Removal of a Giant Rectosigmoid Phytobezoar without Laparotomy

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Abstract Bezoars are the uncommon result of ingestion of indigestible or poorly digestible substances. Phytobezoars are the most common bezoars in children. Small bowel obstruction, especially of the terminal ileum, is the most common complication. Colonic obstruction is rare. Most reviewed intestinal phytobezoars with obstruction necessitate laparotomy with enterotomy.

Here, we report a rare case of giant rectosigmoid phytobezoar with near-total colonic obstruction. Successfully, removal of this bezoar by an alternative way of fragmentation with colonoscopy, not conventional enterotomy is needed. The patient recovered well and then discharged without any morbidity 2 days later.

Keyword Phytobezoar · Intestinal obstruction · Laparotomy · Colonoscopy

Introduction

Historically, bezoars are classified according to the material involved and include phytobezoar (fruit and vegetable fibers), trichobezoar (hair), lactobezoar (milk curds), and lithobezoar (stone). Bezoars secondary to other substances have also been described [1]. The majority of bezoars are located in the stomach, especially in patients with a history of prior gastric

surgery [2]. A bezoar is rarely found in the colon [3], with only a few cases reported in the literature. Traditionally, enterotomy is the preferred treatment method for removal, which prevents potential complications such as obstruction or perforation [4]. In this report, we present a rare case of colonic obstruction by phytobezoar, which was successfully removed with colonoscopy, not by enterotomy.

Case Report

A 53-year-old man presented to the emergency department with a 2-week history of a palpable abdominal mass, abdominal distension, and cramping in the lower left quadrant of the abdomen. The patient also reported consuming 2 kg of shelled pumpkin seeds, approximately 2 months earlier, subsequently developing an abdominal mass in the left lower abdomen that he could palpate. Two weeks prior to coming to the emergency department, the patient developed decreased oral intake (liquids only), abdominal distension, and left lower abdominal pain.

On examination, the abdomen was soft with a 6 cm, firm, movable mass palpable in the left-lower quadrant. The plain film of the abdomen revealed a generalized ileus, stool retention in the course of the colon, and increased pelvic density. A computed tomography (CT) scan of the abdomen and pelvis revealed a well-defined heterogeneous lesion about 6.3 cm at the rectosigmoid colon, which caused dilatation and fecal impaction of the proximal colon. The colonoscopy revealed one huge, round, bezoar (containing feces) with a stony, hard structure impacted over the rectosigmoid colon about 18 cm from the anal verge (Fig. 1a).

He received medication with 30 mL of liquid paraffin three times per day and a warm water enema each night for 3 days, in an attempt to soften and liquefy the bezoar. However, minimal stool was evacuated and the symptoms of abdominal

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Fig. 1 **a** The colonoscopy showed a feces-content lesion about 6.3 cm in diameter impacted at the rectosigmoid junction with near-total obstruction of colon. **b** The barium enema revealed a large filling defect (*arrow*), about 6.3 cm in diameter, in the sigmoid colon with nearly total obstruction resulting in fecal material retention

distension and poor appetite were still noted. A double-contrast barium enema revealed a big filling defect, about 6.3 cm in diameter, in the rectosigmoid colon with nearly total obstruction resulting in fecal material retention proximally (Fig. 1b). Rigid sigmoidoscopy, attempting fragmentation of phytobezoar with biopsy forceps, was performed. However, because the mass was movable, this too was unsuccessful. Retroflexed colonoscopy was then performed to immobilize the mass, making a tunnel and partial fragmentation of the bezoar with biopsy forceps at first (Fig. 2a), followed by piece-by-piece fragmentation with snare forceps (Fig. 2b). Throughout the course of the following 2 days, the mass was fragmented through repetitive use of the biopsy forceps and snared, then spontaneously evacuated by the patient when it had been sufficiently reduced.

Discussion

Most phytobezoars develop after excessive consumption of cellulose-rich fruits or vegetables, especially persimmons, but also tangerines and unshelled seeds. Small bowel obstruction is the most common complication of phytobezoars. Owing to anatomic narrowing, the solid impacted mass is generally found in the terminal ileum. When conservative release by enema and purgatives (including Gastrografine) fails, laparotomy is the next course of action, to avoid complications such as obstruction, perforation, bleeding, pressure necrosis, and peritonitis [6]. However, large bowel obstruction by a primary colonic phytobezoar is very rare, especially in an adult as we discovered in our review of the literature. Only eight cases, including six children and two adults with colonic

Fig. 2 Retroflexed colonoscopy with fixation of movable phytobezoar (*arrow*) and then fragmentation of the phytobezoar by snare and biopsy forceps. **a** Fragmentation with biopsy forceps. **b** Fragmentation with snare forceps

phytobezoars were identified and reviewed [1, 3, 5–8]. The reported content of the phytobezoars included sunflower seeds in five children [1, 6, 7], cherry tomatoes in one child [5], psyllium seed husks in one adult [3], and popcorn in the other adult [8]. The rectosigmoid colon was the most commonly reported site of impaction, with the ascending and transverse colon also being reported as sites of impaction.

Treatment methods included laparotomy, broken and milked by hand plus cleansing enema in one adult [3], Soapsuds® enema in one adult [8], warm water enema with digital disimpaction in four of the children [1, 6], laparotomy with colostomy in one child [5], and endoscopic biopsy forceps fragmentation with rectal irrigation and manual disimpaction in one child [7].

Our patient experienced chronic constipation even with a self-reported regular diet of generous amounts of fruits and vegetables. He reported ingesting approximately 2 kg of unshelled pumpkin seeds, which should have been the predisposing factor of phytobezoar formation and was highly located above the rectosigmoid junction and could not be manually disimpacted. It was also not easily fragmented by colonoscopy with biopsy forceps because it was movable. Retroflexed colonoscopy with fragmentation of the phytobezoar by snare and biopsy forceps was performed successfully after softening and liquefying medication had been administered. This method can be easily and securely performed, avoiding an unnecessary colostomy, which may cause potential complications.

In conclusion, the method described is the first instance of removal of a phytobezoar using this technique. We believe this technique can be easily performed and can be useful in fragmenting phytobezoars located in the colon and accessible through colonoscopy.

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