

Citro Bezoar Intestinal Obstruction After Roux-en-Y Gastric Bypass: Case Report

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ABSTRACT

Background: Obesity, one of the most demanding public health dilemmas in this century, often necessitates bariatric surgery for effective management. Laparoscopic Roux-en-Y gastric bypass (LRYGB) is a widely accepted procedure for severe obesity. While generally safe, it carries risks such as postoperative complications like leaks, stomal stenosis, and internal hernias, with low mortality rates.

Case Presentation: A 57-year-old caucasian female with a BMI of 36.7 kg/mm² underwent LRYGB and later presented with vomiting and severe abdominal pain. Imaging revealed bowel loop distension, prompting urgent laparoscopy. An intraluminal phytobezoar causing bowel obstruction was identified and surgically managed. Subsequently, a perigastric abscess developed, treated successfully with antibiotics. Postoperatively, the patient's BMI significantly decreased, resolving comorbidities.

Discussion and Conclusion: This case highlights the importance of considering bezoar-related obstructions in post-LRYGB patients presenting with gastrointestinal symptoms. Phytobezoars may be seen due to altered anatomy and dietary factors. Symptoms typically arise months to years' post-surgery. Clinical vigilance, imaging, and surgical intervention are crucial for timely management, preventing life-threatening complications like bowel perforation. Awareness among healthcare providers about rare complications is crucial for optimal patient recovery after bariatric surgery.

Keywords: Bariatric surgery complications, Laparoscopic roux-en-y gastric bypass, Intestinal obstruction, Bezoar, Obesity surgery

BACKGROUND

Obesity stands as one of the most demanding public health dilemmas in this century with bariatric surgery emerging as the most compelling solution for severe obesity and its associated metabolic issues.

Laparoscopic Roux-en-Y gastric bypass (LRYGB) was first described by Alan Witt grove [1] in 1994 as a bariatric procedure and remains currently a gold standard procedure.

Among complications associated by the LRYGB are the post-operative leak (0 to 5%), stomal stenosis, marginal ulcers, gastro gastric fistulas, dumping syndrome, or small bowel obstruction, mainly caused by internal hernias (3 to 5% lifetime incidence) [2,3] or more rarely by intussusception and bezoar. Mortality rate remains at 0.09 percent [4].

CLINICAL PRESENTATION

A 57-year caucasian female patient, with an admission BMI (Body mass index) of 36.7 kg/mm² with arterial hypertension and obstructive sleep apnea (using Continuous Positive Airway Pressure device - CPAP) underwent

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LRYGB in November 2022. Seven months after surgery the patient was admitted to the Emergency Department with bouts of vomiting evolving over 1 week, followed by sudden and intense abdominal pain in the past 24 h. The pain was epigastric with dorsal radiation, associated with copious vomiting. There was no fever or gastrointestinal transit alterations. Analytically, there was no leukocytosis or

increased CRP. Arterial blood gas analysis revealed a lactate level of 2.88.

A CT scan of the abdomen and pelvis was performed (**Figure 1**), identifying distension of the alimentary and biliary loops. As a result, urgent exploratory laparoscopy was performed.



Figure 1. CT coronal view in day emergency department (red circle highlights jejunum-jejunum anastomosis, with bowel dilatation and obstruction).

Intraoperatively, no perforation of hollow viscera or internal hernia was found. The common loop was distended near the jejunum-jejunum anastomosis, conditioned by an intraluminal “lesion”. An enterotomy was performed with identification and extraction of a phytobezoar (2 orange segments), which was extracted, and closure was done transversely with

barbed suture (**Figure 2**). The postoperative period progressed favorably, with discharge on the 4th day postoperatively. However, a new admission occurred 15 days later due to a peri-gastric abscess, treated with intravenous antibiotics.



Figure 2. Enterotomy and citro bezoar extraction; citro bezoar.

Currently, the patient is clinically well, having undergone laparoscopic cholecystectomy for symptomatic gallstone disease without complications. 15 months after LRYGB she lost 40 kgs and 16 kg/mm² (actual BMI of 20.7 kg/mm²), resolving its hypertension and sleep apnea.

DISCUSSION

Bezoar presents as a rare etiology of small bowel obstruction, characterized by the conglomeration of ingested

material that is neither indigestible nor insoluble. Phytobezoars, primarily composed of cellulose but also containing lignin and fruit tannins, are the most prevalent type and are predominantly encountered in regions with Mediterranean dietary patterns rich in oranges, vegetables, and persimmons [5,6]. Patients undergoing Roux-en-Y gastric bypass (RYGB) are particularly predisposed to this complication due to factors such as reduced gastric pouch size, limited mobility, decreased gastric

acidity, loss of pyloric function, altered gastrointestinal hormone levels affecting intestinal transit, and inadequate mastication. Symptoms typically manifest between 9 months to 3 years postoperatively.

The patient from our report clearly remembered, after emergency surgery, the inadequate mastication episode that led to this complication. She reported being in her kitchen and motivated by the doorbell ring almost swallowing the pieces of orange. This episode, in association with all the previous discussed factors, lead to this unusual small bowel obstruction complication.

In a meta-analysis conducted by Ben-Porat et al. [7], fifteen cases of post-RYGB bezoar formation were documented, with reported symptoms encompassing small bowel obstruction, perforation, and gastric outlet obstruction. Bezoar localization varied between the gastric pouch and the jejunojejunal anastomosis, necessitating diverse management approaches ranging from endoscopic to surgical interventions, respectively.

CONCLUSION

Although not the most prevalent cause, gastrointestinal obstructions caused by bezoars should be considered in patients who present with delayed complaints of nausea and vomiting. Investigations into this possibility are imperative, as solely considering an anastomotic stricture may lead to delayed treatment and potentially life-threatening complications such as bowel perforation. This case underlays the vital importance of low suspicion level needed for an adequate investigation with a CT scan in post-bariatric surgery patients or even a diagnose (and therapeutically) laparoscopy.

DECLARATIONS

Ethics approval and consent to participate

In compliance with ethical standards, informed consent was obtained from the patient for this case report, prioritizing patient autonomy and confidentiality.

Consent for publication

We have obtained written consent for publication from the patient included in this case report, acknowledging their understanding that their anonymized data and medical history will be shared for educational and research purposes.

Availability of data and materials

Data sharing is not applicable to this article as no datasets were generated or analyzed during the current study.

Competing interests

The authors declare that they have no competing interests.

Authors' contributions

Authors JM [1] and JP [2] have contributed equally to this work, regarding patient data collection, writing and reviewing of the manuscript. All authors read and approved the final manuscript."

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