A Bezoar Causing Bowel Obstruction After Roux-en-Y Gastric Bypass: A Case Report

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Abstract- We aimed to present a patient with phytobezoar causing small bowel obstruction after Roux-en-Y gastric bypass. Thirty-year-old woman with a history of prior Roux-en-Y gastric bypass due to morbid obesity three years ago presented with colicky abdominal pain, distention, nausea, vomiting, and obstipation. Initial abdominal X-ray showed various distended small bowel loops with air-fluid levels. The patient was taken to operation room for laparoscopic exploration, and a phytobezoar was found in distal jejunum. The bezoar was fragmented and flushed through cecum. The patient tolerated the surgery and her symptoms relieved without complication. Moreover, she received dietary consultation in order to prevent future recurrences. Small bowel obstruction in a patient with prior abdominal surgery is mainly caused due to adhesions, stenosis of anastomosis and hernias. An uncommon cause for obstruction is bezoar formation. The majority of patients with bezoars have a history of gastric surgery. Diagnostic imaging is not always helpful, and surgical exploration is sometimes required for diagnosis. Treatment is mainly surgical, but conservative medical treatment is also reported to be helpful. Apart from removal of bezoar, a dietary consultation is required to avoid eating habits leading to bezoar formation. Bariatric surgery is becoming more common; thus its complications are becoming more common as well. Majority of patients with bezoars have a prior history of gastric surgery. Therefore it is important to maintain a high level of suspicion for timely diagnosis of bezoars in patients with prior history of bariatric surgery, especially Roux-en-Y gastric bypass.

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Introduction

Roux-en-Y gastric bypass is a trending bariatric surgery due to its efficacy in generating weight loss and maintaining the weight for a longer period. However, its complications are seen more and more due to a higher rate of operation done on the increasing obese population. Bowel obstruction is one of the known complications of gastric bypass. Common causes of bowel obstruction include adhesions, hernias, intussusceptions, stenosis of anastomosis, and superior mesenteric artery syndrome; however the underlying cause of obstruction may be unusual (1). Here we report a patient presenting to an academic hospital who had undergone laparoscopic Roux-en-Y gastric bypass, and her postoperative course was complicated by small bowel obstruction due to a phytobezoar in the ileum, distal to the jejunojejunal anastomosis.

Case Report

A 30-year-old woman with a past medical history of morbid obesity (BMI=42) who underwent laparoscopic Roux-en-Y gastric bypass 3 years prior to the emergency room presentation came in with moderate to severe colicky abdominal pain of gradual onset primarily in the epigastric region without radiation to other regions, associated with several episodes of bilious vomiting. She did not have fever, chills, or diarrhea. Her last bowel movement was one day before presentation, and she reported no recent gas passing. Her past medical, drug, family, and social histories were unremarkable,

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furthermore on physical examination she had stable vital signs except for tachycardia, and on abdominal examination she had distention, periumbilical tenderness without rebound tenderness and guarding.

Her abdominal X-Ray was characteristic of bowel obstruction with several air-fluid levels. Therefore, she was taken to the operating room for laparoscopic exploration. A solid obstructing intraluminal mass was found 100 cm from the ileocecal valve with collapsed bowel distal to it. Considering the patient undergoing gastric bypass surgery, like other patients Roux-en-Y gastric bypass has been created stomach laceration and bezoar formation. It is necessary that in similar patients, in case of symptoms of partial or complete obstruction, in addition to another differential diagnosis, bezoar can be diagnosed (Figure 1 and 2). The bezoar, which consisted of partially digested fruit matter was then gently crushed and milked out of the small-bowel lumen and also through the colon. Another cause of gastrointestinal obstruction is that the CT scan did not report a malignancy. In this patient, the diagnosis of bezoar and distention in patient's intestine was confirmed with before bezoar and collapse of the intestinal arteries after bezoar.

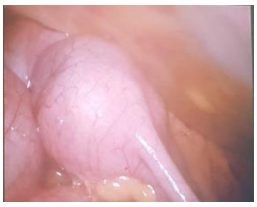

Figure 1. Laparoscopic view of the bowel loop containing bezoar

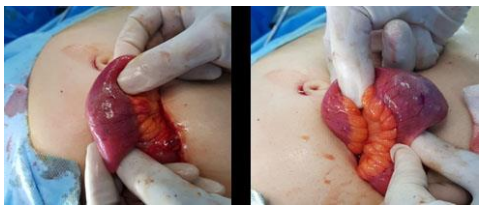

Figure 2. Bezoar into the bowel lumen

The patient tolerated the procedure well without complications. Further questioning about the diet of the patient revealed that she had eaten a significant amount of persimmon earlier to presentation which led to phytobezoar formation.

She tolerated food on a postoperative day one, and she was discharged home on the third day after surgery. The patient is currently being followed at the clinic with no complaints and continuous dietary counseling.

Discussion

Bariatric surgery is becoming more prevalent as the rate of morbid obesity is increasing, and we are facing more of its complications nowadays. Roux-En-Y gastric bypass is a widely acceptable option due to its efficacy in causing weight loss, maintaining weight loss, and low complication rates. One of the recognized complications of Roux-En-Y gastric bypass is bowel obstruction. If patients present with nausea and vomiting following this surgery, the first thing that comes to mind is stricture of the anastomosis location (2). However, some authors reported that when they dilated the stricture endoscopy, they found a bezoar blocking the way (3). Therefore a high state of vigilance is required in order not to miss bezoars.

Intestinal obstruction is a rather common presentation in surgery. Various etiologies may exist, including adhesions, hernias, volvulus, intussusception and etc. An uncommon cause of bowel obstruction is bezoars that are concretion of undigested or partially digested substances in alimentary tract and are responsible for 2-4% of small bowel obstructions (4). Bezoars are mainly formed in stomach and may be passed to small intestine and cause obstruction in the narrowest part of small intestine, usually 50-60 cm proximal to ileocecal valve (5). Signs and symptoms of bezoar are similar to other causes of bowel obstruction including abdominal pain, nausea and vomiting, abdominal distention, obstipation and etc. However, these symptoms develop rather insidiously. Bezoars are mainly categorized in 4 groups based on their contents, (a) phytobezoars, which are the most common and contain undigested fruits and vegetables, (b) trichobezoars, which contain hair (c) pharmacobezoars, consisting of drugs and (d) lactobezoars, containing milk products (6).

Risk factors for bezoar formation include previous gastric surgery, poor chewing of food, high fiber, and low liquid diet and any condition causing delayed gastric emptying such as diabetes mellitus or hypothyroidism (7).

Bezoars may not be easily diagnosed on plain abdominal X-Ray, other diagnostic modalities include Barium upper GI meal, CT scan, and endoscopy, however, may of bezoars are diagnosed only by surgical exploration such as our patient. The diagnostic accuracy of CT scan for bezoars as a cause of bowel obstruction is 65-100%, the bezoar appearance in CT scan is a mass with mottled gas associated with small bowel dilation proximal to it (8).

Treatment of bezoars may be medical, endoscopic or surgical based on the circumstances. Bezoars can be managed conservatively using cola suggested by an

interesting study (9), however endoscopic or surgical treatments are often required. Fragmentation and flushing, enterotomy, and extraction of bezoar or in cases were bowel wall is necrotized, or the bezoar is encrusted into the bowel wall and not easily extracted resection of the involved region, are primary surgical options (10). In our case, because the bezoar was in the jejunum and not accessible by endoscopy, we extracted the bezoar by fragmentation and flushing technique. Caution must be exercised not to cause injury to the distended bowel during its manipulation. Despite effective treatment, the rate of recurrence is around 14%. Using more liquids, better mastication of food avoids eating high amounts of fruits and vegetables and drinking cola from time to time are helpful dietary recommendation in order to avoid bezoar formation.

Bariatric surgery, especially Roux-en-Y gastric bypass, is becoming more popular as its efficacy is considerable, and complications are few. However, physicians must maintain their vigilance for patients complaining of nausea and vomiting after these surgeries. Although the first differential diagnosis is anastomosis stricture, other less common conditions such as bezoars must be kept in mind. Bezoars may cause gastric or bowel obstruction, and usually surgical intervention is necessary to manage them, and if left untreated they may cause significant morbidity and mortality. Diagnosis of this condition is tricky as imaging is not always conclusive, and endoscopy cannot reach small bowel. Therefore, surgical exploration is sometimes required for a definite diagnosis.

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