Research and Analysis Journals 6(06): 01-04, 2023

e-ISSN: 2589-9228, p-ISSN: 2589-921x

Case Report

Small-Bowel Obstruction Secondary to Trichobezoar in Young Children: A Case Report

Roukiya Omar[a]*, Loubna Aqqaoui[a], Houda Oubejja[a], Hicham Zerhouni[a], Mounir Erraji[a], Fouad Ettayebi[a]

[a]Department of pediatric surgical emergencies, children's hospital of Rabat, Morocco, Faculty of medicine and pharmacy, University Mohammed V, Rabat, Morocco.

Abstract:

Background: The term bezoar refers to an intraluminal masse in the gastrointestinal system caused by the accumulation of indigestible ingested materials. Trichobezoar is a compact conglomeration of swallowed hair and constitutes less than 6% of all bezoars. The stomach is the common site of occurrence and many patients may remain asymptomatic or present a mild form of the disease. Intestinal obstruction due to trichobezoar is an extremely rare complication. The clinical findings of bezoar-induced ileus do not differ from those of mechanical bowel obstruction due to other causes and they are rarely reported in the pediatric age group.

Case presentation: we report a case of acute small-bowel obstruction due to trichobezoar in a three years old boy with no history of eating disorder which presented an abdominal distention.

Conclusion: This case serves to raise awareness of trichobezoar as a diagnosis in young children who present with abdominal pain, palpable mass, and signs of acute small-bowel obstruction

Keywords: trichobezoar; small-bowel obstruction; children

Introduction:

Bezoars are conglomerations of undigested foreign material retained in the gastrointestinal tract because the pylorus acts as a natural impediment to further passage.[1] Such foreign material may be fibers and debris of plants, vegetables, and fruits (phytobezoar), persimmons (diospyrobezoar), hair (trichobezoar), medications (pharmacobezoar), and milk protein (lactobezoar). Phytobezoars are the most common type, while trichobezoars account for less than 6% of all cases of bezoars found in humans.[2] Although they were first described in humans in 1779 affecting a 16-year-old boy, trichobezoars are a phenomenon that almost exclusively affects females in the second and third decades of life and are quite uncommon in the pediatric age group.[3, 4] Trichobezoars are generally seen in individuals with trichophagia, a psychiatric disorder that usually occurs during childhood and in young adults with or without trichotillomania (hair pulling). Many patients may be asymptomatic, but some bezoars may produce epigastric pain, early satiety, nausea, vomiting, and weight loss. Complications may manifest as gastric obstruction or bleeding. The passage of a bezoar into the small bowel or large bowel may cause intestinal obstruction. [5] Since a psychiatric disorder underlies trichobezoar, recurrence is inevitable if insufficient psychiatric support is provided after surgical treatment. [6]

In this report, we describe a case of an atypical location and presentation of a trichobezoar in a three years old boy presented with abdominal distention.

Case presentation:

We report the case of a 3-year-old boy who consults in the pediatric emergency room for 4 days of abdominal distension without fever or vomiting with a history of chronic constipation. On admission, his general condition was preserved, the child had a low weight but the parents did not report any particular eating disorder. No abdominal mass was palpated at that time. The plain abdominal radiography showed significant small-bowel distention with air-fluid levels (figure 1).

Figure 1: plain abdominal X-ray showing a distended loop of small bowel with multiple air-fluid levels.

No biliary gastric stasis was noted and the introduction of a rectal tube had objectified fetid diarrhea. The patient was put on antibiotics and the distension improved but the levels on the X-ray persisted. Further questioning of the mother revealed that the child was regularly chewing sewing threads, and examination revealed a mobile mass under the umbilic.

An abdominal computed tomography was then requested in front of this progressive ileus with a palpable mass. It revealed a heterogeneous intraluminal mass containing air bubbles responsible for digestive distention upstream evoking a trichobezoar (figure 2).

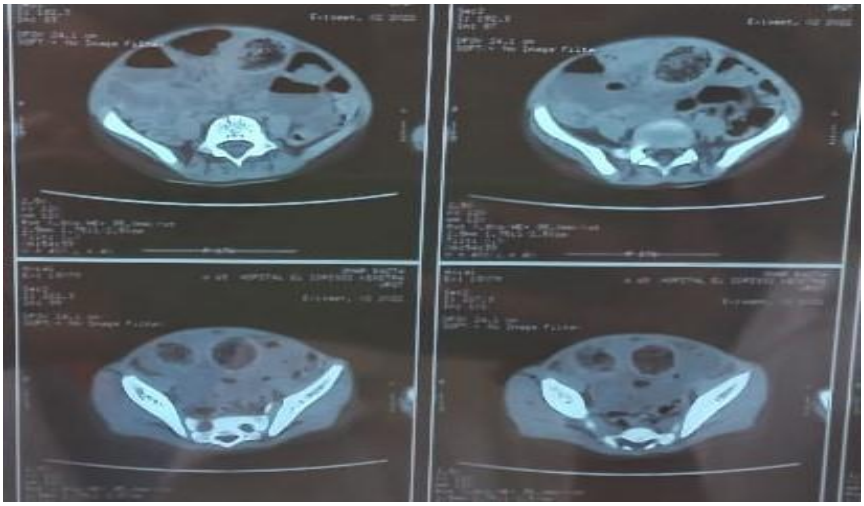

Figure 2: abdominal CT imaging of intraluminal bezoar and mottled gas pattern in small bowel with wall thickening

The patient is then admitted to the operation room, the surgical exploration after laparotomy revealed a transition zone in the middle of the small intestine with two obstructive intraluminal masses and an inflamed loop wall with multiple adherences around (figure 3).

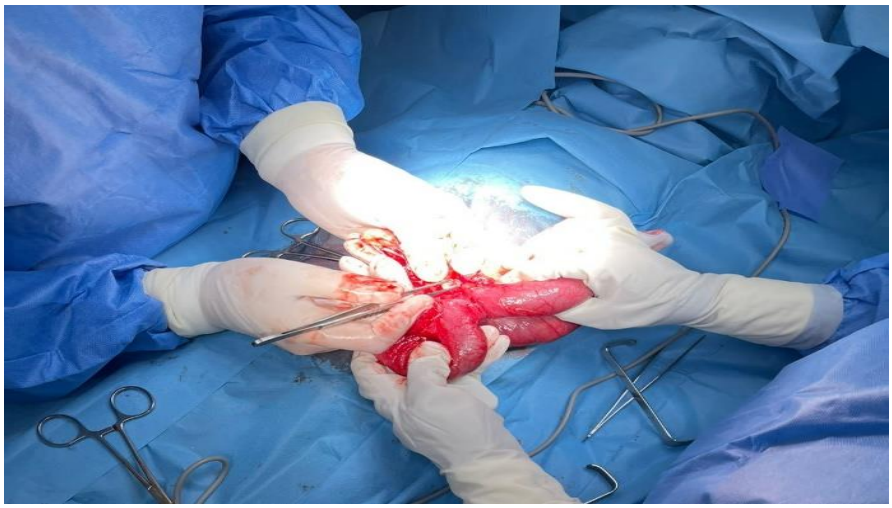

Figure 3: intraoperative images showing distended loops with a bowel masse in the ileum.

The rest of the digestive tract had no other mass, particularly the stomach. The decision was to perform an intestinal resection with

anastomose (figure 4).

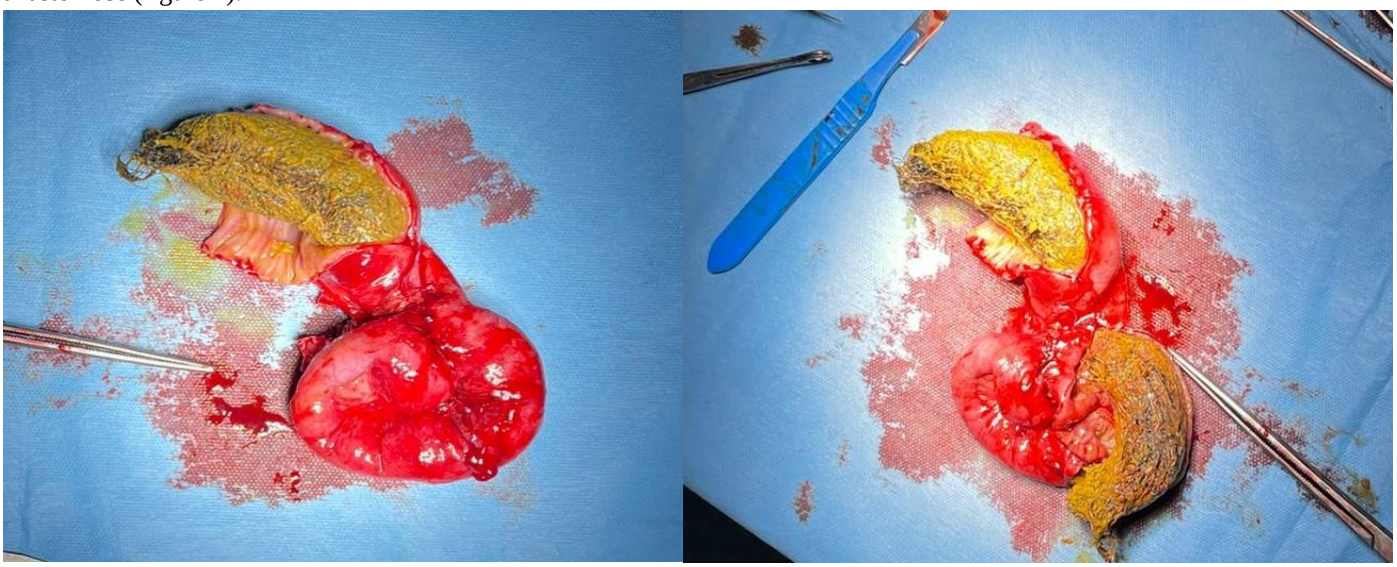

Figure 4 : postoperative images of two trichobezoar after resection

The postoperative course was simple, and the patient was discharged after a week and was referred to a pediatric psychiatrist. No recurrence is known after a year.

Discussion:

Trichotillomania (TTM), the pulling of hair, was first described in 1889 and affects 1 in 2000 people in the general population. Only 30% of these patients will also engage in trichophagia; of those that do, only 1% will eventually develop a trichobezoar and require surgical extraction. [7] Only 14% of TTM are present before the age of 7 years but the condition is more likely to be self-limiting if onset is early. When disease onset occurs during adolescence or adulthood, there is a higher chance of it being chronic and associated with other psychiatric disorders such as anxiety, depression, and obsessive-compulsive disorder. [7]

Trichobezoar is a compact agglomeration of swallowed hair. This condition is usually located in the stomach but it may extend through the pylorus to the small bowel and colon. The resistance of human hair to digestion, the limited peristaltic propulsion due to its smooth surface, and the pyloric valve effect contribute to the accumulation of hair between the stomach mucosal folds and may assume the shape of the gastric lumen. Fragments of the hair conglomerate may become detached and migrate to the small bowel. [8, 9]

Naik et al. reported a mean age of 10.8 years, and 96% were female patients. [10] At least 10% of patients have a history of psychiatric disturbance, behavioral disorders, or mental retardation, and a significant proportion of cases in children were observed in association with recent trauma (death of a family member, recent parental separation, and abuse) or socioeconomic disadvantage. [10, 11]

The clinical findings of bezoar-induced occlusion do not differ from those of mechanical intestinal obstruction due to other causes. Almost all patients have poorly localized abdominal pain. Other symptoms may include abdominal distention, vomiting, nausea, a sense of satiety, dysphagia, anorexia, weight loss, gastrointestinal hemorrhage, and constipation. [12] Anemia can arise from iron malabsorption and/or chronic ulceration, while acute hematemesis is present in 6% of cases. If left undiagnosed, acute bowel obstruction occurs in 26% of patients, and peritonitis from visceral perforation will affect 18% of cases. [10]

Plain abdominal radiography is nonspecific but may be useful to confirm a clinical diagnosis of gastrointestinal obstruction or perforation. [13] Barium studies may show a stomach being occupied by a heterogeneous mass mottled-appearing due to the absorption of contrast material by the trichobezoar. Barium studies may differentiate small-bowel obstruction caused by adhesions from obstruction secondary to an intraluminal trichobezoar. [14] Ultrasound provides no pathognomonic signs, but a hyperechoic curvilinear dense strip at the anterior margin associated with complete shadowing posteriorly has been described.[15] The most valuable method to determine the location and etiology of intestinal obstructions is contrast-enhanced computed tomography (CT). The sensitivity and specificity of the abdominal CT for bezoar-induced ileus are 90% and 57%, respectively. [16] Zissin et al reported that a round, mottled intraluminal mass in the area of obstruction was a pathognomonic CT finding for a bezoar. [17]

Once a trichobezoar is diagnosed, the primary management involves its extraction. They are most commonly removed by gastrotomy and/or enterotomy [5]. If ischemia or perforation is found, gastric and/or intestinal resection will be required. Surgery is the usual modality of choice with laparotomy being the most commonly performed procedure and is associated with a 99% success rate. Endoscopic extraction of trichobezoars is generally ineffective but endoscopy will detect whether a gastric trichobezoar is present. Endoscopy is also valuable when the diagnosis of gastric mass is unclear. [5]

This case was unusual due to the early age of the child, particularly a boy, without any psychiatric history along with the previously unreported mixture of human hair and sewing threads.

Conclusion:

Small bowel trichobezoar causing acute small bowel obstruction in young children is exceedingly rare. It should be suspected in patients that present with abdominal pain, palpable mass, and signs of acute small bowel obstruction. When a history of trichotillomania is absent or not forthcoming, a very high index of suspicion is required to make the diagnosis clinically. Although surgical treatment is well known, its rarity and late presentation preclude the development of new approaches. Laparotomy remains the mainstay of treatment. Secondary prevention is also crucial and requires a psychiatric evaluation and follow-up.

References:

1. Dikicier E, Altintoprak F, Ozkan OV, Yagmurkaya O, Uzunoglu MY. Intestinal obstruction due to phytobezoars: An update. World J Clin Cases. 2015 Aug 16;3(8):721-6.
2. Kwok AMF. Trichobezoar as a cause of pediatric acute small bowel obstruction. Clin Case Rep. 2019 Dec 18;8(1):166-170.
3. Reisfeld R, Dammert W, Simpson JS. Trichobezoar: an uncommon pediatric problem. *Can J Surg*. 1978;21(3):251-252.
4. Sewell IR, Spencer RR. Trichobezoar: an unusual case of perforated gastric ulcer. *Aust N Z J Surg*. 1968;38(1):19-20.
5. García-Ramírez BE, Nuño-Guzmán CM, Zaragoza-Carrillo RE, Salado-Rentería H, Gómez-Abarca A, Corona JL. Small-Bowel Obstruction Secondary to Ileal Trichobezoar in a Patient with Rapunzel Syndrome. Case Rep Gastroenterol. 2018 Sep 18;12(3):559-565.
6. Sehgal VN, Srivastava G. Trichotillomania +/- trichobezoar: revisited. J Eur Acad Dermatol Venereol. 2006 Sep;20(8):911-5.
7. Frey AS, McKee M, King RA, Martin A. Hair apparent: Rapunzel syndrome. *Am J Psychiatry*. 2005;162(2):242-248.
8. HanBin Z, Chunjiang Y, Yi W. Treatment of Children Trichobezoar a Retrospective Study of 11 Cases. Klin Padiatr. 2022 Jul;234(4):215-220.
9. Ohnesorge S, Skari H, Zochowski K, Pekrun EM, Schistad O, Næss PA. Trichobezoar. Tidsskr Nor Laegeforen. 2020 Nov 23;140(17).
10. Naik S, Gupta V, Naik S, Rangole A, Chaudhary AK, Jain P, et al. Rapunzel syndrome reviewed and redefined. Dig Surg. 2007;24(3):157–61.
11. Cook SL, Beaver B, Brislin R, Elitsur Y. Rapunzel syndrome: not just a "hairy tail". *Clin Pediatr (Phila)*. 2011;50(4):372-374.
12. Khattala K, Boujraf S, Rami M, Elmadi A, Afifi A, Sbai H, Harandou M, Bouabdallah Y. Trichobezoar with small bowel obstruction in children: two cases report. Afr J Paediatr Surg. 2008 Jan-Jun;5(1):48-51.
13. Haggui B, Hidouri S, Ksia A, Oumaya M, Mosbahi S, Messaoud M, Youssef SB, Sahnoun L, Mekki M, Belghith M, Nouri A. Management of trichobezoar: About 6 cases. Afr J Paediatr Surg. 2022 Apr-Jun;19(2):102-104.
14. Gorter RR, Kneepkens CM, Mattens EC, Aronson DC, Heij HA. Management of trichobezoar: case report and literature review. Pediatr Surg Int. 2010 May;26(5):457–63.
15. McCracken S, Jongeward R, Silver TM, Jafri SZ. Gastric trichobezoar: sonographic findings. Radiology. 1986 Oct;161(1):123–4.
16. Gayer G, Jonas T, Apter S, Zissin R, Katz M, Katz R, Amitai M, Hertz M. Bezoars in the stomach and small bowel--CT appearance. Clin Radiol. 1999;54:228–232
17. Zissin R, Osadchy A, Gutman V, Rathaus V, Shapiro-Feinberg M, Gayer G. CT findings in patients with small bowel obstruction due to phytobezoar. Emerg Radiol. 2004;10:197–200.