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Original Article

Intestinal obstruction following gastric bypass

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ABSTRACT

Purpose: To draw the attention of the medical community to a differential diagnosis of intestinal obstruction due to bezoar in the late postoperative period of gastric bypass that requires diagnosis and emergency management.
Methods: We report 8 cases of patients with intestinal obstruction due to bezoar in the late postoperative period of gastric bypass who required surgical intervention.
Conclusion: Intestinal obstruction due to fruit pomace is a late complication that may require urgent surgical intervention and should be considered in the differential diagnosis.

Introduction

The anatomical and functional changes associated with gastric bypass can lead to the formation of bezoars, which cause intestinal obstruction [1]. Intestinal obstructions may occur in the interstitial anastomosis, the common limb, or close to the ileocecal valve and may require urgent surgical intervention [1,2].

Subjects

We report 8 cases of patients with intestinal obstruction due to bezoar in the late postoperative period of gastric bypass who required surgical intervention. Although few such cases have been described in the literature, it should be included in the differential diagnosis due to the need for both early surgical treatment and disease prevention.

Material and methods

Participants

We evaluated 2765 patients who underwent laparoscopic gastric bypass between January 2010 and December 2018 at two Centers of Excellence for morbid obesity treatment. At both centers the bypass was performed without a ring, with a pre-colic and pre-gastric alimentary limb measuring 120–150 cm and a biliopancreatic limb ranging from 60 to 100 cm. The gastroenteric anastomosis was performed manually, using PDS 3–0® (Ethicon) sutures to form two planes on the posterior layer and one plane on the anterior layer or using a linear stapler according to the surgeon's preference.

We identified 8 patients diagnosed with intestinal obstruction due to undigested fruit that required urgent surgical intervention (the events occurred between February 2015 and July 2019). Intestinal obstruction was diagnosed through clinical history, physical examination, computed tomography and laparoscopy. In all cases, the diagnosis was confirmed during the surgery. Data regarding the date of surgery, age, sex, diagnosis and surgical findings were collected from the medical records.

Ethics

This study was approved by the institutional research ethics committee (No. 18144919.70000.5336).

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Results

Of the 8 patients, 5 (62%) were women, aged 53.2 (SD, 8.7) years. The time between gastric bypass and intestinal obstruction ranged from 10 months to 6.4 years, with a median of 23 months. Non-contrast tomography was used in 87.5% of the cases. CT findings varied according to the site of the obstruction, but the main finding was bezoar as a mass in the obstructed segment of the bowel, which was mottled owing to trapped air and was outlined by fluid in the proximally dilated small bowel, followed by a collapsed distal limb.

The surgical approach was laparoscopy in 1 case, conventional in 3 cases, and 4 others began as laparoscopy but required conversion to conventional surgery. In all cases, dilation of the excluded stomach and proximal limbs were observed. The location of the obstruction, which was confirmed during the operation, was at the entero-entero anastomosis in 2 (25%) cases, the alimentary limb in 3 (37.5%) cases, and the ileocecal valve 3 (37.5%) cases.

In all cases, an enterotomy was performed to remove the bezoar, the contents of the proximal limbs were emptied, and the enterotomy was closed. Gastrostomy was performed in 1 case. One patient had multilobar pneumonia in the right lung, which required 7 days of hospitalization. In 1 case of obstruction at the terminal ileum level, free fluid was observed in the cavity due to perforation of the small intestine. All patients were discharged in good general condition. After diagnosis, while reviewing their history, the patients reported intake of fruit pomace (varieties of orange or tangerine) in the days preceding the onset of pain.

Discussion

There are several causes of late intestinal obstruction in patients who undergo laparoscopic gastric bypass.

Internal hernias are the main causes of intestinal obstruction and must always be considered in the differential diagnosis [3]. Intestinal intussusception has also been described after bariatric surgery [1,3].

Obstructions in the entero-entero or caudal do the anastomosis can cause dilation of the excluded stomach, including the risk of rupture and its consequences. Thus, quick diagnosis and treatment can make a significant difference in the outcome.

Gastric surgeries are risk factors for bezoar formation, which have been described after bariatric surgery in few articles, but which must be considered in the differential diagnosis. A review published in 2016 found only 19 cases of intestinal obstruction after bariatric surgery, 15 of which occurred after gastric bypass. The authors draw attention to the importance of early diagnosis for therapeutic success, reducing morbidity and mortality [1].

The diagnosis is based on clinical history and abdominal tomography and is confirmed during the operation. In our series, the patients had an obstructive condition from 10 months to 6.4 years, while the literature reports cases from 9 months to 30 years [1].

In the first 600 cases of our series, which were not evaluated in this study, we routinely placed a 7 cm silastic ring around gastric pouch. Among these cases, we observed no cases of intestinal obstruction similar to those described in this article. However, we did observe several cases of severe obstruction (gastric bezoar) in the gastric pouch, which were caused by larger volumes of unchewed food. These patients were successfully treated with upper gastrointestinal endoscopy. On the other hand, no new cases of severe obstruction were observed after we stopped using the ring. It is important to point out that the gastroenteric anastomosis we perform has a narrow pattern, restricting the passage of food.

Many cases of bezoar can go undiagnosed and involve no significant obstructive condition, which makes it difficult to define the prevalence in milder cases, and it could even be a cause of chronic abdominal pain [1]. It is a complication that can be avoided with proper nutritional guidelines, which must be encouraged during patient follow-up [1].

In conclusion, intestinal obstruction due to fruit pomace is a late complication that may require urgent surgical intervention and should be considered in the differential diagnosis. It can be diagnosed through clinical history and non-contrast computed tomography. It can be avoided by reinforcing information about proper nutrition to patients and family members.

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Ethics approval

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Conflicts of interest

The authors declare that they have no conflict of interest.

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