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Mango seed causing acute large bowel obstruction in descending colon-world's first reported case

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ABSTRACT

INTRODUCTION: Phytobezoars are a very rare cause of large bowel obstruction. Mango seeds as a phytobezoar causing large bowel obstruction have not been reported in the English literature.

PRESENTATION OF CASE: We present the case of a 69 years old female who presented to us with clinical and radiological signs of acute large bowel obstruction. On laparotomy, it was noted that mango seeds as a phytobezoar was responsible for the obstruction in the descending colon.

DISCUSSION: Phytobezoars are a rare but known cause of small bowel obstruction. Large bowel obstruction is even rarer. The literature has documented a few cases of small bowel obstruction caused by mango seeds but none for large bowel obstruction. The most frequent reported sites of large bowel obstruction are the sigmoid colon and recto-sigmoid junction. However, phytobezoar causing descending colonic obstruction without any pre-existing underlying pathology has not been reported.

CONCLUSION: The association of bezoar with acute large bowel obstruction is a very rare however; it must be entertained in the differential diagnosis of any large bowel obstruction. Early diagnosis and treatment can avoid lethal complications. Our case being the first case of mango seeds phytobezoar in descending colon with acute large bowel obstruction; signifies its importance for reporting in the English literature.

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1. Introduction

Acute Large Bowel Obstruction is a serious surgical condition that can be life threatening if not managed appropriately. The most common cases are the result of colorectal tumors, hernias, strictures, and fecal impaction with bezoars being one of the rarer causes of large bowel obstruction. They more commonly obstruct the stomach or small intestine and can occur at any age. Early diagnosis is equally important to avoid complications associated with bowel obstruction such as perforation. Depending on the timing of presentation, surgery may be avoided completely. This case represents the first case of mango seeds phytobezoar with acute large bowel obstruction. The management of this case as well as literature search was performed and the work has been reported in line with the SCARE criteria [1].

2. The case

A 69-year-old female presented to the Emergency Department with a 1-day history of colicky lower abdominal pain, with no radiation. Prior to this, she experienced constipation over a two-day period for which she took a single laxative dose. She then had 2 small, watery bowel actions followed by pain. A single episode of vomiting was documented followed by abdominal distension. No history of fever, per rectal bleeding, weight loss or other symptoms was given. Previous surgery of an open appendicectomy some 20 years was recorded. She was a well-controlled hypertensive patient on beta-blocker with a pulse of 66 beats per minute. Physical examination revealed a distended abdomen with generalized tenderness with mild guarding and increased bowel sounds. Digital rectal examination was normal.

3. Investigations

Patient was noted to have a WBC 11.5 and Hb 12.8. Electrolytes and Creatinine were all normal. Abdominal X-rays showed multiple air/fluid levels with dilated large bowel up to mid-descending colon (Fig. 1). No air noted in the rectum. CT abdomen/pelvis showed a

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Fig. 1. Erect abdominal X-ray showing dilated bowel with fluid levels.

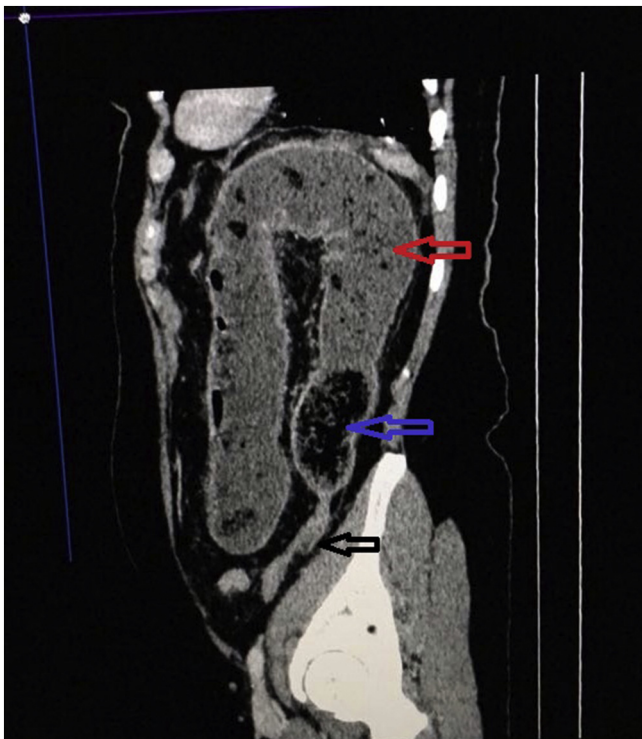


Fig. 2. CT scan of abdomen and pelvis with intravenous contrast (coronal view), the blue arrow indication the mottled gas appearance of the phytobezoar at descending colon, the red arrow indication dilated proximal colon.



Fig. 3. Intraoperative picture showing the site of obstruction.

mass within the descending colon with a mottled appearance and there was no free air in the abdomen (Fig. 2).

4. Differential diagnosis

Large bowel Obstruction Due to a tumor or bezoar.

5. Treatment

The patient was resuscitated and consented for exploratory laparotomy. The thought of endoscopic intervention was entertained in our case however; because of the positive clinical abdominal examination findings- our patient underwent exploratory laparotomy.

At laparotomy the small bowel and large bowel were distended up to the descending colon where a hard mass was palpated. Distal large bowel was collapsed (Fig. 3). There was no obvious perforation of the colon. The proximal bowel showed no evidence of ischemia or necrosis. An attempt was made to break the mass by digital compression but it was unsuccessful, hence segmental colectomy with primary stapled anastomosis was performed. On opening the specimen, a single mass of mango seeds and fibers was found occupying the entire lumen (Fig. 4–6). The patient had an uneventful recovery and was discharged on Day 5 post op. On interrogation, the patient did acknowledge of eating large amount of mango tilkari (spicy mango curry) approximately 1 month ago and also acknowledged that she accidentally swallowed some while eating in a rush as she was very hungry (Fig. 7).

6. Outcomes and follow up

The final histopathology report revealed no colonic pathology. Post op colonoscopy was performed and revealed no abnormal findings



Fig. 4. Intraoperative picture showing phytobezoar on colotomy.

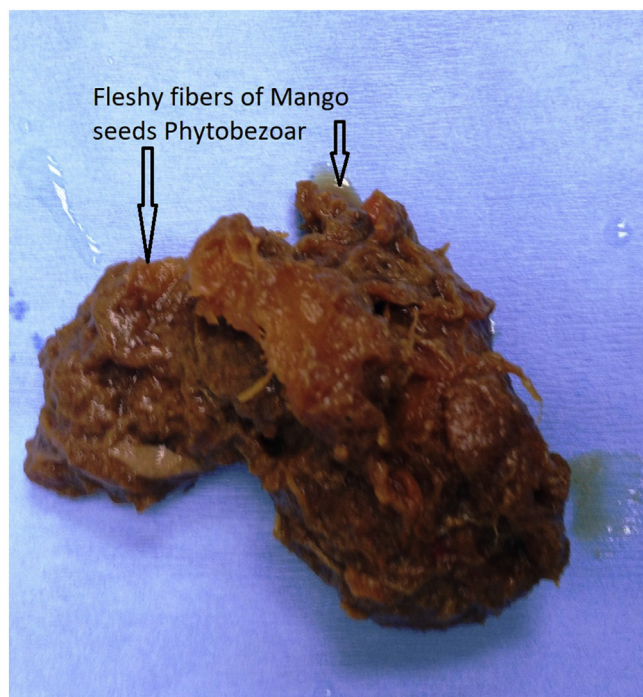


Fig. 6. Photo showing fleshy fibers of the mango seeds phytobezoar.

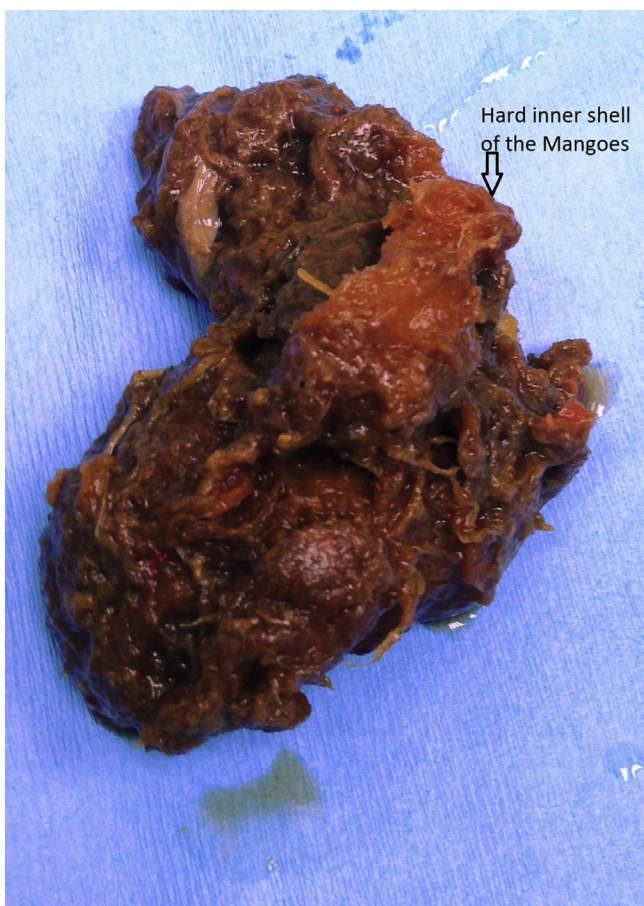


Fig. 5. Photo of the removed Mango seeds phytobezoar showing the undigested hard inner shell.



Fig. 7. Photo Showing already prepared Mango Tilkari of Trinidad and Tobago.

At one and half year follow up the patient is doing well without any further problem.

7. Discussion

Bezoars are concretions of indigestible material formed within the gastrointestinal tract. It is a rare cause of intestinal obstruction. It accounts for 0.4–4% of all cases of bowel obstruction [2].

There are four main types. Phytobezoars are made of organic material from undigested fruit, and plant fibers. Trichobezoars are made of hair fibers and are seen in patients with psychiatric illness. Pharmacobezoars are made of different drugs, which can agglutinate when taken together, or in large amounts. These include kayexalate resin and antacids. The fourth type is Lacto bezoars, which form in infants when formula has curdled within the tract [3].

Patients, who have had gastric surgery, are particularly at risk because of the altered motility and acidity of the stomach [4]. Similarly people with psychiatric illness, abnormal mastication or myotonic dystrophy as well as diabetic patients with autonomic neuropathy are particularly at risk [5].

It can happen to any age group. Based on all the published literature on large bowel obstruction; the age of these patients varies between 16 months to 79 years. Psyllium seeds, pumpkin seeds, raw popcorn, amorphous vegetable and plant materials, cherry tomatoes, sesame seeds, apricot seeds are the reported phytobezoars in the colon 5–15.

Mango seed phytobezoars has thus far, not yet been reported in the English literature as the cause of large bowel obstruction. Mango tilkari (spicy mango curry) is a traditional East Indian delicacy frequently served in many special occasions or functions in Trinidad and Tobago. It is usually prepared from unripe green mangoes chopped into pieces along with its hard inner shell.

Phytobezoars are commonly seen within the stomach, small intestine and very rarely within the large bowel. It is frequently being reported in the terminal ileum and in the jejunum due to their small luminal size.

In the colon it is frequently described at the recto-sigmoid junction or in the sigmoid colon due to the narrow luminal diameter. However; it is also been reported in right colon and descending colon. The literature has documented only 9 cases of phytobezoars with large bowel obstruction, 6 of which are in sigmoid colon or at recto-sigmoid junction, 2 in right colon and 1 in descending colon [7–16]. Arvind et al. in 2010 reported the only case of phytobezoar in descending colon in a 59 years old female. However; the patient was diagnosed previously with benign stricture in descending colon secondary to ischemic colitis [8]. The site of obstruction in our patient is descending colon. The exact cause of the formation phytobezoar in our case is unclear. However; we are postulating that it might be the inherent nature of hard inner shell of the mangoes which the patient might have swallowed while eating her food in a rush. No underlying colonic pathology was noted in our case. We are assuming that the long and hard inner shell of the mango seed may have been obliquely placed while passing through the descending colon and gradually impacted to initiate the process of colonic obstruction.

Depending on the site of the Phytobezoars in large intestine; it can present either as a small bowel or large bowel obstruction or very rarely as gastric outlet obstruction. Farooq et al. has reported a case of massive phytobezoar in the right colon due to psyllium seed husks causing complete gastric outlet obstruction by extrinsic compression is reported [16].

These patients can present in an elective setting with a history of worsening constipation. They can also present, like our patient, with an acute abdomen or even with evidence of perforation. In the acute setting, these patients are to be treated as any other case of intestinal obstruction with proper resuscitation and a decision for laparotomy made on clinical findings.

Imaging potentially helps with the definitive diagnosis. Abdominal x-rays will show dilated large bowel and may give you an idea of the level of obstruction where a cut off may be noted. CT scans will show a mass within the lumen with a mottled gas appearance. This is however, not pathognomonic for bezoars, as a fecoma or even a tumor can give a similar appearance [17–19].

Our patient 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 descending colon.

Because of the rarity there is no universal guideline, as how to manage these cases. However based on the few available case reports it can be managed either conservatively or surgical removal. Conservative management with lavage and enemas [8,20] or endo-

scopic removal of the bezoar [9,21] should be attempted where it is feasible as it avoids the morbidity of a major laparotomy. Attempts at dissolution of the bezoar with different chemical agents such as papain, cellulose and acetyl cysteine have also been described with variable success [22].

Once the conservative methods fail or the patient presents with an acute abdomen, exploratory laparotomy should be performed. Attempts should be made to fragment these phytobezoars with manual compression [7,12]; however; if it fails then a colotomy or segmental resection and anastomosis of the colon should be performed [10,13,15,16].

Because of the positive clinical abdominal examination findings our patient underwent exploratory laparotomy and a hard mass was felt in the descending colon. An attempt was made to break it by manual compression but was unsuccessful hence segmental resection with primary anastomosis was performed.

8. Conclusion

Bezoars are a rare cause of intestinal obstruction but must be considered amongst the differentials for a patient with features of bowel obstruction. Early diagnosis and treatment can avoid lethal complications. Our case represents the first case of mango seeds phytobezoar in descending colon with acute large bowel obstruction signifies its importance for reporting in the English literature.

Conflicts of interest

There is no conflicts of interest amongst the authors in publishing this case report.

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Ethical approval

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Consent

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Author contributions

The first author (SI) and second author (SS) have helped in data collection, literature search as well as designing and organizing to write manuscript. The third author (VB) and fourth author (PH) have also helped in designing and organizing to write manuscript as well as critically analysed the manuscript. The fifth author (VN) has helped in critics the entire manuscript's design and its contents.

All authors have approved the final version of this manuscript.

Registration of research studies

It is not a clinical trial.

Guarantor

Shariful Islam.

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