Scholars Journal of Medical Case Reports
Abbreviated Key Title: Sch J Med Case Rep
ISSN 2347-9507 (Print) | ISSN 2347-6559 (Online)
Journal homepage: https://saspublishers.com

OPEN ACCESS

Radiology

Bezoar and Rapunzel Syndrome: The Critical Role of Imaging in Diagnosis and Multidisciplinary Management

A. El Hadri[1*], S. Ouassil[2], H.C Ahmanna[2], B. Zouita[2], D. Basraoui[2], H. Jalal[2]

[1]Department of Radiology, Mother and Child hospital, Mohammed VI University Hospital Center of Marrakech
[2]Faculty of Medicine and Pharmacy, Marrakech Cadi Ayad University, Morocco

DOI: https://doi.org/10.36347/sjmcr.2025.v13i08.041 | **Received:** 17.06.2025 | **Accepted:** 21.08.2025 | **Published:** 29.08.2025

***Corresponding author:** A. El Hadri
Department of Radiology, Mother and Child hospital, Mohammed VI University Hospital Center of Marrakech

Abstract | **Case Report**

Bezoar is a mass of indigestible material that accumulates in the gastrointestinal tract, most commonly in the stomach, with Rapunzel Syndrome representing an extreme form where a trichobezoar extends from the stomach into the small intestine. Early and accurate diagnosis is essential to prevent serious complications such as obstruction or perforation. Imaging plays a critical role in identifying the size, location, and extent of the bezoar, with computed tomography being the most effective modality. We report the case of a young girl with Rapunzel syndrome complicated by multiple intussusceptions This article highlights the importance of imaging in diagnosis and emphasizes the need for a multidisciplinary approach.

Keywords: Rapunzel, Bezoar, psychiatric condition, trichophagia, endoscopy, abdominal CT.

INTRODUCTION

Bezoars are intragastric masses formed from the accumulation of indigestible material within the gastrointestinal tract, most frequently localized in the stomach. They are classified according to their constituent substances, including phytobezoars (composed of plant fibers), trichobezoars (comprised of ingested hair), and pharmacobezoars (resulting from undigested medications) [1]. Although bezoars are more frequently encountered in individuals with impaired gastric motility or a history of gastric surgery, their occurrence in the pediatric and adolescent populations is relatively rare. In adolescents particularly females trichobezoars and phytobezoars have been linked to underlying psychiatric conditions, including trichotillomania, trichophagia, and eating disorders [2]. Rapunzel syndrome is a rare and severe variant of trichobezoar, characterized by the extension of a gastric hair mass beyond the pylorus into the small intestine, and in some cases, as far as the colon [3]. The condition may remain clinically silent for extended periods and typically presents with vague, non-specific gastrointestinal symptoms going from simple abdominal pain, nausea and vomiting to a palpable abdominal mass. In severe cases, bezoars can lead to gastrointestinal obstruction or bleeding [2-3]. Medical imaging, particularly abdominal ultrasound and computed tomography (CT), is essential for early diagnosis, delineation of the bezoar's extent, and preoperative planning [4]. Due to the often subtle and non-specific clinical presentation, diagnosis can be delayed; thus, imaging plays a pivotal role not only in detection but also in guiding therapeutic decisions. Effective management generally requires a multidisciplinary approach, including collaboration among pediatricians, radiologists, pediatric surgeons, and mental health professionals, to address both the physical and psychological aspects of the condition [5].

CASE REPORT

A 14-year-old girl with no significant medical history presented with abdominal pain evolving over the past week, postprandial nausea, progressive weight loss, and intermittent constipation. On physical examination, a firm, mobile, non-tender epigastric mass was palpated.

Detailed history revealed a past psychiatric condition with an alopecia. The child exhibited signs of anxiety and social withdrawal, with poor academic performance.

Vital signs were unremarkable and laboratory studies revealed mild iron-deficiency anemia Abdominal contrast computed tomography was in favor of a significant gastric distention containing a large bezoar

extending into the duodenum and small bowel [figure 1] complicated by multiple intussusceptions [figure 2].

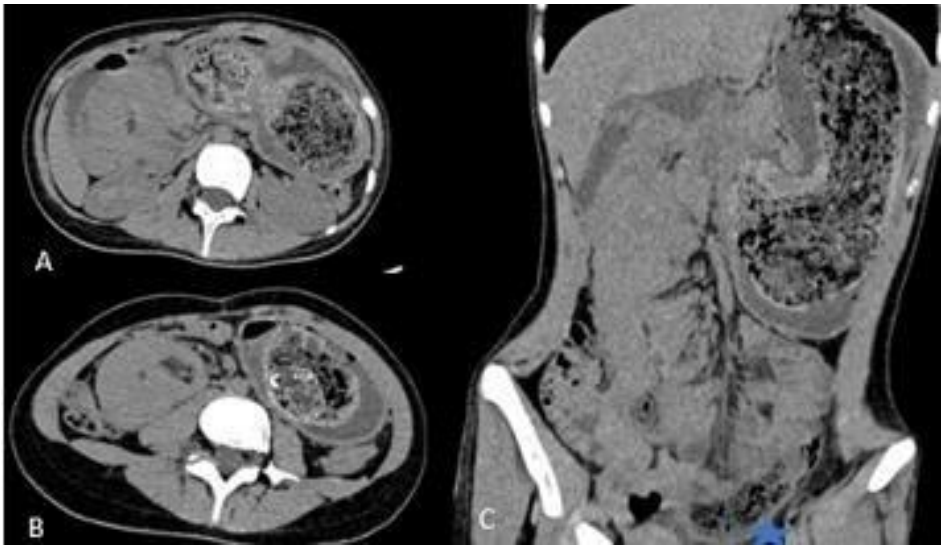

Figure 1: Non contrast enhanced abdominal CT scan in axial (A, B) and coronal (C) sections: Significant gastric distention containing heterogenous materiel forming a mass with the presence of air bubbles and calcifications, the lesion extends through the duodenal and jejunal segments reaching the left iliac fossa. (Blue star)

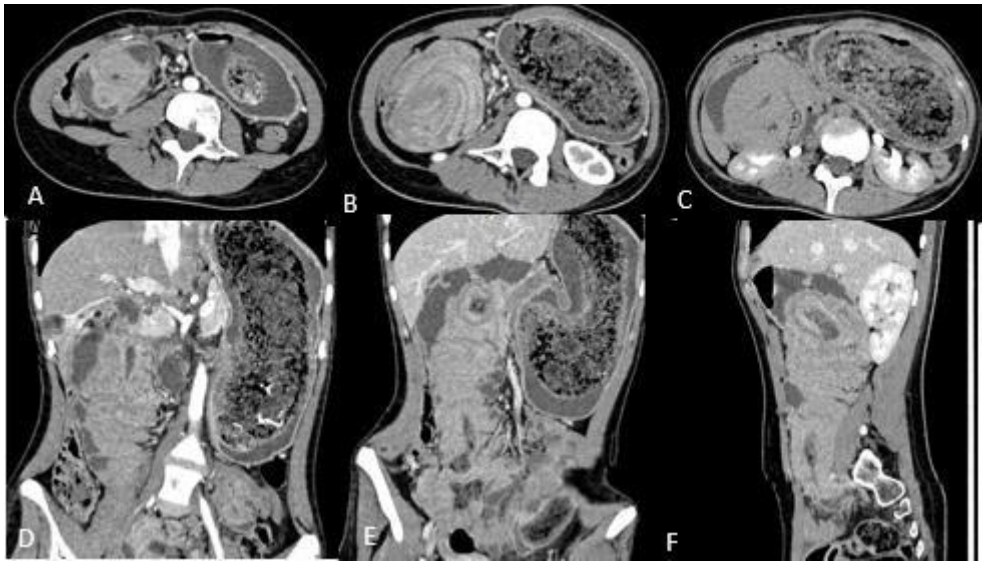

Figure 2: Contrast enhanced abdominal CT scan in axial (A, B, C), coronal (D, E) and sagittal (F) planes: Multifocal pyloro-dudodenal and jejuno-ileal intussusceptions are noted, with regular circumferential mural thickening

The patient underwent emergency exploratory laparotomy under general anesthesia, a large trichobezoar was removed through a longitudinal gastrotomy, the hair tail extended into the jejunum which was carefully removed. In addition, bowel intussusception was successfully unraveled manually, no bowel resection was needed as the involved segments appeared viable. The patient progressed with no complications and was discharged from hospital five days after surgery. She is currently being followed up as an outpatient by the gastroenterology, surgical and psychiatric teams.

DISCUSSION

Gastric bezoars are uncommon but should be included in the differential diagnosis in adolescents presenting with vague or nonspecific gastrointestinal symptoms, particularly in the context of disordered eating behaviors or rapid, unexplained weight loss.

Trichobezoars are a specific subtype of bezoar composed primarily of ingested hair or hair-like fibers [6]. These form when strands of hair, resistant to gastric peristalsis due to their smooth and slippery surface, become trapped within the gastric mucosal folds. Over

time, additional hair accumulates, and gastric motility facilitates compaction into a dense, matted mass that conforms to the shape of the stomach, often forming a single, firm intragastric mass [1].

When this hair mass extends beyond the pylorus into the duodenum, proximal jejunum, or, in rare cases, further into the ascending colon, the condition is referred to as Rapunzel syndrome [7]. This rare entity was first described by Vaughan *et al.,* [8].

Rapunzel syndrome has been well-documented in the literature as occurring predominantly in adolescent and young adult females with underlying psychiatric conditions, most commonly trichotillomania (compulsive hair pulling) and trichophagia (compulsive hair ingestion) [2]. Trichobezoars often remain asymptomatic until they attain a considerable size. Once enlarged, they may manifest with a spectrum of upper gastrointestinal symptoms, along with signs of malnutrition such as wasting and cachexia. In many cases, large trichobezoars are palpable on physical examination and may exhibit indentability, a finding referred to as Lamerton's sign.

Complications associated with trichobezoars include gastric or duodenal ulceration, gastrointestinal perforation, mechanical obstruction, intussusception, chronic diarrhea, and vitamin B12 deficiency often resulting from bacterial overgrowth facilitated by bezoar colonization [1–9].

The diagnosis of trichobezoar is primarily established through upper gastrointestinal endoscopy, which remains the gold standard. This modality offers direct visualization of the bezoar, permits biopsy if necessary, and may allow for therapeutic intervention [10].

Computed tomography (CT) is useful for confirming the diagnosis and delineating the full extent of the trichobezoar, particularly when there is suspicion of extension into the small intestine or associated complications [2]. Additional imaging modalities such as plain abdominal radiography, contrast enhanced upper gastrointestinal series, and abdominal CT scans may demonstrate the trichobezoar as a well-defined intraluminal mass or filling defect within the stomach and small bowel [11]. The management of a bezoar involves both removal of the mass and the prevention of recurrence through identification and treatment of the underlying physical or psychological etiology [10]. Therapeutic options vary depending on the bezoar's size, consistency, and location. Conservative measures may include the administration of enzymatic or chemical agents aimed at dissolution, as well as mechanical fragmentation. However, these approaches are typically ineffective for larger or more solid trichobezoars. In such cases, removal is generally achieved through endoscopic extraction or, more commonly, surgical intervention, particularly when the trichobezoar extends beyond the stomach or is associated with complications [10–12].

CONCLUSION

Rapunzel syndrome, although rare, should be suspected in children presenting with chronic gastrointestinal symptoms and a history of hair ingestion. Imaging, especially abdominal ultrasound and CT, plays a vital role in early and accurate diagnosis. Surgical removal followed by psychiatric intervention is the cornerstone of management. A multidisciplinary approach ensures optimal outcomes and minimizes the risk of recurrence.

RÉFÉRENCES

1. Altonbary AY, Bahgat MH. Rapunzel syndrome. J Transl Int Med. 2015 AprJun;3(2):79-81. doi: 10.1515/jtim-2015-0008. Epub 2015 Jun 30. PMID: 27847892; PMCID: PMC4936449.
2. Lopes, L. R., Oliveira, P. S. P., Pracucho, E. M., Camargo, M. A., Coelho Neto, J. de S., & Andreollo, N. A. (2010). The Rapunzel Syndrome: An Unusual Trichobezoar Presentation. Case Reports in Medicine, 2010, 1–3. doi:10.1155/2010/841028
3. Lara-Zavala YY, Álvarez-Ciaca I, Montiel-Jarquin ÁJ, Bertado-Ramírez NR, García-Galicia A, Alonso-Torres G. Síndrome de Rapunzel: diagnóstico radiológico [Rapunzel syndrome: Radiological diagnosis]. Rev Med Inst Mex Seguro Soc. 2023 Jul 31;61(4):539-542. Spanish. doi: 10.5281/zenodo.8200619. PMID: 37540757; PMCID: PMC10484550.
4. Rickert, A., Düker, G., Heydweiller, A., Strohm, J., Born, M., & Franke, I. (2014). Rapunzel's Syndrome – A Rare Phenomenon. Klinische Pädiatrie, 226(05), 297–298. doi:10.1055/s-00341385867
5. Crawley AJ, Guillerman RP. Rapunzel syndrome. Pediatr Radiol 2010; 40: S100.
6. Teng H, Nawawi O, Ng K, Yik Y. Phytobezoar: an unusual cause of intestinal obstruction. Biomed Imaging Interv J. 2005 Jul;1(1):e4. doi: 10.2349/biij.1.1.e4. Epub 2005 Jul 1. PMID: 21625276; PMCID: PMC3097591.
7. Lalith S, Gopalakrishnan KL, Ilangovan G, Jayajothi A. Rapunzel Syndrome. J Clin Diagn Res. 2017 Sep;11(9):TD01-TD02. doi: 10.7860/JCDR/2017/28593.10594. Epub 2017 Sep 1. PMID: 29207806; PMCID: PMC5713828.
8. Vaughan ED, Sawyers JL, Scott HW. The Rapunzel syndrome: An unusual complication of intestinal bezoar. Surgery.1968;63(2):339-43.
9. Sharma AK, Hussain A, Walia D, Bansal S. Trichobezoar and Rapunzel syndrome: A review. Oncol Gastroenterol Hepatol Rep 2015;4:28-9.

10. Gonuguntla V, Joshi DD. Rapunzel syndrome: A comprehensive review of an unusual case of trichobezoar. Clin Med Res 2009;7:99-102.
11. West WM, Duncan ND. CT appearances of the Rapunzel syndrome: An unusual form of bezoar and gastrointestinal obstruction. Pediatr Radiol 1998;28:315-6.
12. O. Koc¸, F. D. Yildiz, A. Narci, and T. A. Sen, "An unusual cause of gastric perforation in childhood: trichobezoar (Rapunzel syndrome). A case report," European Journal of Pediatrics, vol. 168, no. 4, pp. 495–497, 2009