

PHYTOBEZOAR: A RARE CAUSE OF ACUTE SMALL BOWEL OBSTRUCTION IN AN INNOCENT ABDOMEN

Fitobezoar: rara causa de obstrução aguda do intestino delgado em abdome inocente

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INTRODUCTION

Bezoars are abnormal concretions of indigestible organic material in the lumen of the gastrointestinal tract. They are named according to the predominant component material, for example, hair-trichobezoar and plant substance-phytobezoar. Trichobezoars are the commonest type of bezoars. Phytobezoar is a rare type of intestinal bezoar and is defined as a compact mass of fibers, peels, seeds, leaves, roots, stems, that collect in the gastrointestinal tract. They contain large amount of indigestible materials like cellulose, lignin and tannin¹. The other type of bezoar reported include pharmacobezoar in patients consuming bulk medications like cholestyramine or antacids⁵⁵, lactobezoar in infants due to condensed milk^{3,4} and occupational bezoar specific to occupational exposure, for example, cotton bezoar in tailors¹¹.

Bezoars can occur in any part of the gastrointestinal tract but are commonly reported in the stomach. Rarely, they occur in small bowel, colon, esophagus or common bile duct^{7,12}. Bezoars of the small bowel are rare and are conceptualized to occur secondary to migration of a gastric bezoar. Most patients have a predisposing factor such as prior gastrointestinal surgery particularly a previous gastrectomy which can facilitate transmigration¹⁴. Alternatively improper mastication as seen in extremes of age and in edentulous patients also predisposes to the formation of bezoars⁷. Decreased gastrointestinal motility, as seen in gastroparesis or use of tricyclic antidepressants are the other incriminated pathogenic mechanisms in the formation of bezoars. They usually present with recurrent or subacute intestinal obstruction.

Phytobezoar is a rare cause of small bowel

obstruction with a reported incidence of <4% in literature and only three reported cases from India^{1,11}. Here is reported one such case in a patient without any predisposing factors with review of relevant literature.

CASE REPORT

A 41 year old lady, housewife, resident of Delhi (India) presented with a history of colicky abdominal pain, multiple episodes of bilious vomiting for the last seven days and non passage of flatus and stools for the last three days, with no similar past episodes. There was no previous history of surgery, altered bowel habits or change in dietary habits. She was conscious, oriented and haemodynamically stable. Abdominal examination revealed abdominal distension, mild tenderness but no guarding or rigidity. No lump was palpable. Laboratory parameters were within normal range. Radiograph of abdomen showed multiple air fluid levels (Figure 1A), distended small bowel loops but no free air (Figure 1B). CT scan of the abdomen was normal. The patient was taken for emergency exploratory laparotomy. The intra-operative findings included dilated small bowel loops up to two feet proximal to ileocaecal junction. Intraluminal firm to hard mass, which could not be fragmented felt at transition zone and enterotomy revealed hard 5x4 cm mass made of undigested vegetable matter (peas), fibrous material and decomposed food residue. Postoperative period was uneventful and the patient was discharged on fifth postoperative day. Retrospective review of abdominal radiograph revealed mottled opacity in the region of right iliac fossa and meniscus sign (Figure 2).

DISCUSSION

A PubMed search of published literature on phytobezoar as cause of small bowel obstruction between 1981-2011, yielded 56 studies and a total of 355 cases of which two were from Indian subcontinent^{9,13}. A distinctive geographic clustering is noticeable with most reports from countries of Mediterranean region temperate climates.

A seasonal predilection for autumn and winter months has also been reported⁸. A possible explanation

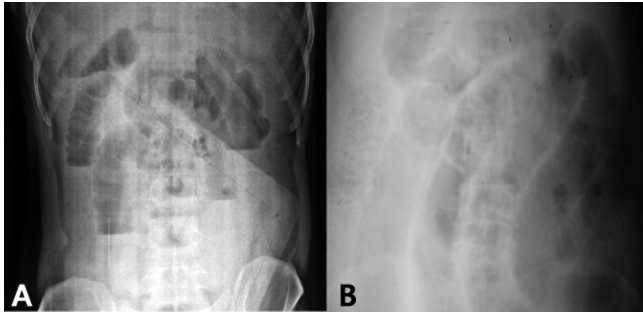


FIGURE 1 - Image showing: A) multiple air fluid levels; B) dilated small bowel loops



FIGURE 2 - Arrow showing meniscus sign

for the observation could be that it is related to unique dietary habits in these geographic terrain especially an association has been noted with the consumption of citrus fruits particularly persimmons. A sudden change in dietary habits resultant to immigration has also been proposed in the context of an epidemic persimmon bezoar witnessed during contemporary period. Another explanation could be increased prevalence of constipation in people of the temperate climates as compared to tropical countries. Constipation increases intestinal transit time and thereby can predispose to bezoar formation.

Most patients have a prior predisposing factor. Reviewing 355 cases, an innocent abdomen without predisposing factors was seen in four (1.14%)^{2,3,5,10}. Other factors were prior gastric surgery, small bowel pathology, abdominal surgery, diverticular disease prior radiotherapy, high fibre diet, edentulous individuals, extremes of age and gastrointestinal dysmotility.

Contrasting the presentation of bezoars in other sites, which can be incidentally detected, like gastric or colonic bezoars, majority of the cases of small bowel bezoars present with intestinal obstruction.

Imaging studies have been helpful in the preoperative diagnosis of bezoars; however, a high index of suspicion is required as they may be confused with small bowel faeces. Common description of phytobezoar is that of an ovoid intraluminal mass with mottled gas

appearance. They can appear variedly in the different investigations. In plain abdominal radiographs they usually present with features of intestinal obstruction and the characteristic mottled appearance may be rarely noticeable⁵⁶ or retrospectively conjectured as was the situation in this case. In barium studies they present as an intraluminal filling defect or as a gas filled intraluminal mass in abdominal sonography.

Operative management entails laparotomy or resection anastomosis and is the main stay of treatment of small bowel bezoars. Alternatively milking of small bowel bezoars into caecum or stomach has been reported to circumvent the need for an enterotomy. Only a few reports on laparoscopic removal have been published. Rarely bezoars may be managed non-operatively. Coca Cola dissolution therapy for gastric bezoars, endoscopic removal with or without fragmentation in esophageal, gastric, duodenal bezoars and use of small bowel enemas for small bowel bezoars are the reported methods of non-operative management.

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