

## Unexpected Cause of Large Bowel Obstruction: Colonic Bezoar

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Bezoars are the uncommon result of ingestion of poorly digestible or indigestible substances. The majority of bezoars are located in the stomach [1], with the small intestine being the next most commonly involved site. The colon is rarely the site for a bezoar [2,3]. The following is a report of large bowel obstruction due to bezoar, confirmed intraoperatively.

### Patient Description

A 78 year old man with a history of congenital blindness, hypertension and diabetes mellitus was admitted with constipation and left abdominal pain lasting 4 days, which worsened on the day of admission. He had no fever or chills at admission and his vital signs were normal. Physical examination revealed mild abdominal distension and left lower quadrant tenderness. Rectal examination was normal with negative guaiac test. The laboratory workup including liver function tests, coagulation profile and basic metabolic panel were within normal limits, except for a white blood cell count of 12,000  $\mu$ /L. Plain abdominal X-ray showed distended large bowel with cutoff at the level of the descending colon [Figure A].

A computed tomography scan revealed a distended proximal large bowel up to the distal descending colon, where an oval intraluminal mass with mottled gas pattern was demonstrated. The descending colon wall was thickened, and there was stranding of the surrounding fat, with a small amount of free fluid in the left gutter [Figure B]. No diverticulosis of the colon was seen. The differential diagnosis was obstructing colonic cancer and colonic bezoar. The bowel wall was thickened in a long segment, which is less likely due to a malignant process, and the impression of an intraluminal mass led



**[A]** Plain abdominal X-ray showing left large bowel obstruction, with distended large bowel loops up to a well-defined ovoid intraluminal mass with mottled gas pattern in the distal descending colon (arrow). No air or fecal contents are demonstrated distal to this point. **[B]** CT scan reveals distended large bowel loops, up to the distal descending colon where a well-defined ovoid intraluminal mass with mottled gas pattern is shown (arrow). The colon distal to it was collapsed.

us to suspect a bezoar. However, since it is so uncommon and there was no conclusive evidence, the patient was admitted for further evaluation with planned colonoscopy. Overnight, his abdominal pain increased, and he developed diffuse abdominal tenderness with chills and fever, and an elevation of WBC to 18,000  $\mu$ /L. Exploratory laparotomy revealed distended cecum and transverse colon, and a hard immobile intraluminal mass at the descending colon with patchy necrosis of the bowel wall. The distal sigmoid colon was collapsed. Similar necrotic lesions and serosal tears were seen on the cecal wall due to its distension (more than 15 cm). Right extended hemicolectomy was performed with hand-sewn ileo-sigmoid anastomosis. Macroscopic examination of

WBC = white blood cells

the specimen showed that the descending colon contained an impacted circular 4 cm wide phytobezoar with an ulceration of the bowel wall. A greenish plastic mass was firmly adhered to the mucosa. Microscopic examination showed signs of acute transmural ischemia. No malignant cells were found.

The postoperative course was uneventful and the patient was discharged on the seventh postoperative day. At 6 month follow-up the patient is doing well and free of gastrointestinal symptoms.

### Comment

We report a case of a colonic phytobezoar causing large bowel obstruction and pressure necrosis upon presentation, and the treatment of this unusual occurrence. Small bowel obstruction is the most frequent clinical presentation of phytobezo-

ars, although they are responsible for only 0.4–4% of all intestinal obstructions [4]. Chronic constipation in elderly patients with inadequate food intake due to blindness was probably the trigger to bezoar formation in our patient.

The clinical presentation of colonic bezoars is abdominal pain, sometimes associated with a palpable mass, abdominal distension, vomiting, constipation or diarrhea. The diagnosis of colonic bezoar is typically based on plain abdominal radiograph and contrast enema or on CT scan. The typical bezoar image, involving a mottled air pattern, was visible in only 18% of patients with small bowel obstruction on plain radiography [4]. Barium studies characteristically show an intraluminal filling defect of variable size that is not fixed to the bowel wall. Barium filling the interstices gives a mottled appearance similar to that of a villous tumor.

CT is much more sensitive and specific, and published series have shown the focal well-circumscribed air-mottled intraluminal mass in all the patients [5]. In our opinion, CT may be considered the imaging technique of choice for confirming the diagnosis of gastrointestinal bezoars.

CT enables radiologists to determine the point of obstruction, reveal the bezoar as the underlying cause of obstruction, and detect the existence of additional intestinal or gastric bezoars. In this case, CT diagnosis of bezoar was based on identifying a low density intraluminal mass containing air bubbles and exhibiting a characteristic mottled appearance.

The method of bezoar removal depends on the site of impaction, and the size, nature and complications of the formation. Conservative management includes enemas and manual disimpaction. Colonoscopic removal is considered if enemas fail. Surgery is reserved for bezoars following failure of conservative management, and for those presenting with life-threatening complications such as sigmoid volvulus, hemochezia or peritonitis.

Chronic constipation is a very common problem in our increasingly aging population. Bezoar-induced colon obstruction may be suspected in patients with inadequate food intake. Large bowel obstruction due to colonic bezoar is a diagnostic challenge and may cause life-threatening complications. CT seems to be the main diagnostic tool for colonic

bezoar. Treatment options will depend on the patient's condition, and management of proximal colon is part of a definitive treatment of bezoar-induced obstruction.

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