Introduction to Bariatric Surgery

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Weight loss surgery (WLS) has come a long way since its early introduction. It currently is safer than heart operations, safer than hip operations, and carries a mortality rate no more than a regular laparoscopic cholecystectomy. This is because of dedicated bariatric and minimally invasive surgical training programs, supervision by the American College of Surgeons (ACS) and the American Society for Metabolic and Bariatric Surgery (ASMBS), and the training of Certified Bariatric Nurses (CBN).

In addition to the improvement in the safety profile of the surgical procedures, so has our understanding of the nature of obesity. It is now implicated in over 65 different medical conditions ranging from sleep apnea to diabetes, from hypertension to hyperlipidemia. In addition, obesity has been found to be a contributing risk in over 11 different malignancies, including breast and colon cancer.

The surgical procedures work in a variety of ways. Some procedures, such as the lap band and gastric balloon, are restrictive in nature. They work by restricting a patient's eating habits. Other procedures combine a malabsorptive element, such as the gastric bypass and duodenal switch. Still others work with combination of restrictive and hormonal mechanisms, such as the gastric sleeve. Regardless of the surgical procedure chosen, they are all functional tools to facilitate weight loss given the proper follow-up, diet, exercise plan, and lifestyle modification.

All surgical procedures suffer from the risks of bleeding, infection, and reaction to anesthesia. These can be successfully treated with proper identification and early intervention and still lead to successful weight loss. Even a leak can be treated successfully, in a minimally invasive fashion, if recognized early. The leading cause of death in all patients undergoing surgical weight loss is pulmonary embolism. This risk is a 1 in 250 chance, but 1 in 3 patients who suffer an embolism will not survive.

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Weight loss surgery is becoming increasingly popular. In 2016, nearly 200,000 procedures are expected to be performed. The numbers of patients in our country alone that have had WLS number in the millions. Every health care practitioner in their career, regardless of their field, is likely to encounter patients who have had weight loss surgery. It is important to understand the procedures performed, their mechanisms of action, the necessary follow-up, and the potential long-term complications.

Review Questions

1. Choose the correct statement. Weight loss surgery is:

   A. More dangerous than heart operations
   B. More dangerous than hip operations
   C. More dangerous than a laparoscopic cholecystectomy
   D. Safer because of specific training programs for both physicians and nurses and supervision by national organizations

2. Weight loss surgery (WLS) has been linked to:

   A. Infertility
   B. Endometrial cancers
   C. GERD
   D. Type II diabetes
   E. All of the above

3. All surgical procedures are a tool to help the patient achieve successful weight loss. Other important components are:

   A. Diet, exercise, lifestyle management
   B. The proper scale
   C. Having three protein shakes a day
   D. Cleansing once a month

4. The leading cause of death after weight loss surgery is:

   A. Myocardial infarction
   B. Sepsis
   C. Pulmonary embolism
   D. Post-op bleeding

Answers

1. The answer is *D.* The specific requirements for surgeon credentialing are laid out by the SAGES, SLS, ACS, and ASMBS organizations. In addition, data at credentialed centers is submitted for review by the ACS. The addition of the CBN has further improved patient safety.
2. The answer is *E.* WLS has impact on 65 different medical conditions with resolution rates ranging from 50 to 100 %. The possibility of resolution of medical comorbidities such as type 2 diabetes depends on the

severity of the disease, the duration the patient has been in treatment, the type of surgery performed, and the degree of weight loss. Obesity has been implicated in 11 different malignancies related, in part, to changing estrogen levels, poor diet, and poor patient screening.

3. The answer is *A*. All procedures will change how quickly a patient eats, how much they eat, and the types of food they eat. But this is only part of the successful equation for surgical weight loss. A patient still needs to pay attention to their diet, follow up with a dietician, have regular blood work to check protein and vitamin levels, manage their stress, and exercise regularly. The postoperative follow-up is best individualized towards the patient's specific goals, tailored with regard to their progress, and lifelong. A fitness tracker and food log have been shown to increase total amount and duration of weight loss.
4. The answer is *C*. The leading cause of death is pulmonary embolism. This is characterized by the acute onset of shortness of breath, hypoxia, hypotension, chest pain, a sense of impending doom, and tachycardia. The best treatment is prevention. Patients should be ambulatory within 4 h of the surgical procedure, and patients at high risk (family or personal history of a PE, BMI over 60, or immobility) should be considered for prophylactic IVC filter. While the other causes may also be life-threatening, they are all very treatable with prompt identification.