
Laparoscopic Gastric Band: Early and Late Complications

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Laparoscopic adjustable gastric banding (LAGB), although a good option for weight loss, does have its associated complications.

Early complications:

- Food intolerance
- Obstruction
- Perforation
- Venous/pulmonary thromboembolism
- Bleeding
- Infection (early or late)

Late complications:

- Band erosion
- Band slippage (early or late)
- Pouch enlargement
- Esophageal dilatation
- Port or tubing defects
- Failed weight loss

Food intolerance exhibited by nausea and vomiting is the most common early complication associated with LAGB but can also be an indication of obstruction. Obstruction occurs at an incidence of 0.5–11 % [1]. Simply adjusting the fluid in the band may help alleviate these symptoms. While adjustment may be done at

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the bedside, many surgeons prefer to do it under fluoroscopy for ease of both the patient and the surgeon. Band slippage can also lead to obstruction and will be discussed later in the chapter. Perforation is rare and the incidence is less than 1 % [1].

Non-band-related complications are bleeding, wound infection, and venous thromboembolism (VTE). The incidence of VTE varies and is reported at less than 1 % to as high as 3.5 %. Pulmonary embolism (PE) is rare but can have an incidence as high as 1 %. Bariatric patients have several risk factors for VTE including but not limited to hypercoagulable state, venous stasis, and obesity hypoventilation syndrome. Patients undergoing obesity surgery must have aggressive prophylaxis and be monitored closely for signs and symptoms of VTE [2].

Another complication is failed weight loss. Because the LAGB is purely restrictive, this technique requires full compliance on the patient's part. If dietary restrictions are not followed and poor eating habits continue, this will lead to poor results. Furthermore, patients may be converted to a gastric sleeve or Roux-en-Y gastric bypass with good results [1].

Band erosion can occur in up to 6.8 % of cases [1]. Pressure from the band buckle or a tightly placed band can gradually erode into the stomach. Symptoms vary from epigastric pain to gastrointestinal bleeding to abscess. Endoscopy can be performed to make the diagnosis. Treatment is band removal, repair of stomach, or conversion to another procedure at another time [1] [2].

Band slippage is a rare incident occurring at a rate of 0.4–8 % [1] and can be divided into five classifications. Type I is an anterior slip where the band slips downwards on the stomach, and type II is a posterior slip where the posterior portion of the stomach slips upwards through the band. Type III is pouch enlargement (discussed in the following paragraph). Type IV is an immediate postoperative slip and type V is necrosis of the stomach associated with types I and II. This can be diagnosed with an upper gastrointestinal (UGI) series X-ray. Reoperation with band removal or re-positioning is warranted for this complication with the exception of type III [3]. Furthermore, patients can be converted to a gastric sleeve or bypass after several weeks if the gastric band is removed [1].

Increased pressure within the pouch over time can cause pouch enlargement (type III slippage). This increased pressure may be secondary to band over inflation or patient overeating. A UGI may be obtained to evaluate the degree of enlargement. Esophageal dilation can also be seen in these patients. Treatment is conservative in the majority of cases where the surgeon will completely deflate the band and modify eating habits. A UGI can be rechecked in 6 weeks to follow pouch size and most will return to normal size. If this is unsuccessful, the band may need to be removed [3].

Review Questions

1. All of the following are complications of gastric band except:
 - A. Band erosion
 - B. Gastric obstruction
 - C. Port infection
 - D. Bowel obstruction
 - E. Band erosion

2. A patient presents to the emergency department with acute onset nausea, vomiting, and severe abdominal pain. The patient's vital signs are as follows: temp 98.6, BP 140/80, and pulse 110. The patient relays a history of LAGB procedure 2 weeks ago. What is the most likely diagnosis?
 - A. Gastric band erosion
 - B. Gastroenteritis
 - C. Band slippage
 - D. Small bowel obstruction
 - E. Gastric perforation

3. Which of the following complications can be managed conservatively (nonoperatively)?
 - A. Gastric perforation
 - B. Pouch enlargement
 - C. Band erosion
 - D. Port/tubing abscess

4. A patient is postoperative day 3 from a lap band procedure. On evaluation, the patient appears tachypneic and is requiring increasing amounts of oxygen to maintain an oxygen saturation. You note that the patient has not been compliant with ambulation and has been in bed since surgery. What is the likely diagnosis?
 - A. Deep venous thrombus of the left leg
 - B. Band slippage
 - C. Port infection
 - D. Pulmonary embolism

Answers

1. The answer is *D*. The gastric band is placed around the upper portion of the stomach. This procedure does not involve bowel or gastric resection. Therefore, bowel obstruction (*D*) is not a complication associated with this procedure. Band slippage (*A*), gastric obstruction (*B*), port infection (*C*), and band erosion (*E*) are all serious complications associated with this procedure and will likely require reoperation and band removal.

2. The answer is *C*. The most likely diagnosis in this scenario is band slippage (*C*) especially with acute onset of vomiting and abdominal pain in a patient with a recent LAGB placement. Gastric band erosion (*A*) and gastric perforation (*E*) are late complications associated with gastric banding. Gastroenteritis (*B*) is a possible diagnosis with these symptoms but less likely in a patient with recent gastric banding. Small bowel obstruction (*D*) is not likely because the gastric banding procedure does not involve small bowel.
3. The answer is *B*. Pouch enlargement (*B*) is a type III slippage associated with increased pressure in the stomach proximal to the band. This is usually treated by reducing fluid in the band and treating symptoms of reflux and nausea that may be present. Gastric perforation (*A*), band erosion (*C*), and port/tubing abscess (*D*) are all treated with reoperation and removal of the band apparatus.
4. The answer is *D*. This patient is displaying classic signs of an acute pulmonary embolism (*D*). This goes along with the patient's history of remaining in bed and not ambulating postoperatively. This is a serious postoperative complication of bariatric surgery. The bariatric team should work together to encourage and ensure that patients are out of bed and mobile to prevent VTE complications. DVT (*A*), band slippage (*B*), and port infection (*C*) would not present with the classic symptoms of tachypnea and hypoxia which are associated with pulmonary embolus.

References

1. Brethauer SA et al (2014) Systematic review on reoperative bariatric surgery American Society for Metabolic and Bariatric Surgery Revision Taskforce. *Surg Obes Relat Dis* 10:952–972
2. Jamal MH et al (2015) Thromboembolic events in bariatric surgery: a large multi-institutional referral center experience. *Surg Endosc* 29:376–380
3. Eid I et al (2011) Complications associated with adjustable gastric banding for morbid obesity: a surgeon's guide. *Can J Surg* 54(1):61–66