

TRICHOBEZOAR WITH LARGE BOWEL OBSTRUCTION IN CHILDREN – CASE REPORT

ES Boia¹, Camelia Popescu², Maria Trailescu¹, A Pavel²

¹University of Medicine and Pharmacy “Victor Babes” Timisoara

²Clinical Emergency Hospital for Children ”Louis Turcanu” Timisoara - Pediatric Surgery and Orthopedics Department

Abstract

A trichobezoar is a mass of cumulated hair within the gastrointestinal tract. Stomach is the common site of occurrence. Intestinal obstruction due to trichobezoar is extremely rare. In this report, we describe one case of an atypical localization of a trichobezoar in an 11-year-old girl, who presented with large bowel obstruction. We performed an exploratory laparotomy and we diagnosed a movable intraluminal tumor of the left angle of transverse colon. Treatment consists of milking the contents to the rectum.

Key words: trichobezoar, children, bowel obstruction.

Introduction

For centuries, different types of bezoars (accumulations of foreign matter) have been known to occur in the stomach and intestines of animals and humans. Trichobezoars are classically described as consisting mostly of hair, and are often noted in psychologically impaired children who also have trichotillomania (a compulsion to pull out one's hair)^[1]. Rapunzel's syndrome, due to compulsive hair-chewing, results in the formation of a long-tailed trichobezoar, a documented variant of trichobezoars.^[1]

Patients with bezoars often present with abdominal pain, anorexia or vomiting, anemia, and malnutrition of different degrees. Signs and symptoms of bowel obstruction or perforation may occur. Occasionally the patient is entire asymptomatic^[2].

Various imaging modalities have been recommended for detection of bezoars^{[3],[4]}. The imaging findings are helpful in diagnosing trichobezoar. *The conventional radiography* shows a masse of opaque soft tissue in a swollen stomach^{[3],[4],[5]} and can reveal bowel obstruction with dilated small bowel loops with fluid and air-filled loops proximal to the site of obstruction and distal collapsed small bowel. A calcified rim may delineate the edge of the bezoar^{[3],[5]}. *The ultrasonography* shows a typical curvilinear trichobezoar with bright echogenic band, this does not allow transmitting the ultrasound waves which generate a shadow over the left upper quadrant. The high echogenicity of hair and the presence of multiple

acoustic interfaces created by trapped air and food limits the ultrasonography of the trichobezoars^{[3],[4],[5],[6]}. Both, *the contrast radiography and the endoscopy* of the upper GI tract are the diagnostic procedures of choice for establishing the diagnosis^{[3],[6]}. The upper GI contrast radiography confirms the existence of the trichobezoar and might detect other complications such as gastric ulcers. In addition, the upper endoscopy is definitively the diagnostic support for trichobezoar; it might be used for endoscopic retrieval of proximal small trichobezoars^[5]. *The computed tomography* (CT-scan) is the most useful diagnostic tool in patients with bezoars because it reveals the localization of the bowel obstruction; it shows also a well-defined intraluminal mass of the bezoar in the transitional zone of the obstruction. A mottled gas pattern in the mass is reported characterizing the bezoar, and it is supposed to be air bubbles retained within the bezoar^{[6],[7]}. Recently, researchers have recommended *magnetic resonance imaging* (MRI) for the evaluation of small-bowel disease. Fast imaging techniques coupled with advantages of breath holding improved MRI visualization of bezoars. Therefore, MRI is found to be better support for determining both the site and the cause of small-bowel obstructions. MRI shows the bezoar as a mass in the small bowel containing mottled and confluent low signal intensities on both T1- and T2-weighted MR images^[7].

Treatment

Once the diagnosis is established, trichobezoar removal should be undertaken to avoid the complication of obstruction, hemorrhage, ulceration, perforation and peritonitis and to reestablish proper nutrition^[2].

The upper endoscopy of GI tract might be used for endoscopic retrieval of proximal small trichobezoars. Definitive treatment consists of exploratory laparotomy with trichobezoar removal commonly done by gastrotomy and/or enterotomy or milking of contents to the rectum. If complicated, the trichobezoars can be treated by subtotal gastrectomy

and/or intestinal resections. If trichobezoar is into the colon, then colonoscopic evacuation can be performed. Medical treatment is usually inadequate.

Case report

We present the case of a girl R.A., 11 years'old, coming from urban area, transferred in our clinic with the diagnosis: subocclusive syndrome.

History and clinical findings:

She had a history of two weeks of colicky abdominal pain, nausea, vomiting, decreased oral intake, changes in bowel movements. At admission in the hospital she presented altered general state, puffed eyes, pale teguments, bilious vomiting, and constipation. The distended abdomen was diffusely sensitive to palpation, with no sign of peritoneal irritation. Abdominal auscultation revealed static intestinal sounds (borborygmi). Digital rectal examination revealed empty rectal ampulla, without presence of any pathological material on the hand gloves. Next day she presented signs of peritoneal irritation in the left abdomen.

Paraclinical:

The blood count showed a marked leucocytosis, high number of thrombocytes, high acute phase reactants, increased level of urea, and signs of acute dehydration with hyponatremia.

Abdominal X-ray showed multiple air-fluid levels without presence of air under the diaphragm, while the ultrasound examination was negative for any

abnormality. A positive diagnosis of intestinal obstruction was established based on the previous examinations.

Treatment:

Preoperative care consisted in gastric decompression using nose-gastric tube, parenteral nutrition, antibiotics (piperacilin tazobactam) and infusion with electrolytes.

Surgery –consisted of the following steps:

- *median abdominal incision;
- *abdominal cavity exploration- revealed normal stomach, duodenum and ileum, inflammatory adhesions at the first jejune loops with a small blocked perforation at 5-7cm from duodeno-jejunal junction. The thorough exploration of the large bowel revealed one intraluminal movable tumor of the left angle of transverse colon which could be milking to the rectum; this intraluminal tumor retained in this site compressed the first jejunal loop, affecting the vascular supply with secondary ischaemic perforation;
- * lysis of adhesions, jejunoraphy in double layer;
- *lavage of the abdominal cavity using NaCl 0.9%;
- *double drainage of the abdominal cavity, suture of the abdominal wall;
- *anal dilatation and pull-out the tumor which was a trichobezoar.

The postoperative care consisted of antibiotics (piperacilin tazobactam, solution of parenteral nutrition (glucosis, aminoacids), electrolytes, antalgic drugs.



Fig .1. The trichobezoar.

Discussions

Bezoars are foreign bodies in the lumen of the digestive tract. The lumen size increases in time by the accumulation of ingested nonabsorbable food or

fibers^{[3],[4],[8],[10]}.The bezoar is mostly caused by the presence of indigestible substance in the lumen. Some substances encourage stickiness and concrete formations^{[6],[8],[11]}.Bezoar occurs mainly in female

children, who chew and swallow their hair (trichobezoar), vegetable fibers (phytobezoar), persimmon fibers (diospyrobezoar), or semi-liquid masse of drugs (pharmacobezoar)^{[3],[4],[11]}.

Trichobezoar (hairball) is a complication of trichotillomania. It consists of recurrent hair pulling, and subsequent trichophagia or mouthing of the hair^{[5],[8],[9],[10]}.

During the time, these substances are retained by mucus and become enmeshed; this yields a mass having the shape of the stomach localization where they are usually found^{[8],[11]}. These substances attend large size due to the chronicity and delayed investigation of the affection. The age of occurrence of bezoars has been reported to range between 1 and 56 years old^{[3],[5],[8]}. Although about 1 of 2000 children suffer from trichotillomania, trichophagia is rarely seen, and a bezoar does not occur in all children with trichophagia^{[3],[10]}. Reduced intestinal motility is the most quoted factor in the intestinal bezoar formation. Bezoars mostly originate at the level of the stomach^{[3],[5],[8],[11]}, it is probably related to high fat diet causing unspecific symptoms like epigastric pain, dyspepsia, and postprandial fullness. The stomach is not able to exteriorize hair and other substance out of the lumen because the friction surface is not sufficient for propulsion by peristalsis. The bezoars might also

occur with GI bleeding (6%) and intestinal obstruction, or perforation (10%)^{[3],[11]}. The most common sites of obstruction are the gastric outlet, or duodenum. Obstructions of distal parts of the small bowel or the large bowel are extremely rare.^[3] The examination of the hair content in stool would establish the diagnosis, but usually it is not done^{[3],[4]}. It is mandatory to perform a thorough exploration of all the small intestine and the stomach searching for retained bezoars.

Conclusions

Trichobezoar is a rare clinical entity. Stomach is the common site of occurrence. In this case the large bowel obstruction occurred because of the trichobezoar itself which have migrated from stomach and have stopped in the splenic angle of transvers colon. The retained trichobezoar in this site compressed the first jejunal loop, affecting the vascular supply with secondary ischaemic perforation. This case was diagnosed in a complicated stage (mecono-inflammatory bowel obstruction) so the patient will have high risk to develop early and tardive postoperative complication (peritoneal absceses, intestinal adhesions). After surgery the patient was treated in collaboration with a pschyatryc doctor, too.

References

<ol style="list-style-type: none"> 1. Andrus CH, Ponsky JL. Bezoars: classification, pathophysiology and treatment. <i>Am J Gasetoenterol.</i> 1988;83:476-478. 2. Stephen L.Gans and Edward Austin: Foreign bodies. <i>Ashcraft Holders- Pediatryc surgery</i> (second edition);86-87. 3. Shadwan A, Mohammad A. Small bowel obstruction due to trichobezoar: Role of upper endoscopy in diagnosis. <i>Gastrointest Endoscop</i> 2000;52:784-6 4. Roche C, Guye E, Coinde E, Galambrun C, Glastre C, Halabi M, et al. Trichobizoard: À propos de 5 observations. <i>Arch Pidiatr</i> 2005;12:1608-12 5. Hoovera K, Piotrowskib J, Pierreb K, Katzc A, Goldsteinb AM. Simultaneous gastric and small intestinal trichobezoars: A hairy problem. <i>J Pediatr Surg</i> 2006;41:1495-7 6. Billaud Y, Pilleul F, Valette PJ. Mechanical small 	<ol style="list-style-type: none"> bowel obstruction due to bezoars: Correlation between CT and surgical findings. <i>J Radiol</i> 2002;83:641-6. 7. Lee JM, Jung SE, Lee KY. Small-bowel obstruction caused by phytobezoar: MR imaging findings. <i>AJR Am J Roentgenol</i> 2002;179:538-9. 8. Wang PY, Skarsgard ED, Baker RJ. Carpet bezoar obstruction of the small intestine. <i>J Pediatr Surg</i> 1996;31:1691-3. 9. Ganpathi IS, Cheah WK. Laparoscopic-assisted management of small bowel obstruction due to phytobezoar. <i>Surg Laparosc Endosc Percutan Tech</i> 2005;15:30-2 10. Salaam K, Carr J, Grewal H, Sholevar E, Baron D. Untreated trichotillomania and trichophagia. <i>Psychosomatics</i> 2005;46:362-6. 11. Chintamani, Durkhure R, Singh JP, Singhal V. Cotton Bezoar: A rare cause of intestinal obstruction: Case report. <i>BMC Surg</i> 2003;4:5.
--	---

Correspondence to:

Eugen Boia,
Gospodarilor Street, No. 42,
Timisoara 300778,
Romania,
E-mail: boiaeugen@yahoo.com