**Title page**

**Lithobezoar and phytobezoar causing intestinal obstruction: A report of two cases**

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**Key clinical message**:

Concretion or mass formed of exogenous undigested material in the gastrointestinal tract is called bezoar. Bezoar is a rare condition and can present with clinical features ranging from recurrent abdominal pain to acute presentation with obstruction or gastrointestinal bleeding. They are known to be associated with psychiatric illness. Preoperative diagnosis is usually done by imaging studies. They are treated with endoscopic or surgical removal of the bezoar along with treatment of complications and underlying illness. Here, we present two cases of bezoars: first, a case of a duodenal lithobezoar in an intellectually challenged young male, and second, a jejunal phytobezoar. Both cases presented with features of intestinal obstruction and were successfully managed with laparotomy and removal of bezoar.

Keywords: bezoar, gastric outlet obstruction, intestinal obstruction, lithobezoar, phytobezoar, stricture

**1.Introduction:**

Bezoar is concretion or mass formed of exogenous undigested material in the gastrointestinal tract. Although bezoar is commonly found in the stomach, it can be found anywhere in the gastrointestinal tract1. Patients with altered gastrointestinal anatomy or motility, poor mastication, excessive intake of fibres, or psychiatric illness are at risk for the development of bezoars2. Based on the composition, different types of bezoars are phytobezoars (composed of plant fibers), trichobezoars (composed of a conglomeration of hair and food particles), lactobezoars (composed of milk protein), lithobezoar(composed of stones or soil) or pharmacobezoars (which are concretions of various medications)3. Bezoars do not have specific symptoms or signs, and most of them present with nonspecific pain in the abdomen or features of intestinal obstruction. Upper gastrointestinal endoscopy can easily detect the gastric bezoar, whereas computed tomography (CT) scans have been found to be reliable and accurate tool to identify the presence of gastrointestinal (GI) bezoar(4,5). Endoscopic removal of the bezoars can be possible in selected cases but most of them require surgical management.

**2.Case presentation**

**Case number one**

### 2.1 Case History/examination

A 35-year-old cognitively challenged male presented to our hospital with complain recurrent episodes of upper abdominal pain and non bilious vomiting. Examination findings were normal except fullness in the upper abdomen. There was no history of significant illness in the past.

2.2 Methods(Differential diagnosis, investigations and treatment)

X-ray of the abdomen revealed multiple hyperdense structures at right upper quadrant of abdomen and CT scan similar multiple hyperdense structures in first part of duodenum .Upper gastrointestinal endoscopy was done after nasogastric tube placement and lavage which revealed stricture at junction of first and second part of duodenum and multiple foreign body above the stricture which was attempted to remove endoscopically but failed. Since the patient had features of gastric outlet obstruction with benign duodenal stricture and multiple foreign bodies proximal and distal to the stricture, he was planned for surgical extraction of the foreign bodies and gastrojejunostomy.

During laparotomy, here was distended stomach and first part of duodenum with palpable foreign bodies at first part of duodenum. The foreign bodies at duodenum were carefully milked to stomach and were extracted from the gastrotomy site. To our utter surprise, multiples pebbles were retrieved as foreign bodies (seven in number) and one wooden piece was retrieved(Figure 1). Retrocolic gastrojejunostomy with jejunojejunostomy was done to bypass the stricture at duodenum. The patient had normal postoperative course and oral diet was started on postoperative day two. He was discharged on postoperative day seven without any surgical complications.

and doing well on six months follow-up.

**Case number two**

### 2.3 Case History/examination

Forty two years old male presented with history of colic type upper abdominal pain and bilious vomiting for three days. He had history of similar episode six months back which resolved after conservative management. Examination findings were unremarkable except mild abdominal fullness.

2.4 Methods(Differential diagnosis, investigations and treatment)

Routine investigations including complete blood counts, renal function test and liver function tests were within normal limits. X ray abdomen erect and supine view shows features of small intestine obstruction with multiple air fluid levels. Patient did not improve with conservative management with intravenous fluids, analgesics and antiemetic medications and exploratory laparotomy was done after 48 hours. Intraoperative findings were dilated distended jejunum with about seven centimeter mass of felt inside jejunum 200 centimeter distal to dudenojejunal flexure( Figure 2). Resection of jejunum with ten centimeter margins from the mass and end to end anastomosis was done. When the resected jejunum was opened, there was a five centimeter foreign body consisting undigested vegetable fibers clumped together causing the intestinal obstruction. Postoperative period was uneventful and the patient was discharged on sixth postoperative day. and he was doing well on eight months follow-up.

**3 Conclusion and Results (Outcome and follow-up)**

Both of the patients improved after surgery without any complications. First patient was asymptomatic till nine months after surgery and was on regular follow up with psychiatrist. The second patient was also asymptomatic till six months after the surgery. X ray abdomen was done for both the patients at six months after surgery which showed normal findings.

**4. Discussion**

The term “bezoar” is thought to be derived from the Arabic word “badzehr” or the Persian word “panzehr,” both of which mean “counterpoison” or “antidote”6. The presentation of bezoar depends upon its composition. Lactobezoars may present in premature infants or newborns with symptoms of feeding intolerance and abdominal distension. Trichobezoar and phytobezoar usually present with upper abdominal pain and features of gastric outlet obstruction. Lithobezoars are more common in large intestine and present with features of colonic obstruction7. Seed bezoars are most commonly found in rectum and terminal ileum and most cases of seed bezoar are reported from middle east countries8 . Our first patient presented with features of gastric outlet obstruction and it was attributed to benign duodenal stricture rather than due to lithobezoar. The second patient presented with features of small intestine obstruction and diagnosis was made after resection of the jejunal segment.

Gastric bezoars can be removed or fragmented by endoscopy9,10 whereas bezoars in rectum can be removed manually. Endoscopic management was not successful in our patient. Medical management by enzymetic degradation can be possible for phytobezoars. Gastric phytobezoar can be managed by nasogastric lavage with cellulose, or Coca-ColaR and acetylcystine have been used with various success rate for dissolution of lactobezoar 3,11,12. Surgical removal is required for most of the tricobezoar or any bezoar with complications like intestinal obstruction, perforation or bleeding. Both of our patients had intestinal obstruction and were managed surgically. These cases highlights a rare instance of intestinal obstruction due to lithobezoar and phytobezoar. Successful management through elective surgery emphasizes the importance of tailored interventions in these cases.

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Figure legends:

Figure 1:Imges of case 1; A Xray abdomen showing radiopaque findings in duodenum; B CT scan of abdomen showing multiple radio opaque material in duodenum; C Gastrotomy with removal of lithobezoar; D Multiple lithobezoar removed from the duodenum

Figure 2 : Images of case 2. A. X ray abdomen showing features of jejuna obstruction; B. intraoperative picture of dilated jejunum containing phytobezoar; C. resected jejunum D. Phytobezoar and the jejunal mucosa.