

An unusual sigmoid phytobezoar in a patient with a transplanted kidney: A case report

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Abstract

Bezoars are masses formed by the concretion of stomach contents or debris within the gastrointestinal tract. Bezoars are rare and account for only 0.4–4% of all cases of gastrointestinal obstruction and mainly occur in the stomach or small intestine. Intestinal obstruction caused by colonic bezoars is extremely rare. A 39-year-old man with a transplanted kidney came to the hospital because of abdominal pain, constipation, and distension. We performed an abdominal computed tomography scan and found an ovoid intraluminal mass with a mottled gas pattern in the distal sigmoid colon. Subsequently, the patient underwent laparotomic surgery and removal of the bezoar. We report a rare case of large bowel obstruction due to colonic phytobezoar, which was confirmed intraoperatively.

Key words: Abdominal computed tomography; large-bowel obstruction; phytobezoar

Introduction

Bezoars are masses formed by the condensation of debris or stomach contents in the gastrointestinal tract. There are four major types of bezoars: A trichobezoar consists of hair, a phytobezoar of vegetable and fruit residues, a lactobezoar is formed from dairy products, a pharmacobezoar is caused by medications.^[1]

A high-fiber diet, incomplete mastication, reduced gastric secretion, and decreased gastrointestinal motility from autonomic neuropathy can predispose patients to phytobezoar formation. It occurs more frequently in the small intestine, particularly in the terminal ileum and

jejunum. The occurrence of colonic obstructions caused by bezoars is considered pretty rare.^[2,3]

The complications caused by bezoars are mechanical irritation, gastrointestinal obstruction, and, in severe cases, peritonitis caused by bowel perforation.^[4]

Bezoars are responsible for 0.4–4% of cases of mechanical intestinal obstruction, which occurs mainly in the stomach and small intestine.^[2] Contrast-enhanced computed tomography (CT) is the method of choice to identify the location, severity, and etiology of intestinal obstruction.^[5]

We describe our experience regarding a large-bowel obstruction caused by phytobezoar in a patient with a transplanted kidney.

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Case Report

A 39-year-old man was admitted to our hospital for constipation, distension, and severe acute abdominal pain in the lower left quadrant. His medical history included Alport syndrome resulting in progressive chronic kidney disease (CKD), hypertension, and iron deficiency anemia under medical treatment. Twelve years ago, he received a successful deceased-donor kidney transplant [Figure 1]. At the time of admission, vitals were stable, and he was afebrile. Abdominal examination revealed distention with no signs of peritonitis. Laboratory data were unremarkable. Chest X-ray was normal and abdominal X-ray did not show signs of bowel obstruction. Overnight, the patient experienced an increased pain on left side of the abdomen.

Non-contrast CT (NCCT) of the abdomen was done (Toshiba ® Aquilion 64-TSX-101A/HC) as the patient had CKD (serum creatinine level = 7.71 mg/dL). CT scan revealed a focal circumferential thickening of the sigmoid colon with an ovoid and encapsulated intraluminal mass measuring 4.7×3.6 cm [Figure 2]. The mass had a mean attenuation value of 10.21 HU. Dilatation of the proximal segment with abundant fecal material was seen [Figure 2]. Based on the CT findings, particularly mottled gas pattern and encapsulated wall of the mass, we made the diagnosis of phytobezoar. Hence, because of acute intestinal obstruction



Figure 1: Coronal computed tomography scan shows transplanted kidney in left iliac fossa (→)

and to avoid peritonitis, the patient underwent urgent exploratory laparotomy.

The obstructive intraluminal mass in the sigmoid colon was identified (approximately 4×4 cm in size) and manually broken down with evacuation of the obstructive material along with large amounts of liquid fecal material. The postoperative course was uneventful and the patient was discharged on the seventh postoperative day. At 3-month follow-up, the patient was free of gastrointestinal symptoms.

Discussion

Phytobezoars are concretions of poorly digested fruit and vegetable fibres that are found in the alimentary track and are mostly composed of indigestible cellulose, tannin, and lignin from ingested vegetables and fruits. The most common phytobezoars encountered worldwide are related to the ingestion of persimmon fruit. Normally, they are found in the stomach and may enter into the small bowel. The most important risk factors for phytobezoar formation are excessive consumption of fruits rich in fibers, poor dental health, insufficient mastication, diabetic gastroparesis, kidney failure, hypothyroidism, use of drugs which affect gastric motility,^[6] and previous gastrointestinal surgery.^[7]

In our case, previous history of abdominal surgery was confirmed as a predisposing factor for phytobezoar. Clinically, patients with colonic bezoars most commonly present with abdominal pain. Other symptoms include abdominal distension, vomiting, constipation, diarrhoea, anorexia, and weight loss. If treatment is delayed, colonic bezoars can be complicated by intestinal obstruction and perforation with consequent peritonitis.^[7]

Plain abdominal radiography and CT scan are used for radiological evaluation of the patients presenting with intestinal obstruction. Simple abdominal X-ray may reveal air-fluid levels associated with mechanical obstruction,^[5] and occasionally it is possible to see the outline of bezoar, which is difficult to differentiate from abscess or feces within the colon.^[8]

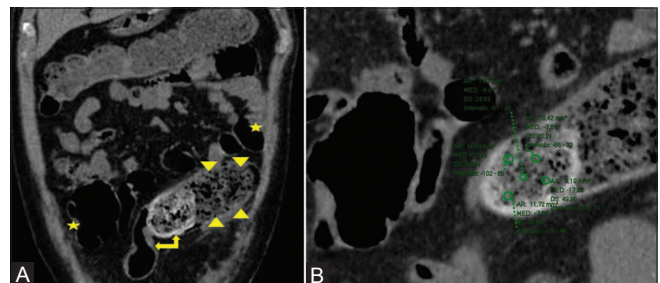


Figure 2 (A and B): (A) Coronal computed tomography scan shows an ovoid intraluminal mass containing mottled gas pattern with encapsulating wall and associated wall thickening (arrows); note some dilated bowel loops (stars) and an abundant fecal material (arrowhead). (B) The mean attenuation value of the intraluminal mass is about 10.21 HU

On abdominal CT, 89% of bezoars appear as spherically-shaped masses containing air-fluid levels.^[1] CT is also helpful in discriminating bezoars from other causes of bowel obstruction such as gastrointestinal malignancies, gallstone ileus, etc.^[1,9]

In our case the differential diagnosis, especially with fecal impaction, was very difficult. Indeed, many authors have highlighted some CT features to allow easier differential diagnosis between these two entities. Small bowel feces tends to be more amorphous and tubular in shape without evidence of an encapsulating wall,^[4,10] whereas phytobezoars have a well-defined ovoid shape and an encapsulating wall, such as in our case.^[11] Chen *et al.*^[12] showed that a higher grade of obstruction is commonly associated with phytobezoar impaction without mesenteric fatty stranding and intraperitoneal fluid; moreover, they found that a combination of the food debris length <9.5 cm and the mean attenuation value <11.75 HU of the obstructed bowel at the transition point was suggestive for phytobezoar, such as in our patient. Although these features are typically found in the small bowel, they may also be considered very useful in the large bowel.

There are several treatment options for colonic bezoars. In general, treatment differs according to the location and size of bezoar and presence of complications.^[1]

Conservative management is considered in uncomplicated cases of colonic bezoars and consist of digital evacuation, enemas and manual disimpaction.^[7]

If conservative approach fails, a colonoscopy can be attempted for bezoar removal^[1] with contextual mechanical fragmentation and extraction using several instruments. Although endoscopy has an acceptable success rate and fewer complications than surgery, surgical approach is mandatory in case of endoscopic treatment failure, sigmoid volvulus, hematochezia, intestinal obstructions, perforations, or peritonitis.^[13,14]

When surgical approach is chosen, the first step is intestinal decompression and fluid-electrolyte replacement; later, open or laparoscopic abdominal exploration may be performed.^[5]

In our case, the patient underwent laparotomic surgery and phytobezoar was manually broken down with evacuation.

Conclusions

Bezoar is a rare disorder, however, it must be suspected in case of mechanical intestinal obstruction. Our case

underlined the importance of early detection and removal of a bezoar to prevent complications such as obstruction, perforation, or peritonitis. CT scan is essential for the diagnosis and an accurate preoperative assessment. Surgical approach is indicated for bezoars causing intestinal obstruction.

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Conflicts of interest

There are no conflicts of interest.

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