

Gastric Closed-Loop Obstruction and Perforation Secondary to Gastric Band and Small Bowel Obstruction: A Case Report

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Introduction

Complications secondary to laparoscopic gastric banding (LAGB) are well defined in the literature, and this procedure has fallen out of favor due to more effective weight-loss surgeries over the last 15 years. Small bowel obstruction (SBO) due to gastric band erosion, slippage, compression/adhesion from the silicon tube, and bowel incarceration between abdominal wall and silicon tube are well documented in the literature. A recent narrative review published in 2024 found 43 cases of SBO secondary to complications from previous LAGB. This case demonstrates a patient with an adhesive SBO related to a prior nephrectomy, who also had a gastric band in place, leading to a closed-loop obstruction and subsequent gastric perforation. There were no other cases with this pathology found in the literature.

Case Report

The patient was a 62-year-old male with a past medical history of renal cell carcinoma status post right nephrectomy, obesity status post LAGB, congestive heart failure, hypertension, and hyperlipidemia who presented to the emergency department with acute-onset abdominal pain, nausea, and vomiting. He was found to be tachycardic with a normal blood pressure, and labs were notable for significant leukocytosis (white blood cells = $20.0 \times 10^3/\text{mL}$). He had a computed topography (CT) scan of his abdomen and pelvis which demonstrated his gastric band in place. However, severe distension of the stomach with pneumatosis of the posterior-lateral wall of the gastric cardia and fundus, extraluminal gas in the anterior abdomen, free fluid in the left upper quadrant, and dilation of the small bowel with a transition point in the right lower quadrant (RLQ) were also seen – see figures 1-4. Due to the concern for bowel perforation, the patient was taken urgently to the operating room where a diagnostic laparoscopy identified a perforation in the fundus of the stomach. The gastric band was removed, and the gastric perforation was repaired primarily. However, the adhesions causing the distal point of obstruction were unable to be lysed laparoscopically, so the approach was converted to laparotomy. The adhesions were identified in the RLQ and lysed, and the obstruction was resolved with no need for bowel resection. The patient recovered well, was advanced to a full liquid diet, and was discharged 7 days later.

Figure 1: Coronal CT showing gastric band, distension, pneumatosis



Figure 2: Axial CT showing gastric distension and pneumatosis



Figure 3: Axial CT showing small bowel transition point



Discussion

In this case, a patient with previous abdominal surgery (nephrectomy) presented with a small bowel obstruction secondary to adhesive disease deep in his abdomen. His gastric band acted as a proximal transition point causing a closed-loop physiology and massive gastric distension. This acute massive gastric dilation (AMGD) can cause ischemic necrosis and perforation due to the pressure on the gastric wall exceeding the perfusion capability. This physiology is commonly seen along the fundus or greater curvature regions and is most commonly associated with eating disorders, post-abdominal surgery, SBOs, pyloric stenosis, duodenal obstructions, and acute psychogenic polydipsia [8].

Laparoscopic adjustable gastric banding is a procedure that was very popular amongst early bariatric surgeries. Unfortunately, this procedure was found to have significant complications. Of those complications, gastric band migration and erosion are two of the more severe with some even causing bowel obstruction or perforation. Small bowel obstructions, on the other hand, are very common complications post-operatively for any abdominal or pelvic surgeries, most often secondary to adhesive scar tissue. The combination of a small bowel obstruction distally with a gastric band proximally causing a closed-loop physiology has only been described once before in the published literature. This case report describes a very rare but very serious complication associated with LAGB where that closed-loop physiology caused a gastric perforation. This complication has not been described before in the literature and should be brought to the attention of our surgical community as a potential complication of patients with gastric bands and the potential for adhesive SBOs.

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