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Ileal Trichobezoar Causing Small-Bowel Obstruction in a Case of Rapunzel Syndrome

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Abstract: ***Trichobezoars are uncommon masses found in the stomach, formed from ingested hair. They are most often observed in young females with underlying psychiatric disorders like trichotillomania and trichophagia. While trichobezoars typically remain confined to the stomach, they can occasionally extend into the small intestine, causing obstruction—a condition known as Rapunzel syndrome[1]. We report the case of a young female patient who presented with symptoms of acute intestinal obstruction, including abdominal pain, vomiting, and constipation. Imaging studies revealed an intraluminal mass extending from the stomach into the small bowel[2]. Surgical exploration confirmed the presence of a large trichobezoar causing mechanical obstruction. The mass was successfully removed via enterotomy and gastrotomy. Postoperatively, the patient recovered well and was referred for psychiatric evaluation and counseling. This case highlights the importance of considering trichobezoar in the differential diagnosis of young females presenting with signs of gastrointestinal obstruction, especially when accompanied by a suggestive behavioral history.***

Keywords: Rapunzel syndrome, Trichobezoar, Gastric trichobezoar, Small-bowel trichobezoar, Intestinal obstruction, Case report

1. Introduction

Bezoars are accumulations of indigestible materials that remain trapped within the gastrointestinal tract[3]. These materials can vary and include plant fibers and food residues (phytobezoars), persimmons (diospyrobezoars), hair (trichobezoars), medications (pharmacobezoars), and milk proteins (lactobezoars). Although bezoars can occur in any part of the gastrointestinal tract, they are most frequently located in the stomach. They are relatively rare, appearing in less than 0.5% of all esophagogastroduodenoscopic procedures, and account for approximately 0.4–4.8% of small-bowel obstruction cases[4]. Phytobezoars are the most prevalent type, whereas trichobezoars represent fewer than 6% of cases. While many patients remain asymptomatic, others may experience symptoms such as epigastric discomfort, early satiety, nausea, vomiting, or weight loss. In more severe cases, complications like gastric outlet obstruction or gastrointestinal bleeding may occur. When a bezoar migrates into the small or large intestine, it can result in mechanical bowel obstruction. This report describes a case of small-bowel obstruction caused by an ileal trichobezoar in a patient diagnosed with Rapunzel syndrome.

2. Case Presentation

A 24-year-old female presented to the emergency department with generalized cramping abdominal pain, nausea, vomiting (3–5 times a day), and constipation that had persisted for the past 5 days. She also reported a reduced appetite and a weight loss of 6.5 kg (9.8% of her total body weight) over the previous 2 months. The patient's mother noted a history of trichotillomania for the past 2 years, though trichophagy could not be confirmed. Additionally, the patient had been diagnosed with major depressive disorder and generalized anxiety disorder and had been on fluoxetine for the past 2 years.

On admission, the patient appeared pale, with signs of dehydration. Her vital signs were as follows: heart rate of 120 beats/min, blood pressure of 95/60 mm Hg, respiratory rate of 18 breaths/min, and a temperature of 36.8°C. Physical examination revealed three irregular patches of hair loss (alopecia) on the right side of her scalp, along with varying hair lengths. Her abdomen was distended with hypoactive bowel sounds, upper abdominal guarding, and generalized tenderness, though no rebound tenderness was noted.

Lab results revealed a hemoglobin level of 11.2 g/dL, platelet count of 455 × 10^9/L, and white blood cell count of 16.3 × 10^9/L, predominantly neutrophils (72.4%). Coagulation studies showed a prothrombin time of 12.1 seconds, activated partial thromboplastin time of 27.5 seconds, and an international normalized ratio (INR) of 1.08. Biochemical tests revealed a blood glucose of 85 mg/dL, serum creatinine of 0.75 mg/dL, total protein of 7.5 g/dL, and serum albumin of 3.9 g/dL.

After receiving intravenous crystalloids, a plain abdominal X-ray(Figure 1) was performed, showing gastric distention, dilated small-bowel loops with air-fluid levels, and distension of the distal ileum. Abdominal CT imaging confirmed gastric dilatation and revealed a well-defined heterogeneous mass in the stomach. The CT scan also demonstrated dilated small-bowel loops with an intraluminal mass at the ileocecal valve, consistent with trichobezoars.

The patient underwent an emergency laparotomy, revealing significant gastric and small-bowel distension. A mobile gastric trichobezoar, with a tail extending into the duodenum, was removed through an anterior gastrotomy (Figure 2). Extensive erythema of the gastric mucosa was noted. A second trichobezoar, causing obstruction at the ileocecal valve, was removed via an enterotomy. Primary closure of both the gastrotomy and enterotomy was completed.

Following a psychiatric consultation, the patient was discharged on the 9th postoperative day. At her 26-month follow-up, she remained under psychiatric care and had not experienced any recurrence of trichotillomania, trichophagy, or abdominal symptoms.

3. Discussion

Trichobezoars are compact masses of ingested hair, most commonly found in the stomach but sometimes extending into the small bowel and colon—a condition known as Rapunzel syndrome. Human hair resists digestion, and its smooth surface hinders peristalsis, causing accumulation between gastric folds that can mold to the stomach's shape (Figure 3). Occasionally, fragments may detach and migrate to the intestines.

Trichobezoars primarily affect children and adolescents, especially females with psychiatric conditions such as trichotillomania and trichophagia. Symptoms vary with size and location, ranging from asymptomatic cases to abdominal pain, nausea, early satiety, weight loss, and malnutrition. Complications include gastric ulceration, bleeding, perforation, and obstruction—intestinal obstruction being less common but potentially severe.

Diagnosis relies on imaging: plain films may show nonspecific signs, while ultrasound reveals characteristic dense strips with shadowing. CT scans are the preferred tool, showing a heterogeneous intraluminal mass with a mottled air pattern. CT also helps identify multiple bezoars and assess for complications like ischemia.

Management involves psychiatric evaluation and surgical removal, as trichobezoars resist medical and endoscopic treatments. Surgery, typically via laparotomy, allows complete removal and inspection of the gastrointestinal tract to prevent further obstruction. Laparoscopy has been used but is less consistent and often converted to open surgery.

The reported case of Rapunzel syndrome with ileocecal valve obstruction highlights the importance of clinical suspicion, imaging confirmation, and timely surgical intervention. Psychiatric follow-up is crucial to prevent recurrence of trichotillomania and trichophagia.

Figure 1: X-ray Abdomen

Figure 2: Closure of enterotomy

Figure 3: Trichobezoar

References

[1] A. Ozkan, N. Danis, F. Karatas, M. Altundal, N. Sevencan, B. Kayhan, An unusual cause of anemia: rapunzel syndrome, a case report, J Pak Med Assoc (0) (2020) 1, https://doi.org/10.5455/JPMA.27349

[2] Won MM, Sacks MA, Leigh R, Mendez YS, Goodman LF, Tagge E, Radulescu A. An Unusual Case of Primary Ileal Trichobezoar Causing Intussusception. Am J Case Rep. 2022 Jul 28;23:e935460. doi: 10.12659/AJCR.935460. PMID: 35900939; PMCID: PMC9344775.

[3] A. Sharma, A. Hussain, D. Walia, S. Bansal, Trichobezoar and rapunzel syndrome: a review, Oncol. Gastroenterol. Hepatol. Rep. 4 (2014), https://doi.org/10.4103/ 2348-3113.139638 août.

[4] M.B. Mirza, N. Talat, M. Saleem, Gastrointestinal trichobezoar: an experience with 17 cases, J. Pediatr. Surg. 55 (11) (nov. 2020) 2504–2509, https://doi.org/ 10.1016/j.jpedsurg.2020.04.020