

CASE REPORTS

Small Bowel Phytobezoar Obstruction in a Post Gastrojejunostomy Patient – A Case Report

SMJ ULLAH^a, KA KAWSAR^b

Summary:

Small bowel phytobezoars are, though well-known, a rare cause of mechanical intestinal obstruction. It occurs mainly in the patients who had a previous gastric operation. We present a case of phytobezoar obstruction in

a patient, who underwent gastrojejunostomy operation. We also report here a rare radiological finding of phytobezoar obstruction. The patient was treated surgically and had an uneventful recovery.

(J Bangladesh Coll Phys Surg 2009; 27: 99-102)

Introduction:

In hospital admission, small bowel obstruction accounts for 20% of the patients. The common causes are adhesions, strangulated hernia, malignancy, volvulus and inflammatory bowel disease. Phytobezoars are rare, accounting for only 0.4-4% of all intestinal obstruction¹. Phytobezoars are concretion of poorly digested fruit and vegetable fibres that are found in the alimentary tract, particularly orange pith or pulp in patients with history of surgery². Bezoars are long been a source of gastrointestinal problems. Classically, bezoars were first described as a cause of gastric bleeding, ulceration, perforation and peritonitis³, but intestinal obstruction was not a frequent occurrence. However, since 1961, when Norberg first reported obstruction of small intestine by a bezoar in a patient in whom gastric surgery has been carried out, more and more cases have been reported⁴. Our experience, reported in the following section, is representative of this entity of small bowel obstruction from ingested plant matter in patients in whom gastrojejunostomy was performed.

Case report:

A 60-year-old female was admitted in this hospital with the complaints of epigastric pain and discomfort for about 20 days. The pain was episodic but very severe and colicky in nature. It started about 10 minutes after taking meal. Pain was not radiating anywhere, but it was associated with nausea and vomiting. The bitter tasted vomitus contained the eaten food particle. Vomiting relieves the symptoms. The patient had no anorexia, but was afraid of taking food. She had constipation and mild weight loss. For these complaints, she was taken to a district hospital and treated by nil per oral; with nasogastric suction and intravenous fluid for 5 days and she felt well and could tolerate liquid feeding orally and hence discharged. After 15 days she suddenly developed bloating of abdomen, belching, pain, nausea and vomiting. Then she was referred to Khulna Medical College Hospital.

Nineteen years back, she underwent vagotomy and gastrojejunostomy operation for pyloric stenosis and 5 years back she had leprosy and was treated. She was convinced after the bypass operation that leafy vegetables would keep her physique alright. Hence, she used to eat more green leafy vegetables. She would take fish with average Bangladeshi meal thrice daily.

On examination, she was mildly cachectic, anaemic and dehydrated. Her pulse rate was 90 beats/ min and BP was 110/70 mm Hg. On examination of her abdomen, we found it scaphoid and visible peristalsis was noted. Neither any palpable mass nor any organomegaly was found. But her bowel sound was sluggish. Her rectum was found normal by digital examination. Examination of head, neck, chest and cardiovascular system was unremarkable.

a. Professor S. M. Jafar Ullah, FCPS (Surgery), Department of Surgery, Khulna Medical College Hospital, Khulna, Bangladesh.

b. Dr. K. A. Kawsar, FCPS (Surgery), Ex-Assistant Registrar, Department of Surgery, Khulna Medical College Hospital; Presently deputed in Department of Neurosurgery, Dhaka Medical College Hospital, Dhaka, Bangladesh.

Address or Correspondence: Professor Dr. S. M. Jafar Ullah, Department of Surgery, Khulna Medical College Hospital, Khulna, Bangladesh, E-mail address: drkawsar@yahoo.com

Received: 26 July, 2007

Accepted: 14 January, 2009

Complete blood count and metabolic panel were normal. ECG, Chest X-ray and plain X-ray abdomen revealed no abnormality. Ultrasonography of whole abdomen was clueless. Barium meal X-ray reported emptying was delayed; visualized jejunal loops were dilated with intraluminal filling defects are noted at the end of the visualized contrast column, giving the impression of intussusception (Figure 1). Endoscopic examination reveals no abnormality in the stomach and duodenum.



Fig.-1: Barium meal study of the patient: giving impression of intussusception.



Fig.-2: The removed phytobezoar.

To manage the patient, a nasogastric tube was placed to at intermittent suction and intravenous nutrition was provided. After improving her general condition and with the preoperative diagnosis of upper gastrointestinal obstruction, we decided to operate. Peroperatively we found, both the loops of her

gastrojejunostomy were patent. But, an obstructing mass, about 8 cm in length and 5 cm in diameter, was noted in jejunum, about 25 cm distal to the stoma. After giving a transverse incision in the jejunum the mass was found greenish in colour and was made up of fibres of leafy vegetables (Figure 2). Jejunum was closed and then wound was closed in layers. Her postoperative period was uneventful and she recovered from the illness completely. Later on, she can take food normally.

Discussion:

The term bezoars derived from the Persian, *padzahr*, which means counterpoison. Their therapeutic uses were first accredited to Aramzoar, a 12th century Arabian surgeon⁵. Bezoars are found in the stomachs of antelopes and goats and were highly prized for their magical healing powers⁶.

There are 4 types of bezoars. Phytobezoars are the most common, and are composed of vegetable matter such as celery, pumpkin, grape skin, prune and persimmons and it contains large amount of nondigestible fibres such as cellulose, hemicellulose, lignin and fruit tannins. Trichobezoars are gastric concretion of hair fibres which usually presents in patients with history of psychiatric predisposition and in children with mental retardation. Pharmacobezoars consist of medication bezoars, which in bulk will adhere, such as cholestyramine, kayexalate resin, cavafate and antacids. Lactobezoars are milk curd secondary to infant formula, described in low birth weight neonated fed on highly concentrated formula within the first week of life⁷.

Previous gastric resection or ulcer surgery such as partial gastrectomy or truncal vagotomy with pyloroplasty predisposes to bezoars, which are included in postgastrectomy syndromes. Incidence of postgastrectomy bezoar range between 5-12%² It is interesting to note that more than half of cases of phytobezoars had history of previous gastric surgery⁸. Our patient gave a history of laparotomy and gastrojejunostomy done 19 years ago.

Other predisposing factors are ingestion of high fibre foods, abnormal mastication, diminished gastric secretion and motility, autonomic neuropathy in diabetic patients and myotonic dystrophy⁹. An

association between H2 blocker therapy in the elderly and phytobezoar formation is also reported, presumably related to lowered gastric secretion and reduced gastric emptying^{10,11}.

In a normal stomach, vegetable fibres, which cannot pass through the pylorus, undergo hydrolysis within the stomach, which softens them enough to go through the small bowel. After gastric surgery, the gastric motility is disturbed and the gastric acidity is decreased, and the stomach may empty rapidly with an increased possibility of bezoar formation. Normally found in the stomach, they may pass into the small bowel. Primary small bowel bezoar is very rare and is normally formed in patients with underlying small bowel disease such as diverticulum, stricture or tumour¹².

Clinical manifestations depend on the location of the bezoars. Gastric bezoars cause mostly non-specific symptoms (eg, epigastric pain, dyspepsia, occasional vomiting, and postprandial fullness). The most common clinical manifestations of an intestinal bezoar are complete or partial mechanical intestinal obstruction. They usually become impacted in the narrowest portion of the small bowel, the commonest site being the terminal ileum followed by the jejunum¹³, as was found in our patient. In these patients, temporary relief with recurrence is named intestinal 'lucid interval' by some authors¹⁴. The mentioned patient supports this 'lucid interval' by her relief of symptoms in between her two-hospital admissions.

Barium studies characteristically show an intraluminal filling defect of variable size that is not fixed to the bowel wall. Barium filling the interstices gives a mottled appearance similar to that of a villous tumour⁹. H.C. Teng et al. claim to be the first in describing an interesting finding in the barium study of a patient with phytobezoar obstruction. That showed an intraluminal filling defect with a claw appearance giving the impression of an intussusception. The barium study of presented patient represents this recent finding¹² (Fig 2).

Small-bowel obstruction secondary to phytobezoars should be differentiated mainly from similar conditions secondary to adhesion. However, careful

patient questioning and a high index of suspicion in patients with previous gastric surgery should, at least, suggest the diagnosis. Subsequently, gastroscopy may reveal a bezoar in the stomach. When the latter is found, an attempt should be made to break the bezoar into small pieces that could be removed endoscopically. Various proteolytic materials such as papain, cellulase, pancreatic enzymes, and bile salts have all been tried to disintegrate phytobezoars^{15,16}, with little success¹⁷. They are best treated surgically. At the time of surgery milking the bezoars into the cecum is the procedure of choice. If this is not possible, enterotomy may become necessary¹⁸.

Conclusion:

Bezoar formation is rare in healthy subjects and majority develops in persons with predisposing factors. Prevention includes avoidance of high fibre foods, introduction of prophylactic medication to improve gastric emptying and psychological or psychiatric follow up in patients with psychiatric disease⁷. Proper counseling about food habit bears immense importance after gastric surgery to prevent this.

References:

1. Kalogeropoulou C, Kraniotis P, Zabakis P, et al. Small bowel obstruction due to phytobezoar: CT findings. European Association of Radiology 2003: Clinical case 2840.
2. Acar T, Tuncal S, Aydin R. An unusual cause of gastrointestinal obstruction: bezoar. NZ Med J 2003; 116 (1173).
3. DeBaakey M, Ochsner A: Bezoars and constrictions. Surgery 5: 132-160, 1939
4. Norberg PB: Intestinal obstruction due to food. Surg Obstet Gynecol 113: 149-152, 1961
5. Edell S, Wagner D: Duodenal stenosis contributing to bezoar formation, Clin Pediatr 10: 543-545, 1971
6. Rogers L, Davis E, Harle T: Phytobezoar formation and food boli following gastric surgery. Am J Roentgenol Radium Ther Nucl Med 119: 280-290, 1973
7. Andrus CH, Ponsky JL. Bezoars: Classification, pathophysiology and treatment. Am J Gastroenterol 1988; 83: 476-8.
8. Lee JF, Leow CK, Lai PB, et al. Food bolus intestinal obstruction in a Chinese population. Aust N Z J Surg 1997; 67: 866-8.

9. Yildirim T, Yildirim S, Barutcu O, et al. Small bowel obstruction due to phytobezoar: CT diagnosis. *Eur Radiol* 2002; 12: 2659-61.
10. Hayes P.G., Rotstein O.D.: Gastrointestinal Phytobezoars: Presentation and Management. *Can J Surg* 29: 419-420, 1986.
11. Nichols T.W. jr.: Phytobezoar formation: a new complication of cimetidine therapy. *Ann Intern Med* 95:70, 1981.
12. Teng HC, Nawawi O, Ng KL, Yik YI. Phytobezoar: an unusual cause of intestinal obstruction. *Biomed Imaging Interv J* 2005; 1(1). Available online at <http://www.bijj.org/2005/1/e4>
13. Teo M, Wong CH, Chui CH, et al. Food bolus – an uncommon cause of small intestinal obstruction. *Aust N Z J Surg* 2003; 73 (Suppl 1): A47
14. Dreznik Z. Intestinal “lucid interval” and phytobezoar ileus. *Lancet* 1989;9:624–5.
15. Wyatt JP, Haddock G, Aitken RG: Gastric phytobezoar: Unusual association and resolution. *Postgrad Med J* 1993;69:659-660.
16. Serour F, Dona G, Kaufman M: Acute intestinal obstruction due to phytobezoars in Israel: Role of oranges and persimmon fruits. *J Chir (Paris)* 1985;122:299-304.
17. Moshe Rubin, Mordechai Shimonov, Franklin Grief, Zeev Rotestein, Shlomo Lelcuk Phytobezoar: A Rare Cause of Intestinal Obstruction *Digestive Surgery* 1998;15:52-54
18. Kaplan O, Klausner JM, Lelcuk S, Skornick Y, Hammar B, Rozin R: Persimmon bezoars as a cause of intestinal obstruction: Pitfalls in their surgical management. *Br J Surg* 1985;72:242-243.