ISC to calculate our staple cartridge waste for each case. All sleeve gastrectomy procedures were performed using the same technique – beginning the staple line 6cm from the pylorus and using a 40Fr bougie. Staple line length was measured in the pathology suite. ISC was calculated by dividing the measured staple line length by the length of a staple cartridge (6cm), rounding down to the nearest integer, and adding one. The date of the change to Gripping Surface Technology cartridges was recorded, which separated our prospective groups into Pre and Post GST. All comparisons were made using Student's t test.
Results: 224 cases were included in the analysis (99 Retrospective, 91 Prospective - Pre GST, 34 Prospective - Post GST). The average number of WSC per case was 2.6 ± 1.3 in the Retrospective group, 1.6 ± 1.1 in the Pre GST group, and 1.5 ± 0.96 in the Post GST group. There was a difference in WSC between the Retrospective group and the Pre GST group ($p < 0.001$). However, no difference in WSC was found between the Pre GST group and the Post GST group ($p = 0.656$).
Conclusion: Gripping Surface Technology failed to reduce the number of wasted staple cartridges in sleeve gastrectomy. Because our center began counting cartridges prospectively, prior to the introduction of GST, we were able to discern that minimizing WSC is due to counting SC, rather than the use of GST. This study is a reminder that surgeons are subject to the Hawthorne, or observer, effect and that the surgeon plays a critical role in both technologic evaluation and performance improvement.

A5263

PREOPERATIVE BMI DIABETES AND SLEEP APNEA CAN BE USED TO PREDICT LONG TERM SUCCESS OF OUTPATIENT VERTICAL SLEEVE GASTROSTOMIES

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Background: Currently there are no models to predict a patient's ability to succeed at a surgery before they receive it. Because of this many surgeons disagree on what procedures to offer to their patients and what variable should influence this decision.
Objective: To create a statistical model that predicts failure in a sleeve patient before surgery.
Methods: 491 patients undergoing SG in a Private Practice setting were included in this study. Data was collected retrospectively from March 2011 through September 2013. Percent excess weight loss (EWL) was calculated for each patient at 1 year. Linear regression was performed on all patients with greater than 1 year follow up in order to interpolate their weight at 1 year. Patients were included only if they had at least 3 follow up visits and their weight loss could be modeled with a $R^2>0.95$. Multivariate analysis was used to determine the predictive factors that influence weight loss success.
Results: Patients were divided into EWL quartiles. The patients quartiles were as follows at one year quartile 1 9-54%, quartile 2 55-68%, quartile 3 69-84%, quartile 4 >85%. Patients in the first quartile at one year were defined as failing the procedure. The positive and negative predictor values for our model were 58% and 81% respectively with sensitivity at 33% and specificity at 92%. The multivariate analysis indicated that diabetes, sleep apnea, and

preoperative BMI were statistically significant predictors of the EWL% at 1 year.
Conclusions: We are the first group to show that weight loss at 1 year can be predicted before the surgery is performed. Patients with sleep apnea, diabetes, and a BMI greater than 48 should not be offered a sleeve gastrectomy because of the high failure probability.

A5265
LAPROSCOPIC SLEEVE GASTRECTOMY FOR MORBID OBESITY FOLLOWING LIVER TRANSPLANTATION
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Background: In United States 7% of patients undergoing liver transplants are obese. The impact of obesity in the long-term result of liver transplantation has become increasingly evident with the increased incidence of diabetes, dyslipidemia, and cardiovascular disease, jeopardizing the survival of these patients.
Methods: We present a case of 37 year old male with morbid obesity who underwent liver transplantation for alpha 1-antitrypsin deficiency 5 years prior. His BMI was 52 kg/m^2 and had multiple comorbidities: mitral valve endocarditis, hypertension, diabetes mellitus, obstructive sleep apnea, and combined immunodeficiency. The patient was treated 1 month prior for liver rejection. The liver biopsy demonstrated 75% steatosis. Due to degree of obesity and presence of comorbidities, laparoscopic sleeve gastrectomy was recommended. Large amounts of adhesions between the bowel, omentum, and stomach were taken down from the abdominal wall. A 38-French bougie was passed through the pyloric channel, and stomach was vertically transected creating a gastric sleeve approximating 100 cc in diameter.
Result: The recovery was uneventful. The patient was discharged after 2 days.
Conclusion: Obesity is a common problem in managing liver transplant patients. Sleeve gastrectomy is the preferred technique in these patients as it does not demand the maintenance of the gastric band, and does not compromise the absorption of nutrients or medications (e.g. immunosuppressive drugs) that is commonly seen from Roux-en-Y gastric bypass.

A5266
A PROSPECTIVE RANDOMIZED CONTROLLED TRIAL IN LAPAROSCOPIC SLEEVE GASTRECTOMY (LSG): BUTTRESSING VERSUS HAND-SEWN SUTURING IN STAPLE LINE REINFORCEMENT
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Background: Laparoscopic sleeve gastrectomy (LSG) has a specific significant morbidity pattern including gastric staple line leak and bleeding. Reinforcement of the staple line may decrease these specific complications. We evaluated the use of two different techniques during LSG: buttressing the staple line with Seam-guard (GORE) versus a running hand-sewn invagination with absorbable suture. Evaluated were operative times, surgical cost, complications and change in gastrointestinal quality of life.
Method: This is an IRB approved randomized controlled trial. Analyzed were operative time (trocar placement with exposure, stomach resection with reinforcement and total operative time), estimate total blood loss, the number of stapler cartridges used, major and minor postoperative complications. All patients were assessed with the Gastrointestinal Quality of Life Index **(**GILQLI) questionnaires at preoperation and 1,6 months after surgery.
Results: From June 2014 to January 2015, 30 (of 112 planned enrollment) consecutive patients were randomized into each group (14 hand-sewn and 16 buttressing). This was a single surgeon using a standardized technique. There were no statistical differences in mean preoperative data between the groups including, gender (female/male: 12/2 and 13/3), age (42.29 vs

47.88 years old), preoperative body mass index (BMI) (47.14 vs 49.61 kg/m^2), gastric anatomy, and preoperative total GIQLI score (114.07 vs 116.25). There were no major postoperative complications (gastric staple line leak or bleeding) in either group. Mean total blood loss was the only perioperative outcome that was statistically different between the two groups (51.43 ml in hand-sewn group vs 13.75 ml in buttressing group;$p = 0.01$). Even though some findings were not statistically significant, there were trends. More time was required in resection and hand sewing in comparison to resection with Seam-guard (24.21 vs 22 minute; $p = 0.38$). Also seen in the gastrointestinal quality of life survey was more regurgitation and dysphagia in the hand-sewn group after 1 and 6 months ($p = 0.35$).
Conclusion: Reinforcing of the staple line during LSG may decrease the risk of gastric staple line leak and hemorrhage. Reinforcement by suturing may increase intraoperative total blood loss, require more time and lead to more disease-specific symptoms (when compared to buttressing). Study completion (112 patients) with long term follow up may lead to a greater degree of differences with cost-analysis.

A5267
ROBOT-ASSISTED VERSUS LAPAROSCOPIC SLEEVE GASTRECTOMY: LEARNING CURVE, PERI-OPERATIVE AND SHORT-TERM OUTCOMES
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Background: Currently, sleeve gastrectomy is most commonly performed laparoscopically. However, robot-assisted approach for sleeve gastrectomy is increasing in number among bariatric surgeons.
Objectives: The aim of our study is to compare perioperative outcomes of robot-assisted (RA-LSG) and laparoscopic sleeve gastrectomy (LSG). **Setting:** Academic Hospital, United States
Material and Methods: Between June 2008 and December 2014, 647 patients underwent LSG and RA-LSG at our institution. The first 100 LSG and RA-LSG cases were separated to reflect the influence of learning curve. A retrospective review was performed for 379 LSG and 268 R-LSG patients, noting the outcomes and complications of the procedure.
Results: Mean length of hospital stay (LOS) was 1.1±0.3 days (range, 1-2) in initial 100 LSG patients, and 1.3±0.6 days (range, 1-4) in initial 100 RA-LSG patients. Thirty-day readmission rate was 5.0% in LSG patients and 6.0% in RA-LSG patients. No patient in these groups required a reoperation within 30 days, however, one mortality (1.0%) occurred in the RA-LSG group. In the latter groups, mean LOS was 1.2±0.5 days (range, 1-5) in 278 LSG patients, and 1.7±1.8 days (range, 1-21) in 167 RA-LSG patients. Thirty-day readmission rate was 2.2% and 30-day reoperation rate 0.7% in the LSG group. Thirty-day readmission rate was 2.4% and 30-day reoperation rate 1.2% in the RA-LSG group. Overall leak rate was 3.2% (n=9) in the LSG group, and 1.9% (n=5) in the RA-LSG group, and the difference in the leak rate was significant in the RA-LSG group between the initial and latter cases.
Conclusions: Our study showed similar 30-day readmission and reoperation rate between LSG and RA-LSG during the learning curve and after the proficiency has been achieved.

Comparison of LOS, 30-day readmission and reoperation, and leak rate between LSG and RA-LSG patients

A5268
IS A LIVER RETRACTOR ALWAYS NEEDED IN SLEEVE GASTRECTOMY? PRELIMINARY RESULTS AND DESCRIPTION OF TWO TECHNIQUES TO AVOID THE RETRACTOR WHILE KEEPING OPTIMAL EXPOSURE.
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Objective: Fixed Liver Retraction (FLR) has traditionally been considered mandatory for all foregut surgery. For most procedures (RYGB, Hiatal Hernia repair) operative exposure of the lesser curvature of the stomach and right crus does require fixed retraction. Sleeve gastrectomy (SG) requires visualization of the angle of His and left crus, but not "right sided" structures. We hypothesize that selective use of FLR in SG may minimize complications (pain and narcotic use, liver injury, liver infarction or necrosis), and improve outcomes (length of stay, patient satisfaction and cosmesis) without compromising efficiency and safety (Op time, EWL and EBL) We describe two techniques to preserve uncompromised visualization.
Method: We prospectively examined all cases of SG over 3 months (primary SG or as part of DS). Hiatal Hernia repair and revisional surgery cases were excluded. Age, gender, BMI and major Co-morbidities were tracked. Outcomes analyzed include narcotic use and pain scores, liver injury, liver function tests, length of stay, estimated blood loss, Operative time, readmission within 30 days of surgery. We will describe and present video of two operative techniques that allow for complete visualization of Left Crus and Angle of His.
Results: A total of 112 patients underwent any type of Sleeve Gastrectomy procedure in the 3 month study period. 14 were excluded for HH, 3 were excluded for revision. 62 had primary Sleeve and 33 had sleeve as part of DS. 61.29% (38/62) of Primary Sleeve patients did not require fixed liver retraction. Liver injury, estimated blood loss, Length of stay, operative time and pain scoring results did not meet statistical significance.
Conclusion: Retractor-related liver injuries and post-operative pain are previously described in the literature. Our study shows selective use of Fixed Liver Retraction results in no significant difference in complications or outcomes. This novel technique is simple and safe and provides equivalent possibly superior outcomes.

A5269
OUTCOME OF SLEEVE GASTRECTOMY IN ELDERLY OBESE PATIENTS

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Introduction: A coincident phenomenon of our age and society is global ageing and obesity´s pandemic. Bariatric surgery represents the therapy of choice in morbidly obese patients due to its safety and clinical efficacy. Consequently the indication for bariatric surgery in elderly obese patients becomes more relevant as it is considered to be less effective and associated with higher morbidity. Long-term data concerning outcome of sleeve gastrectomy in elderly obese patients are still lacking.
Material and methods: This study represents a retrospective, single-center analyses of all sleeve gastrectomies performed in patients older than 55 years between 2003-2014. Data such as postoperative outcome of weight parameters and comorbidities, complication rate, length of stay, impact on quality of life (BAROS-Score) and food tolerance score were reviewed.
Results: total of 33 patients underwent sleeve gastrectomy at the age of 55 or older. The average age of this patient´s population was 61 (min 55/max 67) years. 91% of all patients could be followed up. The average follow up was 67 months. 1 (3%) complication, namely leakage of the staple line at the gastroesophageal junction, could be observed. %EWL was 45% (min 7.5/max 95). Weight regain of 10kg from the nadir could be seen in 9 (30%) patients. Concerning obesity related comorbidities an amelioration or even remission was reached in 57%.
Conclusion: Sleeve gastrectomy in elderly patients can be considered as safe, efficient and reasonable therapy option in the long-term. Although weight regain represents a major concern, the real benefit lies in amelioration of comorbidities and quality of life.

A5270
COST COMPARISON OF THREE STAPLE-LINE REINFORCEMENT

TECHNIQUES IN VERTICAL SLEEVE GASTRECTOMY

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Background: In an era of increasing costs and decreasing reimbursement, providing cost-effective health care is essential. Although various staple-line reinforcement (SLR) techniques have shown potential benefit in reducing complications rates in vertical sleeve gastrectomy (SG), little data are available regarding the costs of these techniques. The purpose of this study was to determine the costs associated with SLR in SG by comparing the use of imbrication (IMB), bovine pericardium (BPC), and polyglycolic acid:trimethylene carbonate (PTC) by assessing product costs and operative time. Thirty day outcomes were also evaluated to assess for effectiveness of the techniques.
Methods: A retrospective review was conducted on all patients who underwent a SG from January 1, 2009 to January 1, 2015 by a single group of surgeons. Patients were placed into one of three cohorts based on type of SLR technique (IMB, BPC, or PTC). Data collected included patient demographics, operative time, implant costs, hospital length of stay (LOS), and 30-day postoperative rates of leak, bleed, reoperation, readmission, and mortality. Quantitative data were compared using ANOVA and Tukey's post-hoc analysis to investigate significant differences. Quantitative data are shown as the mean$\pm$SD. Nominal data were compared using the chi-square or Fisher's Exact test where appropriate and are shown as percentages. Significance was assessed at $p<0.05$.
Results: A total of 1,666 patients met inclusion criteria with 445, 345, and 817 patients in the IMB, BPC, and PTC cohorts, respectively. There were no gender differences among the groups (p=0.728). The PTC group was statistically significantly older than the IMB group (48.7$\pm$13.1 vs. 45.7$\pm$11.6, respectively; $p<0.001$). The pre-op weights for the IMB and PTC groups were significantly different (135.8$\pm$30.4 vs. 130.9+28.0, respectively; p=0.02). The IMB group (48.7$\pm$9.1) also had a statistically significant higher BMI than both the BPC (46.7$\pm$8.2; p=0.007) and PTC groups (47.2$\pm$8.6; p=0.02). LOS was statistically significantly shorter for the IMB group (2.1$\pm$0.64) compared to the BPC (2.4$\pm$0.92; $p<0.001$) and PTC (2.3$\pm$0.75; $p<0.001$) groups. Concerning 30-day complication rates, there were no statistically significant differences between IMB, BPC, and PTC reinforcement types in relation to rates of leak (1.1%, 1.4%, 0.7%, respectively, p=0.454), bleed (0.4%, 2.3%, 1.1%, respectively, p=0.116), readmission (2.2%, 4.1%, 2.9%, respectively, p=0.459), or reoperation (2.1%, 4.3%, 0.5%, respectively, p=0.186). The average implant cost was $5, $1,254, and $787 for IMB, BPC, and PTC, respectively, with average operative times in minutes of 100, 58, and 85, respectively. Based on an average OR cost of $20/minute, the overall cost related to SLR techniques were $2,005, $2,414, and $2,487 for IMB, BPC, and PTC, respectively.
Conclusions: Although some statistical differences in patient demographics were found among the groups, the clinical relevance is uncertain. More importantly, the safety and efficacy of the techniques were similar as there were no differences related to 30-day outcomes. The implant and overall costs related to SLR technique is lowest in the IMB group, but at the expense of increased operative time. Although operative time is lowest in the BPC group, this may be a reflection of individual surgeon speed.

A5271

COMPARISON OF STAPLE LINE REINFORCEMENT TECHNIQUE IN VERTICAL SLEEVE GASTRECTOMY PERFORMED BY A SINGLE SURGEON

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Background: Mechanical stapling devices are widely used resulting in reduced operating time, and reinforcing the staple line has become a common practice in order to reduce the incidence of complications such as bleeding or leaking. Reinforcement techniques vary from staple-line imbrication, over-sewing, or placement of a buttressing material. Numerous studies have compared these different techniques, but typically are limited in size or combine patients from multiple surgeons. In an effort to remove this confounding variable, we have conducted a retrospective cohort study utilizing data from a single surgeon.
Methods: The charts of 568 consecutive patients who underwent laparoscopic vertical sleeve gastrectomy (SG) by a single surgeon between January 2008 and August 2014 were reviewed. Three cohorts were created based on the type of staple-line reinforcement utilized, including imbrication (IMBR), polyglycolic acid:trimethylene carbonate (PGA:TMC), or both (BOTH). Data collected were patient demographics, hospital length of stay (LOS), 30-day rates of leak, bleed, readmission, reoperation, and patient mortality. Comparison of quantitative variables between the groups was accomplished via ANOVA. Nominal variables were evaluated using the test or Fisher's Exact test. Significance was assessed at $p<0.05$. Comparisons of Analysis of Statistical analysis were performed using IBM SPSS Statistics v. 21 (Armonk, NY).
Results: Of the 568 charts reviewed, 475 SG were reinforced using IMBR, 42 using PGA:TMC, and 51 using BOTH. Demographic data were similar between IMBR, PGA:TMC, and BOTH in regards to age (45.7 +/- 11.4, 48.8 +/- 10.6, and 44.0 +/- 9.1 years, respectively, p=0.114), weight (136.4 +/- 30.5, 143.0 +/- 30.0, and 132.7 +/- 27.4 kg, respectively, p=0.251), and BMI (49.0 +/- 8.9, 50.2 +/- 8.2, and 46.4 +/- 7.1 , respectively, p=0.076). There was no statistically significant difference between IMBR, PGA:TMC, and BOTH in regards to LOS (2.1 +/- 0.7, 2.1 +/- 1.0, and 2.1 +/- 0.5 days, respectively, p=0.998), rates of bleed (0.9%, 0%, and 0%, respectively, p>0.99), leak (0.7%, 0%, and 0.2%, respectively, p=0.59), reoperation (0.7%, 0%, and 0.2%, respectively, p=0.59), and readmission (1.4%, 0%, and 0.2%, respectively, p=0.8). There was no patient mortality recorded in the entire patient population.
Conclusions: Staple-line reinforcement in SG with either imbrication or buttressing with PGA:TMC appears to be equivalent in regards to LOS, 30-day rates of complications, reoperation, readmission, and mortality. There are not any perceived benefits of adding imbrication to the use of PGA:TMC. Choice of reinforcement type should be based on the comfort and skill of the surgeon with each of these techniques.

A5272

1000 CONSECUTIVE SLEEVE GASTRECTOMIES IN AN URBAN SAFETY-NET HOSPITAL: ACCREDITATION FACILITATED SAFE EXPANSION OF SURGICAL SERVICES

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Introduction: Laparoscopic sleeve gastrectomy (LSG) is currently the most common bariatric surgical procedure in the US. It is considered technically simpler to perform than the gastric bypass and is more effective than the gastric band. It is an ideal procedure to implement in an urban safety-net hospital with limited resources. There is also debate regarding "Center of Excellence (COE)" accreditation and potential decreased access to bariatric surgery for under-represented minorities.
Methods: A retrospective chart review of the first 1000 LSG at our institution was performed. Our institution is a public hospital that primarily serves under-represented minorities. Patient demographics and surgical outcomes were collected. A repeated measures model was used to create a % excess weight loss

(%EWL) model. Outcomes were also compared before vs. after COE accreditation.
Results: The cohort was predominantly Hispanic and non-Hispanic African American (96%). The vast majority (>75%) were insured publicly or were uninsured (15%). Mean age and BMI were 39 years and 45 kg/m^2, respectively. There was an eleven-fold increase in surgical volume after COE accreditation. 1 year %EWL was 64%. 30-day readmission and reoperation was 1.5% and 0.4%, respectively. Leak rate was 1.2%. There were no mortalities.
Conclusions: The COE model facilitated safe expansion of LSG at an urban safety-net institution.

A5273
STAPLE LOAD SELECTION METHOD BASED ON TISSUE THICKNESS MEASUREMENT
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Background: Current clinical practice for staple cartridge selection is based on experience and perceived tactile feedback. This subjectivity in staple load selection may lead to incomplete staple formation, leakage, or bleeding. The aim of this study is to objectively evaluate the thickness profile of excised specimens and the accuracy of current staple load selection method.
Methods: Primary sleeve gastrectomy was performed using either a 36 Fr. ViSiGi 3D™ Calibration System or 36Fr. blunt-tip bougie. The color of each staple load, number of clips, and suturing time to control staple line bleeding was recorded. The double-wall thickness of the excised specimen was measured at three predetermined locations: Antrum, Midbody, and Fundus. The length and weight of each excised specimen were measured.
Results: We enrolled 53 patients with a mean age of 45.7 years. BMI averaged 41.2 kg/m^2 for men and 41.1 kg/m^2 for women. The mean thicknesses at Antrum, Midbody, and Fundus for male patients were 3.02 mm, 2.50 mm, 1.91 mm, respectively. The mean thicknesses for female patients were 2.80 mm, 2.45 mm, and 1.69 mm, respectively. An average of 11.2 clips and 3.7 minutes of suturing time were used to stop staple line bleeding.
Conclusion: Selecting the correct staple height may reduce the usage of clips and suture in controlling staple line bleeding. There is a potential need for a laparoscopic tool to accurately and objectively measure the thickness of stomach tissue intraoperatively.

A5274
GASTRIC SLEEVE AND FUNDOPLICATION SURGERY IN PATIENTS WITH OBESITY AND GERD
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Introduction: Bariatric surgery in Chile has experienced an exponential increase in recent years, especially the gastric sleeve in patients with a BMI under 35. It's indication is discussed in patients suffering from gastroesophageal reflux disease. Current options are gastric bypass which is not without complications. This study follows a cohort of patients undergoing a novel surgery, which seeks to provide the benefits of both gastric sleeve and antireflux surgery
Objectives: To analyze the short- and long-term results with this new surgical technique.
Methods: Case series of 15 patients undergoing this surgery at our institution. Clinical records were analyzed and statistical analysis was performed using STATA 11. Results: 14 patients were female. Average age of 46.2 years. The preoperative BMI was 33.9. All patients had alterations in pH-metry and manometry preoperatively. The average operative time was 157 minutes, average hospital stay of 5 days and one minor complication was present in a patient that corresponded to a seroma. There was no perioperative mortality. In the postoperative follow-up, average BMI at 6 months was 27.97, which corresponds to an EWL of 66.71%. All patients showed improvements in pH-metry and manometry at 3 months. During long-term follow-up, 6 patients were re-operated. 4

patients regained weight, one patient regained weight and presented GERD, and one patient only presented GERD.
Conclusions: Good results are observed in the short-term follow-up with reflux resolution in pH-metry and manometry, and loss of weight. Six patients in long-term monitoring have required revisional surgery, mostly for weight gain. There are other 2 patients with current surgical indication of surgery. This corresponds to 50% of the patients initially operated.

A5275
A BLINDED, RANDOMIZED SURVEY TO COMPARE GASTRIC DELINEATION ABILITY OF SIZING METHODS DURING SLEEVE GASTRECTOMY
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Background: The difficulties in visually locating the oral-gastric tube, temp probe, or bougie inside a bariatric patient can lead to accidental stapling across these tubes. Surgeons rely on tactile feedback from the grasper or movement of the tubes to locate them. The aim of the study was to compare the gastric delineation ability of a bougie and a novel suction calibration system (SCS).
Methods: Patients were randomly assigned to receive either sizing method in sleeve gastrectomy. An intraoperative picture of the stomach before the first staple firing was captured for each case. Intraoperative pictures of stomachs, which each had the same measured thickness at the pylorus, were selected from each group and placed side-by-side. Five pairs were chosen at random to survey surgeon attendees of IFSO 2014. The participants were asked blindly, "In which of the two images below can you better identify the calibration system along the lesser curvature?"
Results: 273 participants reviewed the blinded survey. By visually inspecting the images, on average, 91.5% (83.22% - 98.25%, $p < 0.001$) of the participants were able to better identify lesser curvature and the outline of the staple placement with SCS.
Conclusion: Direct visualization of the device makes the stapling process easier, safer, and may reduce inadvertent stapling of intraluminal tubes. The location of the bougie was difficult to ascertain whereas the SCS improved delineation significantly, allowing for proper stapler placement.

A5276
INTERACTIONS BETWEEN IRON, VITAMIN B12, FOLIC ACID AND PPI MEDICATION AFTER SLEEVE GASTRECTOMY
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Background: Malabsorption and micronutrient deficiencies are known problems after bariatric surgery. Therefore, supplementation and regular controls are inevitable. Iron (Fe^{2+}), vitamin B12 and folic acid levels, which may be disrupted after bariatric procedures, are suspected to depend on gastric pH levels.
Objectives: To determine the effect of proton pump inhibitors (PPI) on Fe^{2+}, vitamin B12 and folic acid levels after sleeve gastrectomy (SG).
Setting: Non-University General Hospital Methods: All patients who underwent SG between 2008 and 2013 were enrolled in our follow-up program. The patients were examined preoperatively and then four times during the first year. Fe^{2+} metabolism and weight parameters were monitored. All the patients received one multivitamin tablet daily. All the parameters were then analyzed for associations with PPI intake.
Results: Data of 385 out of 400 (96.2%) patients were analyzed after 1 year of follow-up (3.8% lost to follow-up). Thirty-nine (10.1%) patients took PPI for at least three months during the first year. The Fe^{2+} levels were significantly lower ($p = 0.002$) in the PPI group in comparison to the non-PPI group. Vitamin B12 levels also showed significant differences ($p= 0.04$), while there

were no significant differences for folic acid (p=0.3).
Conclusions: Our data show that higher gastric pH levels caused by PPI intake negatively influence Fe^{2+} absorption. Therefore, Fe^{2+} metabolism parameters and red blood cell account as well as vitamin B12 and folic acid should be monitored, especially in patients receiving PPI therapy after SG.

A5277

STAPLE LINE DEHISCENCE AFTER SLEEVE GASTRECTOMY: STILL A SURGICAL DOMAIN?

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Introduction: Laparoscopic sleeve gastrectomy (LSG) is an accepted and popular bariatric procedure due to its clinical efficacy and safety. However, staple line dehiscence remains a dreaded complication with possibly deathly outcome. Unfortunately there is no clear guideline for the therapeutic management to date. This study reports on staple line dehiscence after sleeve gastrectomy, its treatment options, and outcome.
Material and methods: This study represents a retrospective, single-center analyses of 441 sleeve gastrectomies performed between 2010 and 2015. Demographic characteristics, diagnostics, treatment modalities and their outcome, quality of life (BAROS-Score), re-admissions and length of hospitalization were reviewed.
Results: A total of 4 (0.9%) staple line leakages could be detected in our patients. 2 sleeve gastrectomies were performed as laparoscopic surgery, 1 as single incision laparoscopic surgery and 1 as open surgery. Staple line dehiscence was diagnosed at a median of 12 days postoperatively. Computed tomography showed the highest detection rate. 3 (75%) leaks could be found at the gastroesophageal junction and 1 (25%) at the antrum. According to Clavien-Dindo all leakages are classified as 3b. In 3 (75%) cases a surgical and endoscopic approach was combined, 1 case was treated only by laparoscopic surgery in terms of washout and drainage. Only 1 (25%) dehiscence healed after the first intervention. The average length of hospital stay was 44,25 (min 7/max 112) days. No leakage associated mortality occurred.
Conclusion: As a consequence of sleeve gastrectomy´s popularity bariatric surgeons experience more frequently the challenging management of leakages. The associated high morbidity or even mortality can be positively influenced by fast diagnosis and treatment. Endoscopic therapy concepts receive increasingly attention.

A5278

DOES LAPAROSCOPIC SLEEVE GASTRECTOMY IN CONJUNCTION WITH AGGRESSIVE HIATAL HERNIA REPAIR IMPROVE POSTOPERATIVE GASTROESOPHAGEAL REFLUX DISEASE SYMPTOMS?

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Background: Obesity is known to be an independent risk factor for gastroesophageal reflux disease (GERD), as well as a contributing cause of hiatal hernias (HH). Laparoscopic sleeve gastrectomy (LSG) is considered a viable surgical option for weight loss; however, some surgeons suggest avoiding this procedure in patients with preexisting gastroesophageal reflux disease symptoms (GERDS) because of concern for worsening of these symptoms. The effect of LSG on GERDS is unclear, with studies reporting conflicting results. The objective of this study was to evaluate the effect of LSG and aggressive diagnosis and repair of HH on obese patients with and without preoperative GERDS.
Methods: Patients who underwent LSG from December 2010 through January 2013 by a single surgeon at Akron General Medical Center, a Metabolic and Bariatric Surgery

Accreditation and Quality Improvement Program Center of Excellence, were considered for inclusion in this retrospective study. All patients completed a preoperative standardized GERDS questionnaire, and underwent an upper gastrointestinal radiologic study (UGI) and upper endoscopy (EGD). At surgery the esophageal hiatus was also carefully inspected for a HH. All preoperatively and intraoperatively diagnosed HH were repaired with a standard technique. Pertinent data collected included presence or absence of preoperative GERDS, presence or absence of preoperative HH, HHR performed during surgical procedure, and presence or absence of postoperative GERDS at subsequent follow-up appointments. Statistical analysis was then performed.
Results: A total of 239 patients underwent LSG during the specified timeframe, and 228 patients were included after exclusion criteria. Of these 228 patients, 132 (58%) had documented preoperative GERDS. Of these 132 patients, 73 (55%) had HH diagnosed preoperatively and an additional 30 (23%) HH were diagnosed intra-operatively. A total of 103/132 (78%) patients with preoperative GERDS were found to have a HH. All patients with preexisting GERDS with preoperatively or intraoperatively diagnosed HH were repaired. At follow-up, 31 (23%) patients in this group had residual GERDS, while 101(77%) patients had resolution of symptoms. Of those 96 (42%) patients without preoperative GERDS, 26 (27%) had a HH diagnosed preoperatively and an additional 29 (30%) HH were diagnosed intra-operatively for a total of 55/96 (57%) HH in this group. All preoperative or intraoperatively diagnosed HH were repaired. Twenty (21%) patients had postoperative GERDS, including 11 who underwent HHR. Based on this information, the presence of preoperative GERDS was associated with a preoperative HH (OR 3.3312, 95% CI:1.8914-5.8669, p<.0001). In those patients with preoperative GERDS, the risk of having postoperative GERDS was decreased when a LSG in conjunction with HHR was performed (OR 0.3204, 95% CI:0.1314-0.7812, p=0.010084). Finally, the risk of developing postoperative GERDS in patients without preoperative GERDS was unrelated to sleeve/HHR (OR 0.8889, 95% CI:0.3297-2.3962, p=0.823063).
Conclusion: In patients with preoperative GERDS, performing LSG in conjunction with HHR results in a significant resolution of GERDS. It is reasonable to offer LSG to patients with GERDS if HH are aggressively sought and repaired. Repairing HH during sleeve gastrectomy in patients without preoperative GERDS may not increase or decrease the likelihood of post-operative GERD symptoms and is probably not necessary.

A5279

BETTER PATIENT SELECTION DECREASES THE COMPLICATION RATE FOR A ONE-STAGE CONVERSION OF FAILED GASTRIC BANDING TO A LAPAROSCOPIC SLEEVE GASTRECTOMY

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Background: Revision surgery of the laparoscopic adjustable gastric banding (LAGB) is often necessary because of its high failure rate. The objective of this study was to demonstrate that better patient selection, when converting a failed LAGB to a laparoscopic sleeve gastrectomy (LSG) as a one-stage revision procedure, is safe, feasible and improves the complication rate.
Methods: A retrospective chart review was performed on patients who underwent a one-stage conversion of failed gastric banding (without band complication) to a LSG. Collected data included age, sex, body mass index (BMI), intraoperative complications, length of stay, and postoperative complications. The results were compared to a previous study of 90 cases of LSG as a revision procedure for failed LAGB.
Results: There were 75 patients in the current study, 63 women and 12 men, aged 25 to 63 (average 44), with a mean BMI of 48 Kg/m2 (31 to 57). 70 patients (93.3%) were operated for insufficient weight loss and 5 patients (6.7%) for intolerance to the band. In our previous study, 35 patients (39%) were operated for slippage, erosion or obstruction. Average hospitalisation time was 1.9 days (1 to 17). Only 2 patients

(2.7%) had a postoperative complication (gastric hematoma and severe dysphagia). None of the patients had a gastric leak (5.5% in previous study).
Conclusion: Rigorous patient selection, without band complications such as: slippage, erosion, or obstruction, allows for a significantly lower rate of operative complications for a one-stage conversion of failed gastric banding to a LSG.

A5280
EVALUATION OF SAFETY AND EFFECTIVENESS OF A NOVEL SUCTION CALIBRATION SYSTEM (SCS) COMPARED TO A BOUGIE IN LAPAROSCOPIC SLEEVE GASTRECTOMY (LSG)
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Background: LSG consists of three steps: decompression, sleeve sizing, and leak testing. Using a different intraluminal tube for each step interrupts OR workflow and increases clinical risks. The aim of this study was to evaluate a SCS that integrates said steps in LSG compared to a bougie.
Methods: Enrolled patients were randomly assigned to receive either the 36 Fr. SCS or bougie. Adenosine triphosphate (ATP) swab testing was performed prior to time-out. The insertion and removal times of tubes were recorded. Intraoperative pictures of stomachs before the first staple firing were recorded. The frequency of tube movements was documented.
Results: Enrollment included 41 women and 11 men with mean age of 45.7 years and mean BMI of 41.1 kg/m^2. ATP results identified 10 times more microbial activity on reusable bougie compared to SCS ($p < 0.0001$). With SCS, median total operating time decreased 39.8% (1960 sec vs. 1180.5 sec, $p < 0.001$); decompression time decreased 93.0% (301 sec vs. 21 sec, $p < 0.001$); greater curvature mobilization time decreased 14.1% (559 sec vs. 480 sec, $p = 0.01$). The median number of tube movements was 8 for the bougie versus 4 for SCS ($p < 0.0001$).
Conclusion: SCS integrates multiple steps in one device with controlled suction capability and significantly reduces operating time during LSG. Reduction in tube movement may potentially decrease the chance of risk in esophageal perforation.

A5281
EARLY EFFECTS OF SLEEVE GASTRECTOMY ON RHEUMATOID ARTHRITIS
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Introduction: The significant impact of obesity on the musculoskeletal system is associated with osteoarthritis (OA). Rheumatoid arthritis (RA) is an autoimmune disease that typically affects the small joints. A low grade inflammatory state related to obesity may play a role in OA and are also culprits in RA. There is some evidence that sleeve gastrectomy ameliorates chronic inflammation related to obesity through weight loss. It has been reported that in patients with RA who underwent bariatric surgery, significant weight loss was associated with improvement in disease activity, reductions in medication use, and a reduction in inflammatory markers. This time, we report the early effects of sleeve gastrectomy on a morbidly obese japanese female who had severe RA.
Presentation of case: We report a 34 year old female with a BMI of 44 kg/m^2(103 kg), type 2 diabetes, hypertension, and 10- year-long RA. She had pain in her feet, hip, knees, back, and hands and could not endure physical therapy and exercise due to pain. She was taking three kinds of DMARDS (MTX, sulfasalazine, and bucillamine), and two kinds of NSAIDS to control her symptoms. Her symptoms related to RA improved greatly within a week after sleeve gastrectomy before significant weight loss occured. All of medications she took before surgery for RA became unnecessary after surgery except for bucillamine. Matrix Metalloproteinase-3(MMP-3), monitoring her disease activity, showed a reduction from 285.5 to 85.3 within a month after surgery with -8 kg

body weight change. Leptin and hs-CRP also decreased. She has been in good condition for 3 months after surgery. The other comorbidities were improved after surgery.
Discussion: The pathophysiology of obesity-related OA and RA is multi-factorial. Sleeve gastrectomy appears to contribute to significant improvement of the joint pains and the inflammatory markers related to RA, which happened soon after surgery.
Conclusion: Obesity might contribute to progression of RA. Sleeve gastrectomy can be a good treatment option for RA with morbid obesity.

A5282
ADAPTATION OF ROBOTIC SLEEVE GASTRECTOMY DURING BARIATRIC SURGICAL FELLOWSHIP
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Introduction: Laparoscopic Sleeve Gastrectomy (LSG) quickly gained acceptance in the treatment of morbid obesity. Furthermore indications and applications for robotic bariatric surgery continue to evolve. Little data exists about the clinical outcomes of bariatric surgery fellowship programs implementing robotic surgery. A retrospective review was completed to determine the feasibility, safety and outcomes of patients undergoing robotic sleeve gastrectomy (RSG) in an advanced laparoscopic and bariatric accredited fellowship training program.
Methods: An IRB approved comparison of consecutive patients undergoing RSG versus LSG was performed. Data was collected in each group for age, sex, type of procedure, concomitant procedure, BMI, blood loss, intraoperative complications, postoperative complications, 6, 12 and 18 month percent excess body weight loss (EBWL). Patients were excluded if they had a BMI greater than or equal to 65 kg/m^2. Initially the attending surgeon incorporated RSG for weight loss during the first 10 procedures and thereafter the trainee performed as surgeon at the robotic console. Statistical analysis was performed using a T-test with p value < 0.05 as significant.
Results: 63 patients underwent RSG and 70 underwent LSG. Average age and female to male ratio was 49 vs. 51.4 years and 50:13 vs. 54:16 in the RSG and LSG groups respectively. Preoperative BMI was 44.3 in RSG vs. 46.4 in LSG patients. Length of stay was 1.2 days versus 1.6 days in RSG and LSG groups respectively. Estimated blood loss was 60.7ml in LSG versus 58.8 in RSG. The 6, 12 and 18 month EBWL was 52.9%, 59.6% and 59.6% in RSG versus 52.4%, 57.6% and 57.4% in LSG. Intraoperative complications included one patient during RSG with esophageal injury during boogie placement and one patient during LSG with a large liver laceration. Two patients undergoing LSG developed a stricture at the incisura versus one undergoing RSG. One anastomotic leak was noted in the LSG group versus zero in the RSG group. A single mortality occurred in the RSG cohort due to a myocardial infarction on postoperative day 3, with no mortalities in the LSG group. In 28 trainee performed cases, excluding the ten cases where the attending performed the procedure, and excluding cases where a concomitant procedure was performed; the first 14 of the 28 cases had an average time of 189 minutes versus 171 minutes ($p=0.03$) in the last 14 cases.
Conclusions: Implementing RSG into bariatric surgical fellowship training appears safe, feasible and successful with equivalent outcomes. Robotic sleeve gastrectomy was associated with few perioperative complications. Patients who underwent RSG had equivalent weight loss when compared with LSG. There may be a learning curve around 15 cases for RSG during adaptation of robotic training as shown by decreased operative times after an initial 15 cases. As robotic technology improves, robotic training should be considered during bariatric surgical fellowship programs.

A5283
INFLUENCE OF BARIATRIC SURGERY ON PREGNANCY
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Background: Obese women are known to suffer from gestational pathologies like gestational diabetes, miscarriage and as well as fetal complications such as high birth weight and larger birth size, which might lead to delivery difficulties.
Setting: Non-University General Hospital
Materials and Methods: During a period of 8 years all patients, who gave birth to at least one child pre and post sleeve gastrectomy, were included into this study. Data concerning weight parameters, obesity associated comorbidities as well as gestational complications and birth related parameters were recorded prospectively and analyzed retrospectively.
Results: A total of 16 patients could be identified to meet the criteria to be included in this study. Pre OP BMI showed a mean value of 47.43 kg/m^2 while the mean BMI post OP was 31.19 kg/m^2 ($p<0.001$). Two patients showed pathologic blood glucose levels preoperatively, while there were no pathologies concerning diabetes postoperatively. Babies showed a mean birth weight of 3827g and a mean size of 52.5cm preoperatively, while postoperative values where 3341g ($p=0.02$) and 50.3cm ($p=0.03$). Two patients showed delayed birth pre OP, while there were no difficulties post OP. Preoperatively a total of 20 miscarriages was recorded, while postoperatively only three miscarriages could be observed ($p=0.02$).
Conclusion: Bariatric surgery shows direct effects on pregnancy and gestational pathologies as well as on incidence of miscarriage. For obese patients with unfulfilled desire to have child, sleeve gastrectomy might be a considerable option.

A5284

ROUTINE INTRAOPERATIVE STAPLE LINE TESTING AND POSTOPERATIVE UPPER GASTROINTESTINAL STUDIES ARE NOT NECESSARY: A COMMUNITY-BASED SURGEON'S INITIAL EXPERIENCE

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Introduction: Laparoscopic Sleeve Gastrectomy (LSG) is emerging as a safe and durable bariatric surgical option with proven weight loss outcomes and comorbidities resolution. It is a common practice to routinely perform intraoperative staple line tests for integrity and postoperative Upper Gastrointestinal (UGI) studies to screen for technical complications such as leak, obstruction or stenosis. However, these tests increase time and costs of the procedure and hospital stay.
Objective: To determine if routine intraoperative and postoperative testing is cost effective in a high volume single surgeon community practice. We tested the hypothesis that these routine practices after LSG result in increased length and cost of stay, without impacting patient outcomes.
Methods: A retrospective chart review of patients that underwent LSG by a single surgeon at two community hospitals in Memphis, TN from April 2008 to March 2015 was performed. Two groups were identified: those who underwent routine UGI study (UGI) and those who did not (non-UGI). Characteristics evaluated included age, sex, race, preoperative BMI, length of stay, cost of stay per day, complication and readmission rates.
Results: A total of 565 patients were included, 210 in the UGI and 355 in the non-UGI group. Intraoperative staple line test was not performed in any patient. There were no postoperative leaks or bleeding in either group. There were 4 re-hospitalizations, none of which were related to the staple line. The cost of an UGI study at these institutions was $1,080 and on average delayed discharge for 3 hours. Also, intraoperative testing takes an average of 10 minutes to perform, resulting in prolonged OR time, anesthesia time and hospital charges.
Conclusions: After LSG, routine use of intraoperative testing and postoperative UGI studies is not cost effective. Furthermore, surgeon experience and visual evaluation are sufficient to ensure adequate staple line

integrity. We recommend that these studies only be performed when clinically indicated.

A5285

IDIOPATHIC COMPLETE HEART BLOCK IN A PATIENT AFTER UNEVENTFUL LAPAROSCOPIC SLEEVE GASTRECTOMY (LSG)

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Introduction: Laparoscopic Sleeve Gastrectomy (LSG) is a widely acccepted weight loss procedure in the United States. The greater curvature is mobilized and then 70% of the stomach is resected leaving a tubular stomach which is supplied by the left and right gastric vessels. The vagus nerve is preserved. An EGD is performed and usually on postoperative day 1, an upper gastrointestinal study is done using gastrograffin to rule out staple line leakage. A bariatric clear liquid diet is subsequently initiated.

Case Report: Patient CD is 45 year old female with history of Morbid Obesity, hypothyroidism and gestational diabetes. Her vitals on admission were as follows: Blood pressure 118/96 Heart rate 87 NSR, Ht: 5'3" Wt: 272, BMI: 48.2. Patient underwent an uneventful laparoscopic sleeve gastrectomy with hiatal hernia repair. She had an intra operative EGD which revealed no leakage or bleeding. Postoperatively, in the recovery patient complained of nausea, and pain in the epigastric region accompanied by waves of peristalsis and the sensation of feeling "drowsy". At this point, cardiac monitor revealed a 1st degree heart block which progressed to 3rd degree or complete heart block i.e disassociation of atrial (p wave) and ventricular (QRS) rhythm. The episodes were self-limited and patient remained hemodynamically stable at the time of the episodes with a normal BP and HR. She was admitted to the telemetry floor for observation.

Hospital Course: A medical and cardiology consultation were obtained. On POD #1 A limited UGI series revealed no leak and a small gastric pouch. A bariatric clear liquid diet was started. Over the next 24 hours patient experienced multiple episodes of complete heart block lasting from 1.8s to 5.8s. At the bedside, patient is witnessed to hold her breath and bear down in a reaction which mimics a valsalva maneuver when she experienced pain. She described a peristaltic wave of gas pain moving from the right to the left of the abdomen when the heart block was noted on the monitor. There was no association with swallowing and the heart block noted in our patient.She remained hemodynamically stable and was maintained on IV hydration. CBC, electrolytes and TSH were all within normal limits. She was treated with IV Morphine for pain and Zofran for nausea. On POD #2, patient passed flatus. Subsequently, she was observed for an additional 24 hours after the last episode of heart block and discharged home on POD #3. She did not experience any more episodes. She will be following up with her cardiologist for outpatient Holter monitoring and possibly EP studies.

Discussion: Vasovagal arrhythmias have been well documented in patients with primary cardiac disorders such as hypertensive or ischemic heart disease, congestive heart failure or after cardiac surgery. Swallow syncope is a rare entity which has been described in multiple case reports describing episodes of swallow syncope after a LSG. AV block has been noted in many patients with esophageal disorders. Isolated case reports have described vasovagal syncopal associated with adjustable gastric banding placed using pars flaccida technique. There also have been reports of complete heart block due to a large hiatal hernia. Swallow syncope is defined as dizziness, lightheadedness, and confusion, during or after deglutition with evidence of cardiac arrhythmia. Most noncardiac AV blocks originate from the esophagus. The presumed mechanism of action of is the intense vagal stimulation leading to sinus node slowing, followed by arrest, resulting in transient syncopal episodes. There was no association of this patient's heart block with swallowing and there was no reflux noted on UGI series. However, the patient did describe holding her breath in preparation for the peristaltic "wave of pain" she experienced when she felt nauseous. In addition, she had a small hiatal hernia which was repaired using a single 2-0 silk stitch. It is possible that the patient had transient pnemomediastinum cuased by dissection of the hiatus which postoperatively augmented the

vagal stimulation. Another possible mechanism could be Sleeve gastrectomy causing damage to the vagus nerve resulting in gastroparesis and esophageal spasm and a dilated esophagus which would compress and stimulate the vagus nerve. To the best of our knowledge, this is only case report in the literature to report a complete heart block in a healthy patient after laparoscopic sleeve gastrectomy not associated with swallowing. Patients with heart block must be monitored on a telemetry floor for hemodynamic stability. All patients should undergo a work-up looking for medical causes, electrolyte disturbances and other cardiac conduction abnormalities prior to assuming a pneumomediastinum or vasovagal etiology as the cause. Transcutaneous pacing pads and atropine should be placed at the bedside used to pace the heart as needed temporarily and permanent pacemaker (PPM) should be considered if the rhythm is not restored. An Electro Physiological study can be considered to rule out an affected electrical conduction.