Surgical Treatment of Obesity

Learning Objectives:

1. Understand who is an appropriate candidate for referral for surgical weight loss.
2. Appreciate impact of operative weight reduction to improve co-morbid medical conditions.
3. Recognize potential early and late complications of WLS

Obesity is a major health issue in America as we enter the 21st century. Obesity contributes to the development of numerous life-threatening or disabling disorders including coronary heart disease, hypertension, Type II diabetes mellitus, hyperlipidemia, degenerative joint disease, and obstructive sleep apnea. The indications for surgery for severe obesity were outlines in the 1991 NIH Consensus Development Statement. Candidates for operative intervention should have a BMI>40 kg/m^2, or a BMI>35 kg/m^2 when associated with high-risk co-morbid conditions. Significant weight reduction in the morbidly obese has been demonstrated to improve or reverse co-morbid illness, while benefiting psychological, social, and economic well being. Today, laparoscopic techniques offer a less invasive approach to surgical management of obesity. While the gastric bypass (RYGB) and the laparoscopic adjustable gastric band (Lap-Band) are commonly performed, the laparoscopic gastric sleeve is gaining in popularity.
Defining Best Practices

The Commonwealth of Massachusetts Betsy Lehman Center for Patient Safety and Medical Error Reduction published its clinical guidelines and recommendations for credentialing and training improvements in 2005. The American Society for Bariatric Surgery (ASBS) recognized the importance of accreditation of surgeons and hospitals and soon over 900 surgeons and hospital sought voluntary verification by the Surgical Review Corporation (SRC). In 2005, The American College of Surgeons also initiated a formal accreditation process for Level I and II Bariatric Network to assure appropriate hospital facilities, multidisciplinary teams, and best practices for the surgical care of the morbidly obese patient. In 2007, the Betsy Lehman Expert Panel updated their report. In 2004 the Betsy Lehman Center for Patient Safety and Medical Error Reduction convened at the request of the Public Health Commissioner to study weight loss surgical programs and procedures in Massachusetts. Authorities in the fields of obesity treatment, patient safety, nutrition, medical practice, managed care, pediatrics, nursing and ethics, as well as a consumer representative throughout the state reconvened in to update their initial report based on subsequent published medical literature.

The Betsy Lehman Center established task groups: surgical care; multidisciplinary (psychological, nutritional, medical); informed consent; anesthetic perioperative care and pain management; nursing perioperative care; pediatric/adolescent care; facility and quality assurance and quality improvement resources; coding and reimbursement issues; and data collection; endoscopic therapies; and public policy. The task force members represented over 80% of the institutions performing weight loss surgery throughout Massachusetts. Task groups addressed patient safety recommendations; strategies for medical error reduction and system improvements; credentialing needs for hospitals and practitioners; and future research needs.
The Surgical Care Task Group identified 65 articles most relevant since last publication. These included randomized control trials, prospective and retrospective cohort studies, meta-analyses, case reports, prior systematic reviews, and expert opinion.

Roux-en-Y gastric bypass (RYGB) accounts over 90% of all WLS operations in 2000. Laparoscopic adjustable gastric banding (LAGB) is the second most commonly performed procedure. RYGB improves obesity-related comorbidities and produces significant long-term weight loss.

Types of Weight Loss Surgery

Combination Procedures

Combination procedures include RYGB, biliopancreatic diversion (BPD), and duodenal switch.

(DS)

Gastric Bypass
Most gastric bypass operations are now done laparoscopically. LRYGB reduces pulmonary, wound, hernia-related complications, and postoperative pain (Category B), but may have higher internal hernia rates than RYGB (Category C). Weight loss is similar with both open and laparoscopic approaches (Category B).

Long-limb RYGB (LL-RYGB) and very very long-limb RYGB (VVLL-RYGB) extend the length of the Roux limb to enhance weight loss. The procedures may increase risk of protein and micronutrient deficiencies (Category C). Banded RYGB may be subject to long-term complications related to reintervention, reoperation, and quality of life (Categories C and D).

**BPD and DS**

BPD and DS produce effective weight loss (Category B). In patients with a BMI > 50, it may be superior to that achieved with RYGB (Category C). However, the procedures may increase severe complications (e.g., protein and micronutrient deficiencies). Lifelong patient follow-up is required (Category D).
Restrictive Procedures

Restrictive WLS (e.g., LAGB) has no malabsorptive or maldigestive components.

**LAGB**

Short-term data show promising outcomes with LAGB, but long-term studies raise questions on durability and reoperative rates (Category B). LAGB should be performed in accredited, multidisciplinary settings by experienced surgeons. It is safe for obesity medicine specialists, nurse practitioners, physician assistants, residents, and bariatric nurse specialists to adjust bands under the supervision of a weight loss surgeon (Category D).

**Laparoscopic Sleeve Gastrectomy (LSG)**
• Several short-term studies suggest safe and effective weight loss with LSG (Categories B and C), but long-term data on safety and efficacy are needed to recommend the approach as anything other than investigational (Category D). If other WLS options are ruled out for reasons

**Patient Selection**

Emerging issues in patient selection include treatment of those with a BMI > 50 and individuals > age 60. Although procedure-specific recommendations for extremely obese patients have yet to be determined (Category C), the literature suggests that combination procedures (e.g., RYGB, BPD, DS) lead to greater excess weight loss (EWL) and resolution of comorbidities than restrictive procedures (e.g., LAGB) (Category D).

Age may remain an independent risk factor following WLS (Category C), but evidence suggests that WLS can be safe and effective in patients > 60 (Categories B and C). We recommend that older patients not be denied improvements in health and quality of life associated with WLS (Category D).
In summary, the surgical management of the morbidly obese, in appropriately selected candidates, produces significant and sustained weight reduction with improvement in associated co-morbid medical conditions such as diabetes. Adjustable laparoscopic gastric banding and RYGB can be performed laparoscopically. Encouraging short-term results have been reported with laparoscopic bariatric procedures, with the benefit of reduced hospital length of stay, more rapid return to normal activity, improved cosmesis, and a reduced incidence of incisional hernia. The goals of implementing best practices will be to reduce morbidity and optimize care.
REFERENCES


Websites

1. www.rmfcme.com “Bariatric Surgery”.
4. www.obesityhelp.com
5. www.asmbs.org