

CASE REPORT

TRICHOBEZOAR: UNCOMMON PRESENTATION OF GASTRIC OUTLET OBSTRUCTION, A CASE REPORT

By

Abdalla Megally, Al-Sormi M.

Department of General Surgery, Faculty of Medicine and health Sciences, Sana'a University, Yemen

Correspondence to: Abdalla Megally, Email: dr.abmegally@hotmail.com

Aim: To report uncommon two cases with trichobezoar obstructing the gastric outlet within six months interval at our hospital.

Methods: Two girls, 9 and 6-years old, presented with epigastric pain, nausea and non bilious vomiting about 6 and 4days before admission. There was a history of early satiety. By examining the abdomen a hard upper abdominal mass was palpated in each. Both mothers noticed irregularity in lengths of their daughter's hair but they don't know if they swallow their own hair during the previous 2-years. Ultrasound, gastroscopy, barium meal x-ray and CT scan proved the presence of a large foreign body in the stomach of each girl. Surgical laparotomy revealed large hairballs obstructing pyloric canal and extends through the duodenum into the proximal part of jejunum.

Results: Through gastrostomy the hairballs extracted and the stomach closed in 2-layer sutures. Postoperative course was uneventful and no recurrence noted during the next 16 and 10 months of follow-up.

Conclusion: This report demonstrates 2-uncommon (not rare) foreign bodies which impacted and obstructing the outlet of the stomach incidentally discovered within a short period interval without recurrence after surgery. We believe that the surgical trauma would be enough to cut the habit of hair biting and prevent recurrence of trichobezoars.

Keywords: Female habits of hair biting, Gut-obstruction, Rapunzel's.

INTRODUCTION

Bezoar is a term used to describe a concretion of undigested materials uncommonly found in the stomach and intestine in rare occasions. The term bezoar, believed to be derived from the Arabic "badzehr" or Persian "badzahr" (means antidote or counter poison), is applied to concretions of various foreign bodies formed in the stomach and sometimes extend to the intestine of both men and animals. Bezoars are found in the stomach as a result of ingestion of indigestible organic materials such as hair (trichobezoar), vegetable and fruit fibers (phytobezoar), medication bezoar (resins or antacid therapies and contrasts),(1-3) but rarities such as mycotic bezoars comprising of *Candida* species also been described in literature. Bezoar also can be a concretion of tar, shellac or resin in painters and furniture workers. Trichobezoar is the most common type comprising well

over half the reported cases, with phytobezoar next (about 40%).(2,4) In this work, we reported two cases of trichobezoar presented to our hospital with gastric outlet obstruction within 6 month interval.

CASE REPORT

Two young girls were admitted to the hospital; the first 9-years old girl was referred to our hospital from another city and admitted on October 24th 2006, while the second 6-years-old girl was admitted on May 13, 2007. The presenting complaints included recurrent attacks of abdominal pain, nausea followed by non-bilious vomiting and upper abdominal distention for 5 and 2 days before admissions. Both mothers mentioned the presence of similar, milder, attacks of abdominal pain with early satiety during the previous few weeks before the presenting illness. The first girl was a pupil in the 3rd

stage of primary school and she was the 4th child in the family. Her mother described her as hyper active, sensitive and sometimes nervous where she bites her finger-nails and hair when she is anxious and the mother gave a positive history of seeing hairs in her mouth during wake-up time. The second patient was a pupil in the first-year of education and the 2nd daughter in the family who was quit calm, beautiful with pretty hair and therefore the mother believed that bad persons with impish eyes affected her daughter which made her hair to fall rapidly to become very short within one year but no-one of the family noticed her to swallow her own hair. By physical examination the patients appeared of normal body built, relatively normal nutritional status and normal short hair distributions with no pallor, cyanosis or jaundice noticed clinically. The behavior and mental scoring was normal for both patients. Inspection of the abdomen of both girls revealed fullness of epigastria. Palpation revealed mobile, hard, non tender, oblong epigastric mass extended beneath left costal margin and the examining hand can be insinuated between costal margin and the mass (not spleen). Rectal examination revealed normal stool, no rectal mass or tenderness in both. Complete blood count, urine and stool analysis were within normal range except mild leucocytosis (11000/dl) in the first patient. Abdominal ultrasound showed hyperechoic mass in the epigastria with normal liver and spleen in both patients. Plain x-ray of the abdomen showed normal intestinal gas pattern but barium meal showed a large filling defect occupy most of the gastric lumen with delay evacuation of the contrast into the small intestine with widening of the C-loop of the duodenum and thick mucosal folds (Fig. 1). Both patients were evaluated by pediatricians for their fitness to surgical intervention and consent obtained. Both patients were scheduled for surgical exploration the 3rd day after admission. Through a midline laparotomy, the stomach was found distended with intraluminal hard mass extended into the duodenum and about 20 cm of the jejunum. Anterior longitudinal gastrostomy revealed a large hairball occupying nearly whole the stomach and continued into the small intestine which was delivered intact by aid of milking-up the intestinal tail of the trichobezoar in both patients. The bezoar mass was composed of filamentous strands of hair which organized as the configuration of the stomach and duodenum (Fig. 2). The gastrostomy closed in two-layers by slow-absorbable sutures and the abdomen closed in layers without drain. Both patients were mobilized at the end of operative day and allowed oral intake in the 4th postoperative day. The postoperative courses were uneventful and consultation of psychiatrist recommended no further specific management other than strict observation for recurrence suggesting that the surgical trauma would be enough to cut the habit of hair eating. At 12 month follow-up for the first patient and 6 months for the second case no recurrence observed in both girls who looked well of normal nutrition and growth.

DISCUSSION

Bezoars are concretions formed in the stomach of men and animals usually composed of indigestible organic materials. Trichobezoar (hairball), usually the patient's own hair, is the most common type (>50%) of the reported cases with the phytobezoar next (40%). Trichobezoar may also include some other indigestible fibers as animal hair, cotton wool, nylon, strings and vegetable fibers in psychotic patients.^(1,2,3) Although bezoars are relatively uncommon, they are not rare. The first case of trichobezoar was reported by Baundamant in 1779. Up to 1938, DeBakey and Ochsner collected 303 recorded cases, and Tondreau and Kirklin found 100 additional cited cases during the ensuing 12 years. Their incidence is very low and the risk is greater among mentally retarded or emotionally disturbed children. More than 80% of trichobezoar occurred in patients younger than 30 years old, and more than 90% of trichobezoar were found in females younger than 16-years old that show overt psychic or mental abnormalities.⁽³⁻⁵⁾ Trichobezoar extended continuously from the stomach through the entire length of the small bowel, or even to the large bowel was coined by Voghan and associates in 1968, as the "Rapunzel syndrome" a variant more hazardous than gastric trichobezoar in causing obstruction, multiple ulcerations or perforations due to pressure necrosis.⁽⁶⁻⁸⁾ The cause is not known although it is believed to be habitual biting of hair and nails by patients suffering of some personality maladjustment. Bezoars are asymptomatic until it reaches a large size to irritate, ulcerate or obstruct the stomach where vomiting and pain lead patient to seek medical advice. Gastric ulceration may cause haematemesis and melaena or anemia in neglected cases.⁹ By physical examination; a big, solid, movable and non tender mass is palpable in the upper half of the abdomen where the hand can be insinuated between the mass and the left costal margin. The diagnosis of trichobezoar can be made clinically once the condition is suspected in girls or young women with a history of trichophagia. Ultrasound is the primary imaging modality for the evaluation of an upper abdominal mass in children.⁽⁹⁾ Large bezoars are easily diagnosed by the ultrasonographic hyperechoic appearance and upper gastrointestinal contrast study, where barium meal shows intragastric mottled filling defect with shaggy edges. Gastroscopy also, gives the correct diagnosis as well as small bezoars can be broken-up and dispersed by endoscope.⁽¹⁰⁾ Computed tomography usually shows a mobile intra-gastric mass consisting of "compressed concentric rings" with a mixed density pattern due to the presence of entrapped air and food debris.⁽¹¹⁾ Enhanced CT scan was the most diagnostic tool in our patients (Fig. 3). The goal of therapy is removal, endoscopic fragmentation, if small, or dissolution of the bezoar and prevention of its recurrence. The treatment of large bezoar is essentially surgical laparotomy and removing the hairball through anterior gastrostomy. After proper preoperative preparation, midline incision was performed. Special care should be practiced to exclude

the abdominal cavity by packs to minimize contamination and peritonitis from intra gastric contents (slimy, foul and putrid trichobezoar). At the time of laparotomy, careful inspection and palpation of the intestine to exclude possible extension of the trichobezoar through it (Rapunzel syndrome) which may cause postoperative intestinal obstruction.⁽⁶⁻⁸⁾ The complications of trichobezoar include gastric or intestinal obstruction, intussusception, ulceration, perforation, hemorrhage, peritonitis and rarely obstructive jaundice when the bezoar obstructs the papilla.^(8,9,11) The reported operative mortality is almost zero in patients who were diagnosed and treated in time without complications, but the mortality rate increases to about 20% in the presence of complications. Trichobezoar extending to the intestine (Rapunzel syndrome) may fragment, detach and lodge distally to present with intestinal obstruction, ulceration, perforation and peritonitis.^(9,11) Follow-up during one year for the first case and 6 months for the second, revealed no recurrence of bezoar formation suggesting that surgery is traumatic enough to prevent patients habit of hair ingestion.



Fig 2. Surgically extracted trichobezoar; showing a cast of stomach, duodenum and part of jejunum.

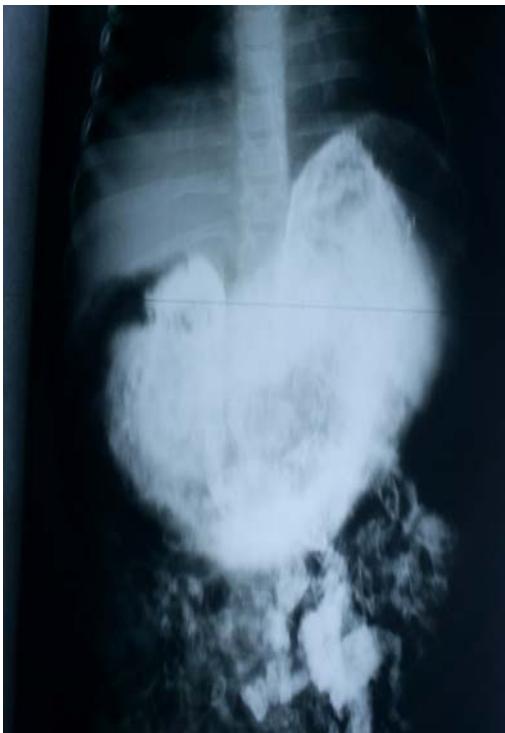


Fig 1. Barium meal radiography showing intragastric mass.

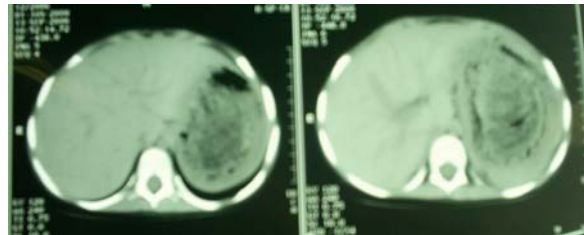


Fig 3. CT scan showing intragastric concentric mass of the 2nd patient.

REFERENCES

1. DeBakey ME, Jordan GL. Foreign Bodies of the Esophagus, Stomach, and Duodenum. In Schwartz SL, Ellis H, editors. *Maingot's Abdominal Operations*, 8th edition. Norwalk, Connecticut; Appleton-Century-Crofts. 1985;667-83.
2. Andrus CH, Ponsky JL. Bezoars. classification, pathophysiology and treatment. *Am J Gastroenterol*. 1988;83:476-8.
3. DeBakey ME, Ochsner A. Bezoars and concretions: A comprehensive review of literature with an analysis of 303 collected cases and a presentation of 8 additional cases. *Surgery*. 1938;4:934. and *Surgery*. 1939;5:132.
4. Tondreau RL, Kirklin BR. Bezoars of the stomach. *Surg Clin N Am*. 1959;30:1097.
5. Hamilton K, Potter D. Foreign Bodies and Bezoars. In: Feldman M, Scharschmidt BF, Sleisenger MH, editors. *Gastrointestinal and Liver Disease*. 6th edition. Philadelphia: W.B, Saunders Company. 1998;331-5.

6. Vaughan ED, Sawyers JL. The Rapunzel syndrome: an unusual complication of intestinal bezoar. *Surgery*. 1968;63:339. (Quoted in ref. no 1)
7. Singla SL, Rattan KN, Kaushik N, Pandit SK. Rapunzel syndrome: a case report. *Am J Gastroenterol*. 1999;94:1970-1.
8. Deslypere JP, Praet M. An unusual case of the trichobezoar: The Rapunzel Syndrome. *Am J Gastroenterol*. 1982;77:467.
9. Wadlington WB, Rose M, Halcomb GW Jr. Complications of trichobezoar: a 30-year experience. *South Med J*. 1992;85:1020-22.
10. Newman B, Girdany BR. Gastric trichobezoar: Sonographic and Computed tomographic appearance. *Pediatric Radiology*. 1990;20:526-7.
11. Alsafwah S, Alzein M. Small bowel obstruction due to trichobezoar: role of upper endoscopy in diagnosis. *Gastrointestinal Endoscopy*. 2000;52:784-6.
12. Gayer G, Jonas T, Apert S, Zissin R, Katz M, Amitai M, Hertz M. Bezoars in the stomach and small bowel- CT Appearance. *Clinical Radiology*. 1999;54:228-32.
13. Nomura H, Kitamura T, Takahashi Y, Mai M. Small bowel obstruction during enzymatic treatment of gastric bezoar. *Endoscopy*. 1997;29:424-6.