

BARIATRIC MEDICINE ALERT

A monthly survey of developments in bariatric medicine

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Bowel Obstruction after Open and Laparoscopic Gastric Bypass Surgery

ABSTRACT & COMMENTARY

By Helen Sohn, MD

Assistant Professor of Surgery, Department of Surgery, USC

Dr. Sohn reports no financial relationship relevant to this field of study.

This article was peer reviewed by Peter Crookes, MD, FACS

Synopsis: *An unanticipated high incidence of bowel obstruction was found after laparoscopic gastric bypass surgery. An open approach may be a reasonable option for management of recurrent episodes of bowel obstruction after laparoscopy.*

Source: Capella RF, et al. Bowel obstruction after open and laparoscopic gastric bypass surgery. *JAm Coll Surg.* 2006;203:328-335.

BOWEL OBSTRUCTION IS INCREASINGLY RECOGNIZED AS AN important complication after gastric bypass. This study analyzed late bowel obstruction after open and laparoscopic gastric bypass surgery. The medical records of 1378 patients who had proximal gastric bypass during the years 2002 and 2003 were evaluated at a large bariatric center for readmission with bowel obstruction requiring operations. In the study group, 697 patients underwent a laparoscopic approach and 735 had an open approach to gastric bypass. Patients had a minimum follow-up of 18 months.

In the laparoscopic group, 68 of the 697 patients were readmitted for bowel obstruction requiring operations, for an incidence of 9.7%. There were 14 additional recurrent obstructions, for a total of 82 operations. Of the 68 patients requiring reoperations, 8 (4.4%) required bowel resection and 8 (11.7%) had conversion to an open approach. Bowel resections were performed in 2 of the 3 patients with a second episode of bowel obstruction. The average time intervals between the primary operation in 2002 and 2003 and the first episode of obstruction were 511 and 385 days, respectively. There were no readmissions requiring operations for late bowel obstruction in the open gastric bypass group.

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Richard Peterson, MD, MPH

Clinical Instructor of Surgery, Department of Surgery, University of Southern California (USC)-Los Angeles

Helen Sohn, MD

Assistant Professor of Surgery, Department of Surgery, University of Southern California (USC)-Los Angeles

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We found an unanticipated high incidence of bowel obstruction after laparoscopic gastric bypass surgery. There were no hospital admissions for bowel obstruction requiring operations in the open gastric bypass group. Lack of adhesions and the resulting free displacement of small bowel after laparoscopy appear to be the cause of this complication. Open gastric bypass surgery produces thin, diffuse upper abdominal adhesions that may then stabilize the bowel and prevent internal hernias and bowel obstruction. An open approach may be a reasonable option for management of recurrent episodes of bowel obstruction after laparoscopy. (*J Am Coll Surg*. 2006;203:328-335).

This is a retrospective review of all patients who underwent gastric bypass surgery for morbid obesity between 2002 and 2003 at a single institution to identify readmissions for bowel obstruction requiring operative therapy. This was done to study the incidence, timing, and presentation of operative bowel obstruction following open and laparoscopic gastric bypass surgery in order to better understand this common complication.

The surgery performed was Roux-en-Y gastric bypass, where the distal jejunal limb was brought up retrocolic, creating mesocolic, mesenteric, and Petersen defects. The laparoscopic surgeon chose to close the mesocolic defect alone, and the open surgeon chose to close the mesenteric defect alone.

Among the patients who underwent laparoscopic surgery, 9.7% were readmitted with bowel obstruction requiring operative therapy. Findings at operations were internal hernia (60%), adhesive band (21%), and incisional hernia (1.4%). Time interval between the primary operation and the obstruction ranged from 6 to 1180 days. There were no readmissions for operative bowel obstruction in the open group.

■ **COMMENTARY**

This study suggests that in this series of gastric bypass patients, bowel obstruction requiring operative therapy occurs more frequently after laparoscopic surgery compared to open surgery. Capella and colleagues speculate that this is due to lack of adhesions formed during laparoscopic surgery, allowing free displacement of small bowel after surgery.

If what they say is true, it seems that what is considered a benefit of laparoscopic surgery, lack of adhesion formation, has an adverse affect, in this case, by promoting herniation of bowel through defects created as part of the operation. These defects that are usually closed off by adhesions in open cases stay open even with suture closure in laparoscopic cases. And bowel loops that normally adhere together loosely in open cases move freely after laparoscopic cases. Another contributing factor may be that the defects get larger as patients lose weight as a consequence of their operation, and this may promote easier herniation of bowel.

When considering all the possible explanations for the result of this study, we must take into consideration the limitation of this study. This is not a prospective study. Only patients that were admitted to the same institution with bowel obstruction requiring operative therapy were included in this study. There is no way of knowing how many more patients with bowel obstruction in either laparoscopic or open group presented to another institution.

Bowel obstruction after any abdominal operation is unavoidable. Adhesions are the main reason for development of bowel obstruction in most cases, but it seems that in this special growing population receiving laparoscopic gastric bypass, it is the opposite: the lack of adhesions coupled with iatrogenic internal defects may be more frequently associated with bowel obstruction, and more of these patients may need operative therapy. Does this mean that

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SENIOR VICE PRESIDENT/GROUP PUBLISHER:
Brenda Mooney.
Associate Publisher: Lee Landenberger.
MANAGING EDITOR: Leslie Hamlin.
MARKETING PRODUCT MANAGER:
Shawn DeMario

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Questions & Comments
<p style="text-align: center;">Leslie Hamlin, Managing Editor, at (404) 262-5416 or e-mail at leslie.hamlin@ahcmedia.com between 8:30 a.m. and 4:30 p.m. ET, Monday-Friday.</p>



laparoscopic gastric bypass should be avoided? I think this is a small consequence compared to the numerous benefits afforded by laparoscopic surgery in these high-risk patients. As noted by Capella et al, this study raises more questions than there are answers for, and additional studies are necessary to continue to strive towards minimizing operative morbidities. ■

Outcomes after Open vs Laparoscopic Gastric Bypass

ABSTRACT & COMMENTARY

By Richard Peterson, MD, MPH

Clinical Instructor of Surgery, Department of Surgery, USC

Dr. Peterson reports no financial relationship relevant to this field of study.

This article was peer reviewed by Peter Crookes, MD, FACS

Synopsis: LGB is associated with significantly lower mean hospital stay and with reduced morbidity and mortality as compared with OGB.

Source: Ricciardi R, et al. Outcomes after open versus laparoscopic gastric bypass. *Surg Laparosc Endosc Percutan Tech.* 2006;16:317-320.

IN EXPERT HANDS, LAPAROSCOPIC GASTRIC BYPASS (LGB) is associated with reduced morbidity and mortality compared with open bariatric surgery. The purpose of our study was to determine whether or not the results of LGB have been realized in the general US population. We used data from the nationwide inpatient sample to define differences in outcomes after LGB versus open gastric bypass (OGB). We calculated hospital stay, in-hospital mortality, and major complications for both OGB and LGB. We noted a total of 26,940 gastric bypass procedures: LGB was coded in 16.3% and OGB in 83.7%. The mean hospital stay, mortality, wound, gastrointestinal, pulmonary, and cardiovascular complications were significantly lower after LGB ($P < 0.001$). After we adjusted for covariates, hospital stay, pulmonary morbidity, and mortality remained significantly lower after LGB ($P < 0.001$). In conclusion, LGB is associated with significantly lower mean hospital stay and with reduced morbidity and mortality as compared with OGB.

Ricciardi and colleagues presented a very nice paper comparing the results of laparoscopic gastric

bypass (LGB) versus open gastric bypass (OGB). The aim of their study was to evaluate data from centers that were not primarily highly-experienced minimally invasive surgery programs. They wanted to determine whether LGB versus OGB had comparable beneficial results in the general US population. The data collected was obtained from the nationwide inpatient sample (NIS is the largest source of all payer discharge information in the United States, which includes roughly a 20% stratified sample of US community hospitals).

In their analysis, Ricciardi et al found that similar to many studies previously published (again their rightful contention is that these studies came from highly specialized centers), the outcomes of LGB were superior to that of OGB. Their patient sample included 26,940 patients in a 2-year period (2001-2002) who underwent either LGB or OGB. Consistent across their data set was a demographic majority of female patients (83%). Of all the patients identified 16.3% had a LGB.

The striking points of their study showed significant reduction in several outcomes in the LGB group versus OGB. Mortality for LGB versus OGB was 0.27% and 0.81%, respectively ($P < 0.0001$). Additionally, pulmonary complications, cardiovascular complications, and length of stay were also significantly improved in the LGB group.

■ COMMENTARY

The importance of this study is in its design. Ricciardi et al have reproduced and analyzed data that has implications to the general population. Most of the reports to date have been from large specialty referral centers (LSRC). However, with the increasing number of LGB procedures being performed across the country and expanding to hospitals outside of the LSRC, it is important to identify the impact LGB has on patient outcomes. It is also important to highlight that LGB should be performed by a surgeon with advanced laparoscopic skills and training in bariatric surgery. Surgical societies and insurance companies have now adopted centers of excellence for bariatric surgery for both improved outcomes and as a means for reimbursement for the procedure. The outcomes of the LGB continue to be a driving force in this regard. Data from studies such as this will continue to support the importance of LGB as a superior surgical technique for morbid obesity. ■

Diabetes Resolution

ABSTRACT & COMMENTARY

By Peter Crookes, MD, FACS

Associate Professor of Surgery, Department of Surgery, USC

Dr. Crookes reports no financial relationship relevant to this field of study.

This article was peer reviewed by Helen Sohn, MD

Synopsis: *This study shows that bypassing a short segment of proximal intestine directly ameliorates type 2 diabetes, independently of effects on food intake, body weight, malabsorption, or nutrient delivery to the hindgut.*

Source: Rubino F, et al. The mechanism of diabetes control after gastrointestinal bypass surgery reveals a role of the proximal small intestine in the pathophysiology of type 2 diabetes. *Ann Surg.* 2006;244:741-749.

DIABETIC RATS WERE SUBJECTED TO 3 DIFFERING operative procedures in an attempt to isolate the gastrointestinal construction which is responsible for the resolution of diabetes. Rubino and colleagues reported that bypassing the duodenum and proximal jejunum is key in improving glucose tolerance in this species of diabetic rats. In order to reduce serum cholesterol, it was necessary to bypass the terminal ileum. Rubino et al discuss the relevance of these results to the current management of Type 2 diabetes mellitus.

■ COMMENTARY

The discovery of insulin in 1921 by Banting and Best represents one of the great landmark medical advances in the 20th century, and the hope it offered to patients and their families was so far in advance of what was then available that the discoverers were awarded the Nobel Prize in 1923. In the past 80 years, diabetes mellitus has become many times more common, now affecting over 20 million persons in the USA,¹ though it commonly presents in a less acute form in middle aged and older adults. However, the cumulative morbidity and mortality from the condition is enormous, such that it is estimated that 10 cents out of every dollar spent on health care in the United States is spent on diabetes and its sequelae.²

In the past decade, a new treatment has emerged which has equally profound repercussions for the treatment of diabetes, though no one has yet been awarded a Nobel Prize for discovering it: one of the serendipitous benefits of bariatric surgery, and

specifically Gastric Bypass, is the capacity to cure diabetes mellitus.³ And by cure, I mean normalization of blood sugars and glycated hemoglobin (HbA1c) while being able to discontinue hypoglycemic medications and insulin. In the bariatric population, it is fairly clear that type 2 Diabetes Mellitus can be cured in about 70-80% of cases, and the care substantially simplified in the remainder: it has emerged that the longer the disease is present preoperatively, the lower the chances of success are, and that purely restrictive operations are less efficacious than bypass operations such as gastric bypass and biliopancreatic diversion.⁴⁻⁸

Many, perhaps the majority, of type 2 diabetic patients are obese.⁹ A smaller fraction is morbidly obese, and typically about 20-25% of patients presenting for bariatric surgery are diabetic. The ability to cure the majority of these patients is a very dramatic finding and one whose implications have yet to be realized by the endocrinological community. The most striking element of this phenomenon is that glucose tolerance after gastric bypass is frequently normalized long before any significant weight loss has occurred.

It is characteristic of many medical advances that there is pressure to put them into practice before they are understood. The introduction of anesthesia, antiseptics, blood transfusion, and the laparoscopic revolution in surgery, all demonstrate this pattern. Bariatric surgery is no exception. It is only recently that workers have begun to dissect out the elements of the common clinically available operations and attempt to discover what does what.

This paper by Rubino et al from Strasbourg, and collaborators from Rome and Seattle, marks a major step in understanding. They begin by reviewing the 2 major theories which explain the mode of action of gastric bypass: in the hindgut theory, it is postulated that the arrival of undigested food stimulates the release of one or more hormones from the ileum, the most promising of which are GLP-1 and Peptide YY, which have the capacity to improve glucose tolerance. GLP-1 is known to reduce appetite, to delay gastric emptying, and to reduce apoptosis in beta cells of the pancreatic islets. In contrast, a foregut theory hypothesizes that glucose tolerance is improved by diverting ingested nutrients away from the duodenum and proximal jejunum through the action of a hormonal mediator as yet uncharacterized.

Using a species of diabetic (Goto-Kakizaki) rats, Rubino et al performed 2 different operative procedures, one of which resembles the diversion pro-

duced by a gastric bypass, though not restricting the size of the stomach (duodenal-jejunal bypass, or DJB), and the second being a simple gastrojejunostomy (GJ), with the stomach joined to a loop of jejunum in the same location as that of a typical gastric bypass. The essential difference between these procedures is that the former diverted food away from the foregut, but the latter did not. In both operative procedures, undigested food had the same capacity to reach the mid jejunum and ileum. A third procedure, ileal bypass, was also studied to observe the effect on lipid metabolism: the ileum was divided and the proximal portion anastomosed to the right colon to bypass the terminal ileum.

The initial end points were body weight and measures of glucose tolerance. All animals initially lost weight and had reduced oral intake. Weight loss was similar for DJB and GJ rats. However, glucose tolerance markedly improved, as measured by the Oral Glucose Tolerance Test (Area under the curve and 30 minute and 60 minute peak for the DJB rats, but not for the GJ group). To study the phenomenon further, the rats then underwent a form of reversal of their procedure after four weeks. In the GJ group, the duodenum was divided, preventing food from passing into the duodenum and proximal jejunum: in this group, the glucose tolerance improved similarly to the DJB group. Rubino et al attempted to perform a gastrojejunostomy to restore a duodenal passage in the DJB rats but operative difficulty caused most of the rats to succumb. However, in the 2 animals who survived, glucose tolerance tests were markedly worsened.

In the rats subjected to the gastric procedures (DJB and GJ), there was little alteration in lipid metabolism. Only the group with ileal bypass had significant reduction in serum cholesterol.

This paper, therefore, provides strong evidence that passage of food through the duodenum and/or proximal jejunum is associated with a factor which worsens glucose tolerance and that a surgical reconstruction which diverts food away from this portion of the GI tract improves glucose tolerance. This factor has yet to be identified. Nevertheless, bypass of the foregut appears to be of critical importance compared with other operations producing similar weight loss.

The implications of this study are far reaching. We have already seen how the identification of GLP-1 as a mediator of improved glucose control has led to the development of synthetic analogues such as exenatide (Byetta), which was recently approved by

the FDA as adjunctive therapy in the treatment of Type 2 diabetes. Experiments such as these reported by Rubino et al have the potential to uncouple the individual elements of the combined package and to separate the effect of surgery on body weight, glucose tolerance, and lipid metabolism. Not only may this lead to the development of novel therapeutic agents, but may also enable the development of operations which can be tailored to diabetics who are not morbidly obese, or to patients with hyperlipidemia who are not diabetic. ■

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Annual ASBS Revisions Course

SPECIAL FEATURE

By Amir Mehran, MD, FACS

Assistant Clinical Professor of Surgery, Director of Bariatric Surgery, UCLA

Dr. Mehran reports no financial relationships relevant to this field of study.

This article was peer reviewed by Peter Crookes, MD, FACS

THE ANNUAL ASBS "APPROACHES TO BARIATRIC Revision Surgery" was held at the San Francisco Hyatt on November 10 and 11, 2006. Sponsored primarily by Ethicon Endo-Surgery, it boasted well

known faculty members who discussed various aspects of revisional bariatric surgery. The course was primarily geared towards experienced bariatric surgeons who, in turn, used this opportunity to discuss some of their upcoming difficult revisional cases.

The first day began with Dr. Jeff Allen discussing the management of adjustable gastric band (AGB) complications. Armed with several video clips and pictures, AGB slippage, tube breakage, erosions, mega-esophagus, and other complications were reviewed in detail. In contrast to most of the attendees, in revisional AGB cases, Dr. Allen was a proponent of keeping and reusing the original AGB or, at the most, just replacing it with a new one. He also briefly spoke about using the AGB as an additional restrictive procedure following failure of the gastric bypass.

In contrast to Dr. Allen, Dr. Jacques Himpens painted a gloomier picture of the AGB. A past proponent of this procedure, Dr. Himpens stated that he now spends a considerable amount of time reversing what he termed a dysphagia operation. Based on a patient's age, comorbidities, and eating patterns, he follows a specific algorithm in deciding between a gastric bypass and biliopancreatic diversion with duodenal switch. This is in contrast to the US experience where most surgeons convert AGB failures to the former. He, too, used several intraoperative videos and pictures to demonstrate the difficulties a surgeon faces during these procedures, and challenged the notion of AGB's easy reversibility. The importance of dividing the restrictive underlying gastric wall pseudocapsule was emphasized too by various faculty members

Banding the gastric bypass with either adjustable or nonadjustable material was a popular topic discussed throughout the meeting. Dr. Mal Fobi discussed his banded gastric bypass techniques in detail, both for initial and revisional surgeries. His group reported improved results with a banded gastric bypass, as a large number of failures are due to dilated gastrojejunostomies. With a band placed superior to this anastomosis, portion control will always be maintained. The use of mesh vs silastic material was discussed, with preference being given to the latter. Until FDA approves a currently available commercial product, Dr. Fobi recommended using a 6 or 6.5 cm silastic tubing to do the job, which might also reduce the currently quoted 2% erosion rate. Whereas there were disagreements about banding the initial gastric bypass, most of the attendees and faculty members agreed on its utility for revisional surgeries, as well as placement of a feeding gastrostomy tube.

Management of a failed gastric bypass was indeed

the major topic for the rest of the day. Drs. Robert Brodin, Raul Rosenthal, and Jacques Himpens discussed their approaches to these patients in detail. Despite disagreements as to the best approach or technique, there was a uniform consensus amongst everyone that with the exception of gastroplasty revisions, no matter what reoperation is done, the return is less than expected. In other words, trimming a dilated pouch, revising a widened gastrojejunostomy, increasing or adding malabsorption, etc., all lead to less than expected weight loss results. This is especially true as the number of revisions increase.

This concept led several attendees to argue against multiple revisional surgeries in patients who will always find a way to defeat any surgery. Despite interesting differences in opinion on how to approach each patient and how many times will they try before giving up, there was uniform agreement amongst the faculty that the approach has to be tailored to each individual patient and the reasons why they failed in the first place. The faculty members further emphasized the importance of a documented and detailed consent process, as well as liberal use of preoperative imaging studies and endoscopies.

The second day was dedicated to malabsorptive operations, such as the biliopancreatic diversion with duodenal switch (BPD/DS) and the distal gastric bypass. Dr. Douglas Hess provided a very good review of his practice's experience with these patients. It was interesting to see that a subgroup of patients managed to eat their way even through the formidable BPD/DS. The necessity for a very aggressive follow-up protocol was emphasized, as noncompliant patients can rapidly spiral downwards secondary to nutritional deficiencies. Everyone in the faculty and audience had taken care of such train wrecks and shared similar stories. The importance of not rushing into any type of non-urgent surgery was emphasized, as was the critical role of a prolonged course of nutritional supplementation by any means possible. Dr. Himpens even suggested a laparoscopic feeding tube placement, should TPN prove insufficient.

The seminar concluded with 2 live revisional surgery broadcasts by Dr Higa from his operating room in Fresno. Moderated by Dr. Himpens, various helpful tricks in converting an AGB to gastric bypass were demonstrated during the first case, such as using the AGB as a retractor to the very end and staying right on top it to avoid injuries to the stomach or esophagus. Technical pearls and pitfalls of converting a previous VBG to a RYGB were reviewed during the second case, during which, he also performed a choledo-

choduodenostomy for ampullary stricture.

By the end of the seminar, both the attendees and faculty members felt they had learned a lot from the course and would make changes to their current practices. Furthermore, everyone agreed that revisional surgery should not be attempted until a surgeon has done at least 50 regular cases, either laparoscopic or open. ■

LGBP vs LASGB

ABSTRACT & COMMENTARY

By Richard Peterson, MD, MPH

This article was peer reviewed by Peter Crookes, MD, FACS

Synopsis: *Although LGBP patients experienced more complications compared to LASGB patients (5.6 vs 4.3%, respectively; $P < 0.56$), this did not reach statistical significance. Early after surgery, LGBP patients lose more weight than LASGB patients but have similar improvements in comorbidities. Further follow-up is needed to determine the relative long-term efficacy of these procedures.*

Source: Kim TH, et al. Early US outcomes of laparoscopic gastric bypass versus laparoscopic adjustable silicone gastric banding for morbid obesity. *Surg Endosc.* 2006; 20:202-209.

LAPAROSCOPIC GASTRIC BYPASS (LGBP) IS THE GOLD standard operation for long-term weight control in the United States. Laparoscopic adjustable silicone gastric banding (LASGB) is the preferred operative method for morbid obesity worldwide. Limited data are available comparing the 2 procedures in the United States.

This study compares weight loss, complications, and early outcome of comorbidity resolution in patients who underwent LGBP vs LASGB. A review of prospectively collected data was performed on 392 patients undergoing primary LGBP ($n = 232$) and LASGB ($n = 160$) procedures between February 2001 and July 2004. Differences in percentage excess weight lost (%EWL) at 3, 6, 12, 18, and 24 months post-op, improvement or resolution of comorbidities, and complications across procedure types were evaluated. Mean initial body mass index between groups was not significantly different (LGBP 47.2 vs LASGB 47.1, $P < 0.53$). There were significant differences in age, gender, and self-reported sweet-eating behavior between

operative groups. There was a significantly greater %EWL in patients who underwent LGBP compared to patients of the LASGB groups 3, 6, 12, and 18 months after surgery. There were no significant differences in resolution or improvement of comorbidities between the groups. Although LGBP patients experienced more complications compared to LASGB patients (5.6 vs 4.3%, respectively; $P < 0.56$), this did not reach statistical significance. Early after surgery, LGBP patients lose more weight than LASGB patients but have similar improvements in comorbidities. Further follow-up is needed to determine the relative long-term efficacy of these procedures.

■ COMMENTARY

Kim and colleagues compared 2 techniques that are being widely utilized in the treatment of morbid obesity. LGBP has become the standard bariatric operation at many centers in the United States. In contrast, Kim et al point out that the LASGB is the most commonly performed procedure worldwide. The LASGB is a purely restrictive operation that induces early satiety in the patient by means of a small gastric pouch. In contrast, the LGBP is both a restrictive and malabsorptive operation that induces satiety with minimal intake, creates hormonal alterations in response to a meal, and impairs intake of high osmolar foods due to dumping syndrome. They took on the task of identifying early results of LASGB in the United States compared with LGBP.

With the approval of the Lap-Band by the FDA in 2001, there has been an increase in the number of these procedures offered by bariatric surgeons to their patients. Additionally, patients have become their own advocates, with respect to choice of surgery. Many patients spend a lot of time prior to initial consultation with a bariatric surgeon doing research on the surgical options available to them. Kim et al cite another report in their study that shows that the reported safety and "least invasive" aspect of banding as the factors that most influenced the patient's decision. The few studies that have compared LGBP and LASGB are primarily in Europe. There is little data in the United States and, hence, controversy remains regarding the indication for one procedure over the other.

Kim et al ultimately evaluated a total of 392 patients undergoing LGBP or LASGB from February 2001-July 2004. There were 232 LGBP and 160 LASGB patients. BMI was similar in the 2 groups. Characteristics that were significantly different ($P < 0.05$) were that the patients in the LASGB were older (41.7 vs 38.5), more likely to be male (25% vs 11%), and were less likely to

CME Questions

be sweet eaters (47.8% vs 61%). Additionally, Kim et al evaluated the differences in improvement/resolution of comorbidities between the 2 groups, and found that in the 6 comorbidities they identified (hypertension, diabetes mellitus, hyperlipidemia, arthritis, GERD and stress urinary incontinence), there were no statistically significant differences. No mortalities were reported in either group. The complications noted were broken into early and late complications. The LGBP group had a significantly greater rate of early complications, ie, anastomotic leak, intraabdominal abscess, wound infection, and pneumonia (5.2 vs 0.63; $P < 0.05$). The LASGB had a significantly higher rate of late complications, ie, tubing leak/break, incisional hernia, and small bowel obstruction (3.7 vs 0.43; $P < 0.05$). However when comparing their overall complication rate, there was no significant difference between LGBP and LASGB (5.6 vs 4.3%). There was significantly more percentage of excess weight loss (%EWL) for all time points in the LGBP group compared to the LASGB except at 24 months.

Kim et al put together a nice study comparing LGBP and LASGB. Their data suggest that even with a slower %EWL, as seen in LASGB resolution of comorbidities, occurs. However with the recent utilization of LASGB in the United States, more long-term follow-up is necessary to realize the sustainability of these results. Additionally, they commented on the fact that their study was non-randomized and, because of the patient numbers, small differences that do not appear significant in this study may be if the number of patients was increased. Overall, Kim et al have added a valuable beginning in the literature to the understanding of LGBP and LASGB, and why one modality may be better than another for patients. Larger series are needed to truly evaluate which technique will provide the most benefit to specific groups. ■

CME Objectives

- Discuss the clinical implications of various types of bariatric surgery;
- Discuss comorbidities resulting from obesity, as well as secondary pathologies resulting from bariatric surgery;
- Review peri-operative and post-operative procedures to ensure long-term success, lower mortality from surgery, and a decrease in comorbidities;
- Review current data regarding use of obesity drugs, as well as nutritional support in the fight against obesity. ■

- 1- **True or False. Small Bowel obstruction following laparoscopic Roux en Y gastric occurs only at the mesenteric defect.**
 - a. True
 - b. False
- 2- **True or False. Laparoscopic Roux en y is associated with a lower length of stay and morbidity and mortality than its open counterpart.**
 - a. True
 - b. False
- 3- **the roux en y gastric bypass:**
 - a. is more efficient than the lap band in terms of rapid weight loss
 - b. less efficient than the lap band in terms of effects on comorbidities
 - c. complication rate increase with time when compared to the lap band
4. **Diabetes following gastric bypass:**
 - a. is improved because patient lose weight
 - b. is improved because the duodenum and the jejunum are bypassed
 - c. is worsened if the patient does not exercise
 - d. a and b

Answers: 1. (b); 2. (a); 3. (a); 4. (d)

Bonus Books

A FREE White Paper for you

AHC Media appreciates the faith you have placed in us to provide you with practical, authoritative information. As a token of our gratitude for your support, we would like to provide you with the free white paper, *The Joint Commission: What Hospitals Can Expect in 2007*. From new National Patient Safety Goals to new standards to a new data management tool designed to help hospitals identify areas for improvement, 2007 is shaping up as a year of innovation and change for the Joint Commission on Accreditation of Healthcare Organizations and the facilities it accredits. This special paper is written specifically to explain the new standards so that you can plan appropriately.

To get your free copy of *The Joint Commission: What Hospitals Can Expect in 2007*, type <http://www.ahcm-diawhitepaper.com> into your browser, and follow the instructions. ■

Dear *Bariatric Medicine Alert* Subscriber:

This issue of your newsletter marks the start of a new continuing medical education (CME) semester and provides us with an opportunity to review the procedures.

Bariatric Medicine Alert, sponsored by AHC Media LLC, provides you with evidence-based information and best practices that help you make informed decisions concerning treatment options and physician office practices. Our intent is the same as yours - the best possible patient care.

Upon completing this program, the participants will be able to:

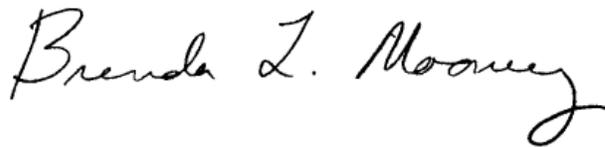
1. Discuss the clinical implications of various types of bariatric surgery;
2. Discuss comorbidities resulting from obesity, as well as secondary pathologies resulting from bariatric surgery;
3. Review peri-operative and post-operative procedures to ensure long-term success, lower mortality from surgery, and a decrease in comorbidities;
4. Review current data regarding use of obesity drugs, as well as nutritional support in the fight against obesity.

Each issue of your newsletter contains questions relating to the information provided in that issue. After reading the issue, answer the questions at the end of the issue to the best of your ability. You can then compare your answers with the correct answers provided in an answer key in the newsletter. If any of your answers were incorrect, please refer back to the source material to clarify any misunderstanding.

This activity is valid 24 months from the date of publication. The target audience for this activity is .

If you have any questions about the process, please call us at (800) 688-2421, or outside the U.S. at (404) 262-5476. You can also fax us at (800) 284-3291, or outside the U.S. at (404) 262-5560. You can also email us at: customerservice@ahcmedia.com.

On behalf of AHC Media, we thank you for your trust and look forward to a continuing education partnership

A handwritten signature in black ink that reads "Brenda L. Mooney". The signature is written in a cursive style with a large, looping 'y' at the end.

Brenda Mooney
Vice-President/Group Publisher
AHC Media LLC