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There are several positive and negative aspects associated with the laparoscopic adjustable gastric band (LAGB) listed below:

14.1 Pros

- It is a minimally invasive procedure.
- Shorter hospital stay.
- Does not require partial removal of the stomach or diversion of the gastrointestinal tract.
- Purely restrictive, therefore does not cause malabsorption.
- The only procedure that allows for outpatient adjustments after surgery.
- Demonstrates improvement in obesity-related comorbidities.
- Can be applied to obese adolescents.

14.2 Cons

- Strict diet and lifestyle modifications are required to achieve and maintain weight loss.
- Less effective weight loss than other bariatric procedures.
- May require revision or conversion to another weight loss procedure.

Let's expand on these further.

Almost all surgery for obesity is now performed laparoscopically through several small incisions making it minimally invasive. However, the LAGB has shown to

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impart a shorter hospital stay and shorter operative time than other minimally invasive weight loss procedures [1].

Procedures can be divided into restrictive and malabsorptive. The benefit of LAGB is that it does not require diversion of the gastrointestinal tract like laparoscopic Roux-en-Y gastric bypass or removal of a portion of the stomach like laparoscopic sleeve gastrectomy. Furthermore, the LAGB is considered a purely restrictive procedure in which patients are less likely to have malabsorption [2].

The LAGB is unique in that the band has an inflatable balloon attached to a subcutaneous port. This allows for outpatient adjustments in band volume without having to hospitalize the patient. In this way, patient weight loss can be tailored [3].

Like other weight loss procedures, patients will have an improvement in obesity-related comorbid conditions like diabetes, hypertension, and hyperlipidemia. Approximately two-thirds of patients with diabetes can achieve better glucose control or complete resolution of diabetes after LAGB. One study showed improvement in hypertension in up to 80% of their subjects, with 55% no longer requiring any anti-hypertensive medications. Furthermore, the LAGB has had a positive impact on illnesses like obstructive sleep apnea, gastroesophageal reflux disease, and asthma [4].

There are various criteria that need to be met prior to undertaking bariatric surgery. The majority of procedures today are only performed in adults who have a BMI > 35 with comorbid conditions or those with BMI > 40. Furthermore, this procedure is being performed in obese adolescents and has shown positive results similar to adult studies [5, 6].

In post-gastric band, patients are required to have a lifelong follow-up with their surgeon and a close follow-up with a dietitian. Lifestyle and diet modifications are integral parts of success with LAGB and maintenance of weight loss [3].

Patients can achieve between 34.7 and 53.3% of EBW in 1 year. However, multiple studies have shown non-LAGB procedures such as gastric sleeve and Roux-en-Y gastric bypass to have superior weight loss [1].

Review Questions

1. Which of the following is a benefit of laparoscopic gastric banding compared to other weight loss procedures?
 - A. Adjustable for weight loss
 - B. Does not cause malabsorption
 - C. Leaves gross anatomy intact
 - D. All of the above
2. Which of the following patients is a good a candidate for lap band?
 - A. A patient who cannot dedicate time to exercise
 - B. A patient who has high cardiovascular risk with a BMI of 35
 - C. A patient who has poor eating habits
 - D. A patient who is able to follow up regularly

3. Which of the following laparoscopic procedures is only a restrictive weight loss surgery?
 - A. Sleeve gastrectomy
 - B. Roux-en-Y gastric bypass
 - C. Laparoscopic gastric band
 - D. Jejunum-ileal bypass
 - E. None of the above
4. All of the following are the components of the gastric banding device except
 - A. Subcutaneous port
 - B. Port tubing
 - C. Inflatable band
 - D. Balloon implant
 - E. None of the above
5. Which of the following is an appropriate patient for weight loss surgery?
 - A. A 55-year-old healthy female with a BMI of 28
 - B. A 25-year-old male with a BMI of 30, history of diabetes, and no attempt at exercising or dietary modification
 - C. A 40-year-old male with a BMI of 37, hypertension, and sleep apnea
 - D. A 37-year-old female with a BMI of 40 who has missed several pre-operative appointments
 - E. A 60-year-old female with a BMI of 33, history of alcohol dependence, and diabetes

Answers

1. The answer is *D*. The benefits of laparoscopic gastric banding are multi-fold and make it an attractive option for weight loss. The band is adjustable in an outpatient setting, allowing for tailored weight loss (*A*), it does not remove a portion of the stomach (*C*), and, therefore, it does not cause malabsorption (*B*).
2. The answer is *D*. Patient selection is important prior to undertaking any bariatric procedure. Patients must be able to follow up regularly, adhere to a strict diet, and make lifestyle modifications. Those who cannot spend time to exercise (*A*) and have poor eating habits that cannot follow dietary restrictions (*C*) are not good candidates for the operation. In addition, patients who cannot undergo general anesthesia because they are at high risk (*B*) are excluded.
3. The answer is *C*. Weight loss surgery can be divided into two categories, restrictive and malabsorptive procedures. Choice *C*, gastric band does not remove a portion of the stomach or alter normal anatomy. This is why it is only a restrictive procedure. Ingested food is limited which allows

for more frequent meal intake, less caloric intake, and weight loss. In contrast to this, choices A, B, and D are all categorized as malabsorptive procedures.

4. The answer is D. A subcutaneous port (A), port tubing (B), and inflatable band (C) are all parts of the gastric banding device. The inflatable band is placed around the upper portion of the stomach and is connected to the band tubing. The tubing is brought out through the anterior abdominal wall, tunneled in the subcutaneous tissues, and attached to the port. The port is sutured under the skin in the subcutaneous tissues. Choice D, the balloon implant is not part of the banding apparatus.
5. The answer is B. It is important to know how to choose the appropriate patient for bariatric surgery. A BMI of 30 with comorbid conditions such as diabetes, obstructive sleep apnea, and hypertension and a BMI of 40 with no associated conditions are general criteria for weight loss surgery. In addition to this, patients must be compliant (D), undergo a psychiatric and nutritional workup, and have tried diet and exercise modifications to lose weight (B). Patients with drug or alcohol dependence are also excluded from undergoing surgery (E).

References

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