



Giant gastric trichobezoar with perforation at the angular incisura and omental sealing in a 7-year-old patient: Case report

Tricobezoar gástrico gigante con perforación en incisura angularis y sellamiento epiploico en paciente de 7 años: Reporte de caso

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ABSTRACT

A trichobezoar is a condition characterized by the formation of a hair mass in the stomach, associated with trichotillomania and trichophagia. The case of a 7-year-old patient with abdominal pain is presented. An abdominal ultrasound revealed an irregular hyperechoic mass, which was confirmed by non-contrast and contrast-enhanced computed tomography. Surgical intervention revealed a 20 cm trichobezoar adhered to the gastric mucosa, with a perforation at the incisura angularis. The diagnosis of trichobezoar is rare, but if not recognized promptly, it can lead to serious complications. The mass size is a significant obstacle to surgical intervention.



Keywords: Trichotillomania, Stomach, Surgical Procedures

RESUMEN

El tricobezoar es una patología caracterizada por la formación de una masa de cabello a nivel gástrico, relacionada con la tricotilomanía y tricofagia. Se presenta el caso de una paciente de 7 años con dolor abdominal, quien a la realización de ecografía abdominal muestra masa hiperecogénica irregular, confirmada por tomografía simple y contrastada. Se realizó una intervención quirúrgica, resultando un tricobezoar de 20 cm adherido a mucosa gástrica con perforación en incisura angularis. El diagnóstico de tricobezoar es raro, pero si no se reconoce rápidamente puede llevar a complicaciones graves. El tamaño constituye un obstáculo de importancia cuando se considera la resolución quirúrgica.

Palabras clave: tricotilomanía, estómago, procedimientos quirúrgicos operativos.

INTRODUCTION

Trichobezoar is a particularly rare gastrointestinal pathology consisting of an intraluminal mass of hair that is indigestible or difficult to digest and accumulates in the digestive tract. Trichobezoar is closely related to trichotillomania, the compulsion to pull out hair, and trichophagia, the compulsion to ingest hair.⁽¹⁻³⁾ This disorder is very rare, occurring in less than 1% of the general population. Ninety percent of cases are reported in young women with long hair between the ages of 13 and 20. These cases have been associated with trichotillomania, trichophagia, and mental disorders such as obsessive thinking, mood swings, and anxiety.⁽⁴⁻⁶⁾ They can occur in any segment of the gastrointestinal tract, but most commonly form in the stomach. A complication known as Rapunzel syndrome occurs when the mass extends beyond the gastroduodenal junction.^(6,8) Early onset of symptoms is rare, and the patient usually remains asymptomatic or presents only with mild abdominal pain. Hair ingestion continues until the size of the mass causes severe pain along with obstructive symptoms.^(1,7) Treatment may be surgical, consisting of removal of the mass, either by endoscopy, laparoscopy, or laparotomy. If left untreated, the condition can progress to gastric erosion and subsequent ulceration, hemorrhage, or perforation.⁽⁷⁻⁹⁾

The patient's parents provided informed consent for publication of this case and clinical images, and we ensured the confidentiality of their personal information. In this context, we present the case of a 7-year-old female patient from and residing in the eastern region of Ecuador, with abdominal pain.

CASE PRESENTATION

A 7-year-old female patient from the tropical region of Ecuador, with no known medical, surgical, or family history, and no known allergies, presented to the emergency department of a secondary-level hospital with



an abdominal mass that had been present for 3 months. She also reported abdominal pain that began 2 days prior, located in the epigastrium, of moderate intensity, colicky in nature, without radiation, progressive, and without any relieving or exacerbating factors. Her mother reported behavior consistent with trichotillomania, trichophagia, and pica, with a presumed duration of 4 years, characterized by hair pulling and ingestion, along with pieces of mattress. The mother stated that there were no conflicts within the family and acknowledged limited supervision of the child, with no history of prior psychiatric or psychological evaluation. On physical examination, the patient was oriented to person, place, and time. The abdomen was tender to palpation, and a firm, regularly shaped mass, approximately 8 cm in diameter, was found in the epigastric region. No peritoneal irritation was noted, and the patient was admitted. A complete blood count revealed leukocytosis and anemia (8.2 g/dL). Abdominal ultrasound showed an irregular, hyperechoic, solid mass measuring 7.21 x 4.81 x 6.87 cm within the stomach. Non-contrast and contrast-enhanced computed tomography (CT) of the abdomen revealed a space-occupying lesion in the stomach, suggestive of a bezoar. On the fifth day of hospitalization, leukocytosis with a left shift was observed compared to the initial blood work, along with an elevated C-reactive protein (CRP) level. Hemoglobin decreased markedly to 7.7 g/dL on the fourth day of hospitalization and to 6.6 g/dL two days later, prompting a transfusion of one unit of packed red blood cells without buffy coat. On the sixth day, an exploratory laparotomy was performed, revealing an enlarged stomach with a mass at the level of the angular incisura on the anterior wall. The stomach was covered by omentum and fibrinopurulent mucus, and a trichobezoar approximately 20 cm in diameter was firmly adhered to the gastric mucosa (**Figures 1 and 2**). A gastric perforation at the level of the angular incisura was covered and sealed by a firmly adhered greater omentum, fused to the wall like a Graham patch, with fibrous tissue edges. There were no signs of bleeding or perforation, scant fluid in the abdomen, and no evidence of gastric contents spilling into the abdominal cavity. The postoperative course was uneventful. Psychology evaluated the patient and recommended follow-up, individual and family support, psychoeducation, psychological interviews, and active, empathetic listening. During hospitalization, the patient received antibiotic therapy with a third-generation cephalosporin and a nitroimidazole for six days, along with antiemetics, analgesics, and proton pump inhibitors. On the tenth day of hospitalization and the fourth postoperative day, the patient showed favorable clinical progress, with regular bowel movements and adequate urine output. The team ordered discharge, and the patient was instructed to complete the therapeutic regimen at home, with follow-up appointments in pediatrics, psychology, and general surgery.



Figure 1. Extraction of trichobezoar by gastrotomy



Source: Patient's medical record.

Figure 2. Extracted gastric trichobezoar



Source: Patient's medical record.



DISCUSSION

Bezoars present a clinical challenge, acting as a barrier that hinders the normal passage of food through the gastrointestinal tract when indigestible material is consumed. Based on their composition and origin, they are classified as phytobezoars (plant material), trichobezoars (hair), pharmacobezoars (medications), and lactobezoars (milk). Phytobezoars are the most common; however, it is important to differentiate between age groups and risk factors. In pediatrics, particularly in girls and adolescents with a history of trichophagia, trichobezoars are predominant. This highlights the need for a comprehensive, individualized approach across different risk groups.⁽¹⁰⁻¹²⁾

It is considered a rare pathology, with an incidence of less than 0.5–1% detected during upper gastrointestinal endoscopy (UGE). Depending on its size, it can go undetected for a prolonged period, as in the case presented. Ecuador has few reported cases, which makes it difficult to establish epidemiological data in this country.^(11,13)

Symptom onset depends on the size and location of the trichobezoar. In the vast majority of cases, it manifests as a multisymptomatic process, the main symptom being abdominal pain associated with nausea, vomiting, or abdominal distension. Even so, smaller trichobezoars may be asymptomatic or present with nonspecific symptoms that can be mistaken for other digestive disorders and delay diagnosis. In exceptional situations, complications such as intestinal obstruction, gastrointestinal bleeding, or gastric ulcers may occur.⁽¹²⁻¹⁴⁾

This pathology is more frequently associated with females with a history of trichophagia; for its diagnosis, the patient's clinical presentation combined with imaging studies is fundamental, with UGE being the gold standard, especially in pediatric patients.⁽¹⁵⁾

This imaging study allows direct visualization of the gastric mucosa, facilitating timely biopsy and early detection of associated complications, such as perforations or ulcers; thus, it has a high predictive value, with a 95% success rate for diagnosis. According to Wang et al., UGE has high sensitivity for confirming gastric trichobezoars, with a statistically significant correlation in 15 out of 16 patients examined.^(9,15)

Ultrasound is a non-invasive method of increasing clinical relevance, especially in pediatric patients, as it avoids radiation. In most cases, this study indicates well-defined masses with hyperechoic characteristics that produce acoustic shadowing in 33.3% of cases.⁽¹⁶⁾

Computed tomography (CT) reveals areas of mixed density, allowing identification of extension to adjacent anatomical structures, such as the small intestine, facilitating diagnosis of Rapunzel syndrome in approximately 35% of cases and helping detect intestinal obstruction.⁽¹⁵⁾



Plain abdominal radiography shows gastric opacity in approximately 28.6% of cases, but it is nonspecific and of low diagnostic utility.⁽⁹⁾

Therapeutic management of giant gastric trichobezoars in pediatric patients, as in the present case, involves complete removal, which reduces the risk of serious complications such as intestinal obstruction or perforation. Surgical technique is prioritized because current endoscopic approaches have inherent limitations.^(15,17)

Exploratory laparotomy with anterior gastrotomy is the gold standard for treatment, especially for giant trichobezoars, allowing for complete removal of the bezoar.^(9,18) However, minimally invasive laparoscopy has proven to be a safe and effective alternative; it consists of removing the bezoar using an endoscopic bag (endo-bag), which allows for a reduction of the incision by approximately 3 cm compared to conventional techniques, intending to inhibit intestinal extension, thus favoring postoperative recovery. This technique represents an advance over conventional laparotomy, balancing efficacy with faster recovery in centers with laparoscopic experience.^(19,20)

In pediatric patients, complications from giant trichobezoars are common because their large volume can occupy up to 80% of the gastric cavity, generating mechanical pressure. This occupancy can increase the risk of complications such as intestinal obstruction, ulcers, and perforations, which are frequent manifestations with a high mortality rate.⁽²¹⁾

Rapunzel syndrome has an incidence of 35 % in giant trichobezoars and is characterized by pyloric extension into the duodenum, causing intestinal obstruction. In this patient, the clinical complexity was exacerbated by involvement of critical anatomical structures, such as the angular incisura, with development of a fibrinopurulent phlegmon covered by omentum, substantially increasing the risk of secondary peritonitis.^(18,22)

This case is relevant due to its atypical age of onset, as it is more common in adolescents aged 13 to 20. The clinical history is also important because trichotillomania, trichophagia, and pica have an underlying psychobiological component. The gradual onset, with nonspecific associated pain, complicates the diagnostic process, making it crucial to consider psychiatric disorders as a factor in chronic digestive symptoms. This case highlights the importance of a multidisciplinary approach that integrates psychological, clinical, and social factors to support timely diagnosis and management, thereby preventing complications.

CONCLUSIONS

In conclusion, trichobezoars remain an uncommon condition, secondary to behavioral and eating disorders such as trichotillomania, trichophagia, and pica. Timely diagnosis is essential to prevent progression to serious complications. Prompt surgical intervention is the gold standard in the management of giant trichobezoars, along with psychiatric evaluation and the inclusion of cognitive-behavioral therapies combined with selective



serotonin reuptake inhibitors (SSRIs) when necessary, as part of a multidisciplinary approach. Long-term follow-up is also crucial to manage risky behaviors, prevent recurrence, and avoid future complications.

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Contribution statement:

Brayan José Vargas Lucio: Conception and design of the study, leadership in the collection of clinical data, main writing and initial structuring of the manuscript, general supervision of the work, critical review of the scientific content and final approval of the version to be published.

Jhoanss Sebastian Gaibor Gaibor: Substantial participation in the conception of the work, collection and interpretation of clinical and imaging data, direct collaboration in the writing of the manuscript and critical review of the scientific content.

Gabriel Israel García Gaibor: Analysis and interpretation of clinical information; bibliographic review and contribution to the writing of sections of the manuscript.

Alex Vinicio Almache Palacios: Interpretation of clinical findings and critical review of the manuscript with relevant intellectual contributions.

Katerin Mishel García Gaibor: Analysis and interpretation of clinical information, literature review and contribution to the writing of sections of the manuscript.

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