Closed-perforation of gastric fundus and gastric outlet obstruction caused by a giant gastric trichobezoar: A case report

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ABSTRACT

A bezoar is a mass formed because of the accumulation of indigestible material in the stomach and/or small intestine. Bezoars are rare but occasionally occur with acute abdomen findings. Bezoars form as a result of changes in the gastrointestinal system anatomy and physiology and repetitive exposure to the ingested material. These materials can include vegetables with high fiber content (phytobezoars), non-animal origin fats, hair (trichobezoars), or drugs such as anti-acids (pharmobezoars). Gastric bezoars frequently occur after gastric surgery. Psychiatric disorders such as trichotillomania (an irresistible urge to remove and swallow one’s own hair) are frequently the underlying reason in patients without a history of gastric surgery. In this article, we presented a giant gastric trichobezoar obstructing outlet and causing closed-perforation and abscess formation of gastric fundus in a 30-year-old woman.

Keywords: Bezoar, trichobezoar, closed-perforation of stomach, gastric outlet obstruction

INTRODUCTION

Bezoars are masses comprising of non-digested and/or partially digested food debris or foreign particles accumulating in the stomach or the small intestine. Bezoars usually develop in the stomach or the small intestine; however, bezoar formation in the colon is rare. These masses can be classified as bezoars that are formed because of a high-fiber diet (phytobezoars), indigestible materials such as hair, fingernails, and animal fat (trichobezoars) or accumulation of anti-acids or anti-hypertensive drugs (pharmobezoars). The most common form in clinical practice is phytobezoars (1).

Stomach bezoars usually develop following gastric surgery. Diabetes mellitus, high fiber diet, insufficient chewing function, dental pathologies, myotonic muscular dystrophy, or cimetidine treatment may rarely be the cause. Among those patients without a history of gastric surgery, the most common underlying pathology is psychiatric disorders such as trichotillomania (1, 2).

Bezoars may be clinically asymptomatic or present with chronic abdominal pain, dyspepsia, gastric ulcers, gastrointestinal hemorrhage, perforation due to pressure necrosis, intestinal intussusception, and ileus. Adult mortality rates of up to 30% related to gastrointestinal bezoars have been reported (3).

Our aim in this paper is to present a case of giant gastric trichobezoar treated with emergency surgical intervention, thereby stressing the importance of clinical doubt for correct diagnosis before complications arise because bezoars can be asymptomatic or present with nonspecific symptoms.

CASE PRESENTATION

A 30-year-old female patient, five days after premature birth and while under follow-up in the Obstetrics and Gynecology Clinic was checked for the need for surgery due to abdominal pain, nausea, and hematemesis. The vital signs were stable and within the normal limits. The body temperature was 37.2°C. There was mild abdominal distention with epigastric tenderness and guarding. The laboratory findings were normal except for a white blood cell count of 13200/mm³ and a CRP finding of 95 mg/L. Abdominal computerized tomography (CT) showed presplenic abscess formation and a giant intragastric mass to -

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trist. Depressive behavioral disorder was diagnosed accompanying trichophagia and treatment was planned. The patient was discharged from the hospital on postoperative day 10 with no complications.

**DISCUSSION**

Bezoars are masses of non-digested food particles and fibrous materials in the gastrointestinal system (GIS). They can be found anywhere in GIS, although they most frequently form in the stomach and the small intestine (3, 4).

Among bezoars, phytobezoars are the most common and the best known group. Phytobezoars are reported to be developing in up to 70% of adults having undergone gastric surgery (3). The main cause in the pathophysiology of bezoars after gastric surgery is large masses of food rapidly passing to the duodenum before being digested because of decreased acid-pepsin secretion or pyloric dysfunction. Diabetic gastroparesis, pathologies such as chronic gastritis causing decreased gastric acidity and mucus secretion, and the resulting impairment of digestion and motility are other major causes of phytobezoar formation (4). Phytobezoars can also form in patients with chewing dysfunction or dental problems because of excess consumption of high fiber food such as citrus fruits, fresh beans, fig, and fruit seeds (5). For patients without a history of abdominal surgery, phytobezoars are responsible for less than 2% of the cases of small intestinal obstruction (6).

Trichobezoars are formed by oral ingestion of mostly human hair and rarely animal fur and/or wool and filaments from furniture (6). However, the mechanism for the formation of trichobezoars is obscure. According to the most popular hypothesis, bezoars originate from strands of hair in the gastric folds combining with mucus and food particles and growing in size. However, this hypothesis fails to explain why hair strands hold on to the stomach in the first place (7). Trichobezoars are usually found in young female patients with mental retardation and/or psychiatric disorders such as trichotillomania or trichophagia. Trichobezoars are usually accompanied by psychiatric disorders such as obsessive compulsive personality disorder, pica, anorexia nervosa, or as in our case, depressive behavioral disorder.

Gastrointestinal system bezoars can be asymptomatic and incidentally diagnosed as well as presenting with gastrointestinal hemorrhage, ulcers, perforation, or intestinal obstruction (8). Stomach bezoars can cause nonspecific symptoms such as epigastric tenderness and dyspepsia or result in nausea and vomiting because of gastric outlet obstruction or abscess formation because of closed perforation.

Because the treatment of complicated GIS bezoars includes surgical intervention, a correct preoperative diagnosis of bezoar is essential, which itself requires clinical doubt. In addition to detailed patient history and careful physical examination, upper GIS endoscopy and radiological tests such as abdominal X-ray, ultrasound, or abdominal CT are helpful in diagnosis. Among these methods, upper GIS endoscopy and abdominal CT with contrast are the most reliable diagnostic tools (9). Upper GIS endoscopy is especially useful in determining the type of bezoar in cases with gastric bezoars. In addition to its diagnostic use, endoscopy has been used therapeutically in the management of bezoars. Endoscopic treatment options involving the removal of gastric trichobezoars after crumbling them by baskets, snare, and lithotripter forceps have been unsuccessful (10). Phytobezoars, on the other hand, can be treated medically with motility stimulating, enzymatic, pro-kinetic, and mucolytic agents as well as endoscopically by fragmenting them with snares and forceps.

In abdominal CT scans, bezoars appear in GIS as well demarcated, oval masses with air bubbles in them. According to the localization of the bezoar mass in the GIS lumen, proximal segments are dilated and distal segments in normal caliber (9).

For our patient who was evaluated for abdominal pain, nausea, and hematemesis, intragastric mass in the abdominal CT and a history of trichophagia were alerting signs for gastric trichobezoar. Because of the abscess pouch in the CT scan near the fundus, in front of the spleen, and having air fluid levels suggesting a closed perforation, a decision for emergency surgical intervention without prior endoscopy was made.
CONCLUSION
Gastrointestinal bezoars can be silent until they become complicated and symptomatic. In patients with chronic abdominal pain with no signs of malignancy in laboratory and radiological tests, medical history should be elaborated and for those with a positive history of psychiatric disorders or trichophagia, bezoar should be suspected.

Informed Consent: Written informed consent was obtained from patient who participated in this case.

Peer-review: Externally peer-reviewed.


Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study has received no financial support.

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