CHAPTER

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Laparoscopic Adjustable Gastric Banding

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Obesity has been increasing at a remarkable rate and has become a world-wide epidemic. The effects of obesity on the both the individual and the health care system are severe and dramatic. While medical treatment has had limited success, minimally invasive bariatric surgery has been demonstrated to be a successful long-term treatment for weight loss in the morbidly obese. Specifically, adjustable gastric banding has developed into a safe and reliable restrictive weight-loss procedure. Approval by the Food and Drug Administration (FDA) was obtained for the Lap-Band (Inamed Health, Santa Barbara, CA) in June 2001. Human trials have been performed in the United States since 1998. Early results were unsatisfactory secondary to band erosion and slippage. Since the transition from the perigastric technique to the pars flaccida approach for band placement, however, complication rates have decreased substantially (see "Suggested Reading"). The Lap-Band (or laparoscopic adjustable gastric band [LAGB]) is a 13-mm wide band (silicon elastomer) that is placed approximately 3 cm caudal to the gastroesophageal junction. An alternative system used in Europe is the Swedish adjustable gastric band (SAGB), which also is composed of a silicon elastomer. The SAGB allows for greater adjustability in the internal circumference. Approval of the SAGB by the FDA currently is pending.

Operative Indications

The National Institutes of Health (NIH) guidelines for bariatric surgery are used for placement of the LAGB. To meet operative criteria, patients should have a body mass index (BMI) greater than 40 kg/m^2, or a BMI of 35 to 39.9 kg/m^2 with an obesity-related comorbid condition (e.g., hypertension, diabetes, or obstructive sleep apnea). Some surgeons feel that the lower threshold for BMI should be decreased even further, possibly as low as 30 kg/m^2. This would allow patients to intervene early and prevent weight-related comorbid conditions before they develop. Furthermore, because of the safety, ease of insertion, and potential reversibility, LAGB is being considered as a safe alternative for the adolescent population. Reports of its use in teenagers afflicted with morbid obesity are increasing. Currently, however, LAGB is not FDA approved for placement in patients younger than 18 years.

LAGB is a restrictive procedure that is efficacious in the appropriately selected patient. There are other options for bariatric surgery, including combined restrictive/malabsorptive procedures such as Roux-en-Y gastric bypass and biliopancreatic diversion with or without duodenal switch. Both of these procedures can be performed laparoscopically (LRYGB and LBPD), but there is debate regarding the operative indications. To date, no randomized prospective trial has been performed comparing LRYGB or LBPD versus LAGB. Data from uncontrolled studies suggest that LRYGB and LBPD have higher perioperative morbidity and mortality rates than LAGB and that LAGB results in less short-term weight loss that LRYGB and LBPD. While long-term data are pending, it seems that LAGB is associated with less long-term weight loss than LRYGB, but the difference may be as little as 10% excess body weight. Many would agree that it is the patient and not the procedure that will ultimately determine long-term weight loss. A multidisciplinary team approach to weight loss is necessary for long-term success. Lifelong dietary and behavioral modifications, a structured exercise program, and nutritional and psychological counseling are essential to the outcome of a patient considering weight-loss surgery.

Some surgeons reserve LAGB for patients with multiple previous abdominal surgeries, advanced or young age, multiple medical comorbid conditions, strong preference, or inflammatory bowel disease. The LAGB, however, is not currently FDA-approved in patients with inflammatory bowel disease. Other surgeons recommend the LAGB as first-line surgical therapy for morbid obesity. Ideally, a prospective randomized trial comparing LAGB and LRYGB should be performed to address some of these issues.

Preoperative Evaluation, Testing, and Preparation

Preoperative evaluation should include documentation of nonsurgical weight-loss attempts, along with evidence of psychological evaluation and dietary counseling. A variety of nonsurgical weight-loss options exist, but none have been shown to be successful over the long-term. The backbone of any medical weight loss program should include caloric restriction, protein supplementation, a structured exercise program, education and support from a dietitian, and psychological counseling. Counseling does not need to be provided by a psychologist or psychiatrist; however, it is important to identify and treat patients suffering from binge eating, overeating, or an undiagnosed major depressive disorder. Many insurance companies have utilized the NIH criteria of documented weight-loss attempts to delay or deny approval for potential bariatric surgery patients. Unfortunately, this practice sets standards for weight loss