Rare disease

Isolated ileal bezoar causing small bowel obstruction

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Summary

Bezoars are a mass of ingested foreign materials commonly found in stomach in patients with psychiatric problems or history of gastric surgery. Bezoars are classified based on their composition. Frequently encountered are trichobezoars and phytobezoars composed of hair and fibres of fruits and vegetables, respectively. Primary small-bowel bezoars are a rarity and are essentially encountered in patients having small-bowel diseases such as diverticuli, strictures or tumours. Ileal bezoar leading to intestinal obstruction in absence of parent bezoar in stomach is very rare and so we present a case report here. The diagnosis was made on CT scan in which the cause was found to be an ileal bezoar. Surgical resection of the involved segment was performed and diagnosis confirmed on histopathological examination.

BACKGROUND

Stomach is a common site for formation of bezoars which can migrate into the small bowel loops and may cause obstruction.¹ Isolated presentation of ileal bezoar in absence of a parent bezoar in the stomach and without history of gastric surgery or underlying pathology is rare. Thus in this case inspite of no clinical suspicion of bezoar, immediate surgical intervention was planned based on CT scan findings.

This case demonstrates the utility of CT scanning in the evaluation and treatment of the acute abdomen as it can accurately and quickly guide the surgeon to the aetiology and site of obstruction and greatly aid in surgical planning.

CASE PRESENTATION

A 45-year-old male patient presented with complaints of severe abdominal pain, constipation and repeated attacks of vomiting since 3 days. There was no history of fever, malena or haemetemesis. There was no history of similar complaints in the past. The patient had no other medical illness or any operative history.

Examination revealed an anxious patient in distress with tachycardia (pulse 110, BP 100/60 mm Hg) and tachypnoea. Per abdomen examination revealed abdominal distension with rigidity and tenderness on palpation in right iliac fossa. Findings of per rectal examination were insignificant.

Based on this, clinical diagnosis of bowel obstruction was made and investigations ordered for determining the aetiology.

INVESTIGATIONS

Blood investigations revealed leucocytosis.

X-ray abdomen showed multiple centrally placed air fluid levels suggestive of small bowel obstruction.

On ultrasound, dilated content filled proximal ileal loops were noted with to and fro movement of contents and maximum diameter measuring 34 mm. Minimal free fluid was noted in the interbowel region.

On CT scan findings:

- Dilated proximal and few of distal ileal loops with well-defined mixed density area with mottled gas within it

noted in distal ileal loops with surrounding mesenteric oedema. These findings are highly suggestive of the gangrenous changes in the involved segment which were subsequently found per-operatively and confirmed pathologically (figures 1–3).

- Well-defined intraperitoneal fluid collection noted in umbilical and left lumbar region.

The findings were suggestive of small bowel obstruction with bezoar in distal ileal loops.

DIFFERENTIAL DIAGNOSIS

On CT scan, a well-defined mass mottled with gas bubbles associated with an encapsulating wall in ileum with a similar lesion in stomach is highly indicative of a bezoar, that is, 'floating fat-density debris' sign. An isolated amorphous

Figure 1 Selected axial image of CECT abdomen showing well-defined mixed density area with mottled gas within it noted in distal ileal loops suggestive of bezoar.

Figure 2 Selected coronal image of CECT abdomen showing the bezoar in distal ileal loops.

mass mottled with gas bubbles is typical of small-bowel faeces.²

Phytobezoars are rarely manifested as a soft tissue mass without gas, resembling an intraluminal tumour or intussusceptions. In these cases, barium study may give the clue in suggesting the diagnosis, and the diagnosis should be suspected when intraluminal filling defects appear to be mobile or multiple.

TREATMENT

Laparotomy was performed through a midline incision which revealed dilated and distended ileal loops with gangrenous changes in involved segment. Resection of the gangrenous segment was followed by ileo-ileal anastomosis. Proximal bowel loops and stomach were evaluated for the presence of bezoar but were however found normal.

On macroscopic examination, the bowel mass in the ileum measuring approximately 9×4×5 cm in size was noted and the histopathological report confirmed the diagnosis of bezoar within the gangrenous part (figure 4).

OUTCOME AND FOLLOW-UP

The postoperative period was uneventful and the patient was well and with no complaints at 1 month follow-up visit.

DISCUSSION

The term bezoar comes from the Arabic ‘badzehr’ or from the Persian ‘panzer’ meaning counter poison or antidote.^{3 5} Hindus used it for rejuvenating the old, neutralising snake venom and other poisons, treating vertigo, epilepsy and plague. A genuine bezoar was recognised by its failure to smoke when a red hot needle was plunged into it.⁴⁻⁷

Bezoars are classified based on their composition and occurrence as follows:

Figure 3 Selected axial image of CECT abdomen showing well-defined intraperitoneal fluid collection noted in umbilical and left lumbar region.

Figure 4 Postoperative specimen.

- ▶ Phytobezoars, the commonest consist of non-digestible fibres of fruits and vegetables such as cellulose, hemicelluloses, lignin and fruit tannins.
- ▶ Trichobezoars consist of hair fibres and are found usually in patients with history of psychiatric illness.
- ▶ Pharmacobezoars are composed of medicines like cholestyramine, kayexalate and antacids.
- ▶ Lactobezoars are composed of milk, curd and are seen in low-birth weight neonates.⁸

A bezoar causes small-intestinal obstruction usually after migration of a gastric phytobezoar. Primary small bowel bezoar is a rarity and is normally formed in patients with underlying small bowel disease such as stricture due to Crohn’s disease, tuberculosis or previous surgery or small bowel tumours and diverticuli as these conditions provide areas of sufficient stagnation within a dilated bowel segment.⁹ Intestinal obstruction due to bezoars is rarely encountered in adults with a normal intestinal tract.

Early diagnosis is important because bezoars provoke complications like decubitus ulcer, pressure necrosis, perforation and even strangulation if the diagnosis is delayed.¹⁰

The most common CT findings of bezoars include a round or ovoid or a long sausage-shaped mass containing

mottled gas at the obstructed site. Phytobezoars are rarely manifested as a soft tissue mass without gas, resembling an intraluminal tumour or intussusceptions. In these cases, barium study may give the clue in suggesting the diagnosis, and the diagnosis should be suspected when intraluminal filling defects appear to be mobile or multiple. Some bezoars (enteroliths) appear as a calcified intraluminal mass with a laminated appearance¹⁰

With MRI, phytobezoars appear as a hypointense mass on T1-weighted and T2-weighted MR images, and the hypointensity may be due to their high fibre content and admixture of internal gas.¹⁰

Learning points

- ▶ Isolated presentation of ileal bezoar in absence of a parent bezoar in the stomach and without history of gastric surgery or underlying pathology is rare.
- ▶ Bezoars are uncommon but definite part of the differential diagnosis when looking for a cause of small bowel obstruction.
- ▶ Delay in the diagnosis can lead to pressure necrosis, gangrene and even perforation.
- ▶ CT scan is an accurate modality of investigation to guide the surgeon for proper and timely management.

Competing interests None.

Patient consent Obtained.

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