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Rare Cause of Obstructive Acute Abdomen by Phytobezoar: Orange Pomace

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1. Abstract

Obstructive acute abdomen is considered the second most common type of acute abdomen in surgical emergency. Phytobezoars are rarely reported as etiological factors and affected patients may remain asymptomatic for many years. In most cases, diagnosis is difficult and this entity continues undiagnosed until surgery due to the absence of specific signs and symptoms. Although no gold standard exam is available for the diagnosis of intestinal phytobezoar, this hypothesis should be considered when encountering an obstructive acute abdomen. In this study, a case of acute abdomen caused by phytobezoar is reported.

2. Keywords: Acute abdomen; Intestinal obstruction; Bezoar; Phytobezoar

3. Introduction

Bezoar is a collection of indigestible organic material that can be found throughout the gastrointestinal tract but is most often detected in the stomach [1]. The small intestine can also be affected, although such cases are rare and considered secondary to the migration of a gastric bezoar [2,3]. Bezoars can be classified as: phytobezoar (bark, seeds, leaves, roots and stems), trichobezoar (hair), pharmacobezoars (medicines), lactobezoars (milk protein in infants), among others [4,5]. Some risk factors are related to the formation of bezoars such as: inadequate chewing, reduced gastrointestinal motility, age extremes, diabetes mellitus, gastric surgery, hypothyroidism, peptic ulcer, gastric cancer and neurological conditions. The clinical manifestation can be epigastric pain, dyspepsia and vomiting [6,7].

Obstructive acute abdomen of the small intestine caused by phytobezoars has an incidence smaller than 4% and the diagnosis is difficult because imaging can be confused with stool [8,9]. Currently, several operative and non-operative techniques have been described for the treatment of this obstruction, ranging from endoscopic and laparotomic techniques to Coca-Cola® gastric lavage [6].

We report a case of a patient complaining of severe abdominal pain associated with dyspnea, nausea, vomiting and intestinal irregularity. A diagnostic hypothesis of obstructive acute abdomen was made and confirmed by physical examination, abdominal X-ray and abdominal computed tomography.

4. Case Presentation

A 63-year-old male patient was admitted to the emergency room complaining of abdominal pain. He reported that the pain had lasted for several months and worsened 10 days before. Diffuse, more intense

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nausea, vomiting and change in bowel habits, with constipation for the last 3 days were the main symptoms. The patient denied fever and weight loss and had a history of hypertension and diabetes mellitus.

Physical examination revealed flushed face and dehydration ++/4, as well as globose, tympanic abdomen and deep palpation of the upper abdomen caused discomfort and pain, without signs of peritonitis. Rectal touch showed integral mucosa, free from palpable masses and rectal ampulla with no bleeding signs. Significant pain reduction was achieved by passing a nasogastric tube.

4.1. Laboratory exams at admission showed

Urea 79 mg/dL, creatinine 1.8 mg/dL, CRP 1.90 mg/dL and leukocyte count 16.300/mm3 with 4% rods. Abdominal X-ray showed a large distension of the small intestine, suggesting an obstructive acute abdomen. The patient was hospitalized for general surgery and computed tomography of the abdomen was requested, revealing obstruction of the ileocecal valve with distension of the small bowel loops.

Figure 1: Abdominal computed tomography showing small bowel obstruction.

The patient underwent exploratory laparotomy. Intraoperative findings included a hard mass in the terminal ileum, which could not be fragmented and abdominal distension. Enterotomy was performed at the site obstructed by the hard mass - a phytobezoar composed of orange pomace. The colon did not show any alterations and the peritoneal cavity was free from fluids.

Figure 2: Intraoperative finding: phytobezoar composed of orange pomace.

5. Discussion

Obstructive acute abdomen is a common and dangerous surgical emergency, associated with high mortality rates if the diagnosis is delayed. Clinically, it presents with abdominal colic-like pain, associated with nausea and vomiting, often accompanied by alterations in the gastrointestinal habit (difficult or no passage of gas or stool). Physical examination generally reveals distended abdomen, with tympanic sound to percussion.

Intrinsic and extrinsic causes may be responsible for this obstruction. The former includes bezoars, gastrointestinal tumors, inflammatory bowel diseases, gallstone ileus, fecaloma, diverticular disease and peptic ulcer, while the latter can be abdominal adhesions (73.8% of cases), sigmoid volvulus, hernias (18.5%) and abdominal tumors [10,11].

Phytobezoars are rarely reported as etiological factors in cases of obstructive acute abdomen [12]. In a 10-year study that included 432 patients diagnosed with obstructive acute abdomen, only 14 (3.2%) had phytobezoar-induced small bowel obstructions [2]. Affected patients may remain asymptomatic for many years, but if manifestations start, the case must be considered a surgical emergency [2,13,14].

Most cases are difficult to diagnose and are largely undiagnosed prior to surgery due to the absence of clear

signs and symptoms. Currently, only 10% of the cases are diagnosed through clinical examination and radiological study of the abdomen and small intestine [15-17].

Although difficult, the diagnosis can be made based on imaging findings. In plain radiograph of the abdomen, signs of obstruction are usually detected, but are non-specific. Some authors argue that bezoars create a hyperechogenic acoustic shadowing on an ultrasound image with a potential of 88-93% recognition of ileal locations, but this is an operator-dependent exam [18]. Therefore, a computed tomography scan is the exam of choice for confirmation of obstruction, location and eventual identification of the cause. Laparoscopy may also be helpful in diagnosis and treatment [15,16]. The goal of treatment is to empty the intestine, treat possible complications and avoid post-operative complications [13,19].

The usual treatment can be conservative or surgical. The former is most commonly used in cases of gastric phytobezoar and it can range from chemical dissolutions using Coca-Cola® to endoscopic procedures [20,21]. The surgical intervention is normally reserved for those cases when the phytobezoar migrates to or originates in the intestine, because the patient usually presents with the typical clinical condition of obstructive acute abdomen, requiring immediate intervention [22-25]. During the surgical procedure, an enterotomy is done to remove the bezoar. If the occlusion causes a transmural ischemia, a segmental enterectomy must be performed [26].

Patients affected by bezoars have a 20% chance of recurrence. Thus, they should be encouraged to increase water intake, adopt a fiber-rich diet and chew their food very well. In addition, they should be checked and monitored for possible underlying motility disorders [14].

6. Conclusion

Although no gold standard examination has been proposed for the diagnosis of small bowel obstruction, this entity should be considered in the differential diagnosis of obstructive acute abdomen. Therefore, the clinical examination of the patient as a complement to imaging exams is of great importance, since a delayed diagnosis increases the risk of morbidity and mortality. Surgery is frequently the treatment of choice of this condition.

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