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CASE REPORT

Giant gastric trichobezoar associated with intestinal pneumatosis in a patient with tuberculosis: a case report from Bolivia

Tricobezoar gástrico gigante asociado a neumatosis intestinal en paciente con tuberculosis: reporte de caso en Bolivia

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ABSTRACT

Introduction: Giant gastric trichobezoar is a rare entity in pediatrics, generally associated with trichophagia; its insidious course hinders timely diagnosis and predisposes patients to serious complications. Case report: A 13-year-old adolescent presented with chronic abdominal pain and a palpable mass. Laparotomy revealed a giant gastric trichobezoar and extensive intestinal pneumatosis; concomitant peritoneal tuberculosis was identified via Xpert MTB/RIF® testing. The patient had a favorable postoperative outcome. Discussion: The exceptional coexistence of these three entities highlights that the pneumatosis resulted from a mechanical-ischemic obstructive mechanism, whereas the tuberculosis was an independent finding. This underscores the value of molecular tools when facing atypical intraoperative presentations. Conclusions: This case reaffirms the need for broad, multidisciplinary diagnostic reasoning when dealing with complex abdominal findings, avoiding unsubstantiated causal interpretations. A multidisciplinary approach is essential for identifying concomitant pathologies, optimizing treatment, and improving prognosis in cases of atypical abdominal presentation.

Keywords: Gastric trichobezoar; Intestinal pneumatosis; Peritoneal tuberculosis; Pediatric surgery; Trichophagia.

RESUMEN

Introducción: El tricobezoar gástrico gigante es una entidad infrecuente en pediatría, generalmente asociada a tricofagia, cuya evolución insidiosa dificulta el diagnóstico oportuno y favorece complicaciones graves. Caso clínico: Adolescente de 13 años con dolor abdominal crónico y masa palpable, en quien la laparotomía reveló tricobezoar gástrico gigante, neumatosis intestinal extensa y, mediante Xpert MTB/RIF, tuberculosis peritoneal concomitante, con evolución posquirúrgica favorable. Discusión: La coexistencia excepcional de estas tres entidades resalta que la neumatosis derivó del mecanismo obstructivo mecánico-isquémico, mientras que la tuberculosis constituyó un hallazgo independiente, subrayando el valor de las herramientas moleculares ante presentaciones intraoperatorias atípicas. Conclusiones: El caso reafirma la necesidad de un razonamiento diagnóstico amplio y multidisciplinario ante hallazgos abdominales complejos, evitando interpretaciones causales no sustentadas, el abordaje multidisciplinario son fundamentales para identificar patologías concomitantes, optimizar el tratamiento y mejorar el pronóstico en presentaciones abdominales atípicas.

Palabras clave: Tricobezoar gástrico; Neumatosis intestinal; Tuberculosis peritoneal; Cirugía pediátrica; tricofagia.

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INTRODUCTION

Trichobezoar constitutes a rare form of gastrointestinal bezoar produced by the progressive accumulation of ingested hair, generally associated with trichotillomania and trichophagia, predominating in adolescent females with impulse control disorders. Because hair is resistant to digestion and peristalsis, it accumulates within the stomach forming a compact mass that can remain asymptomatic for months or years, until manifesting with nonspecific symptoms such as abdominal pain, vomiting, weight loss, anemia, or palpable mass, which favors diagnostic delays and the appearance of potentially serious complications (1,4). When the trichobezoar reaches large dimensions, surgical treatment remains the therapeutic strategy of choice, especially in the presence of obstruction, perforation, hemorrhage, Rapunzel syndrome, or failure of endoscopic treatment. Although gastrotomy via laparotomy continues to show the highest rates of complete extraction, the laparoscopic approach has proven to be a feasible alternative in selected cases (3,6). However, the coexistence of unusual intraoperative findings forces the surgeon to extend diagnostic reasoning beyond the initially suspected disease. Pneumatosis intestinalis represents a rare radiological and histopathological finding characterized by the presence of gas within the intestinal wall. It is currently recognized that it corresponds to a clinical sign rather than a specific disease, whose meaning ranges from benign processes to potentially lethal conditions related to intestinal ischemia. The proposed pathophysiological mechanisms include increased intraluminal pressure, alteration of mucosal integrity, bacterial proliferation, and vascular compromise, so its interpretation should be made within the clinical context of each patient (7,8).

Peritoneal tuberculosis continues to represent an important diagnostic challenge, particularly in countries where the disease remains endemic. Its clinical presentation is often insidious and nonspecific, mimicking multiple inflammatory or neoplastic abdominal pathologies. In this scenario, molecular tests such as Xpert MTB/RIF have increased diagnostic capacity by detecting Mycobacterium tuberculosis DNA even in paucibacillary samples, favoring timely treatment.(9,10)

Beyond the rarity of each of these entities separately, the coexistence of a giant gastric trichobezoar, extensive intestinal pneumatosis, and peritoneal tuberculosis constitutes an exceptionally infrequent combination. The surgical approach, histopathology, and molecular diagnostic techniques proved essential to adequately understand the patient's pathophysiology and guide evidence-based individualized management of the adolescent.

CLINICAL CASE

A 13-year-old female patient was referred to our hospital with a clinical picture of approximately 9 months' duration, characterized by chronic abdominal pain of progressive intensity, associated with abdominal distension, recurrent episodes of nausea and vomiting, progressive decrease in food intake, and unquantified weight loss. Notable medical history included behavior compatible with trichophagia. On admission, she was hemodynamically stable, afebrile, and without impairment of general condition. Physical examination revealed abdominal distension with preserved bowel sounds and a palpable, firm, painful mass located in the left hypochondrium, with no evidence of peritoneal irritation signs. As part of the diagnostic approach, abdominal ultrasound revealed an intragastric mass suggestive of trichobezoar. Subsequently, plain abdominal radiography showed an image in the left upper hemiabdomen, directed toward the contralateral side from the midline, associated with extensive subdiaphragmatic radiolucent images compatible with pneumoperitoneum (Figure.1). This finding prompted further evaluation by upper digestive videoendoscopy. This examination confirmed the presence of a large intraluminal mass composed of hair that occupied the entire gastric cavity. Due to the significant volume of the trichobezoar, it was not possible to complete the exploration toward the duodenum or to perform retroversion maneuver.

Laboratory studies revealed (hemoglobin: 9.5 g/dL) microcytic hypochromic anemia, mild leukocytosis with left shift, and alterations consistent with systemic inflammatory response. Coagulation disorders were documented (INR: 1.73), elevated liver enzymes, azotemia, and mild hypoalbuminemia, findings indicative of metabolic compromise secondary to the prolonged obstructive process. Given the diagnostic suspicion of a complicated giant gastric trichobezoar, it was decided to perform an exploratory laparotomy under general anesthesia. Upon entry into the abdominal cavity, the escape of free air consistent with pneumoperitoneum and abundant free serous fluid was observed, from which samples were obtained for microbiological and molecular analysis.

Figure 1. A heterogeneous, mottled image with an imprint pattern is observed, predominantly occupying the left upper hemiabdomen with distribution toward the contralateral side, compatible with a space-occupying lesion characteristic of a trichobezoar. In addition, caudal displacement of adjacent structures is observed due to extensive subdiaphragmatic radiolucencies compatible with pneumoperitoneum.

During surgical exploration, extensive pneumatosis intestinalis was identified, involving approximately 70 cm of small intestine, starting 10 cm proximal to the ileocecal valve, associated with multiple enlarged mesenteric lymph nodes (Figure 2). Gastric exploration revealed a giant trichobezoar occupying practically the entire lumen of the stomach (Figure 3).

Figure 2. Intraoperative finding shows extensive pneumatosis intestinalis of the small intestine and multiple subserosal cystic lesions with gas content.

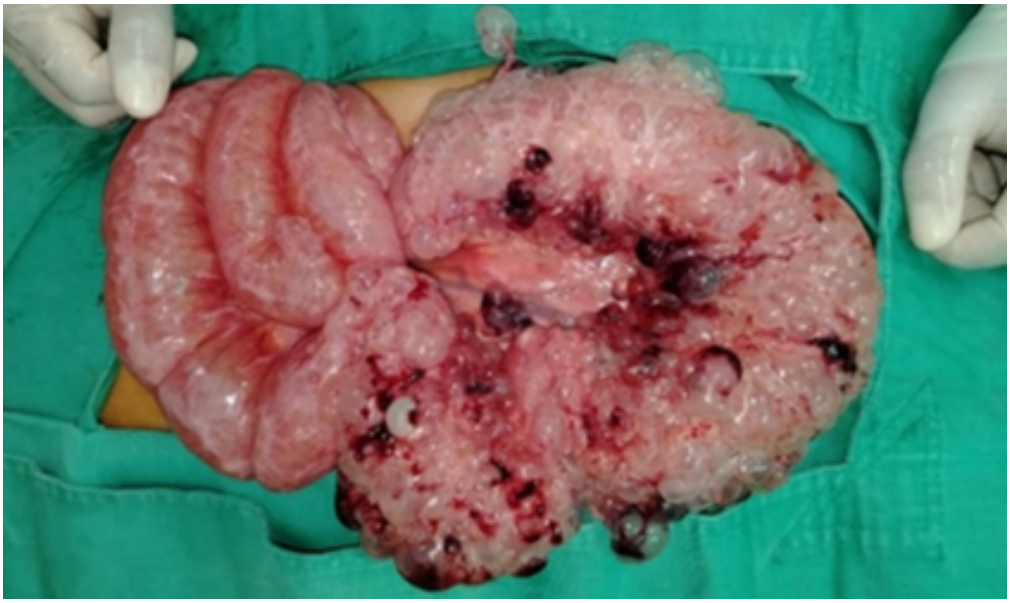

Figure 3. Giant gastric trichobezoar, consisting of a compact mass of hair molded to the anatomy of the stomach, occupying practically the entire gastric lumen.

Biopsies were performed on mesenteric lymph nodes, peritoneum, and segments affected by intestinal pneumatosis. Subsequently, an anterior longitudinal gastrotomy was performed with complete extraction of the trichobezoar, followed by thorough lavage of the abdominal cavity and placement of a drain. The histopathological study demonstrated cystic intestinal pneumatosis secondary to a mechanical-ischemic obstructive process, characterized by multiple gas cavities delimited by histiocytes and multinucleated foreign-body giant cells. Histological analysis of the mesenteric lymph nodes revealed reactive sinusoidal hyperplasia without signs of malignancy, while the peritoneal biopsy showed vascular congestion with no granulomas identified. To rule out an infectious etiology, a molecular study was performed using Xpert MTB/RIF on samples of mesenteric lymph node, peritoneal fluid, peritoneal tissue, and compromised intestinal wall. The lymph node, intestinal, and peritoneal fluid samples were negative for Mycobacterium tuberculosis. However, the analysis of peritoneal tissue detected Mycobacterium tuberculosis DNA at trace concentration, with an indeterminate result for rifampicin resistance, establishing the diagnosis of peritoneal tuberculosis. During the immediate postoperative period, the patient remained hospitalized for 7 days in the Pediatric Intensive Care Unit. The subsequent clinical course was satisfactory, with progressive resumption of enteral feeding on the 5th postoperative day and initiation of antituberculosis therapy according to the TB program. The patient was discharged from the hospital in favorable clinical condition, with multidisciplinary follow-up by the infectious diseases, pediatric surgery, psychiatry, and nutrition services.

DISCUSSION

Gastric trichobezoar is a rare entity in pediatric surgery, predominantly observed in female adolescents with a history of trichotillomania and trichophagia. Its clinical course is usually insidious, which is why the diagnosis is frequently established when the bezoar reaches large dimensions or when complications such as gastrointestinal obstruction, ulceration, perforation, or Rapunzel syndrome appear. Treatment depends on the size of the trichobezoar, the extent of involvement, and the presence of complications. Although endoscopic extraction may be considered for small and fragmentable lesions, surgery remains the treatment of choice for giant trichobezoars, with success rates close to 100%, especially when complications or failure of endoscopic management are present. Laparotomy via gastrotomy continues to represent the most effective procedure to achieve complete removal of the mass and allow adequate exploration of the abdominal cavity. (1,2,3,4)

In the present case, the large volume of the trichobezoar precluded complete endoscopic

evaluation of the stomach and duodenum, necessitating surgical management. However, the most relevant aspect was the intraoperative finding of pneumoperitoneum and extensive intestinal pneumatosis, a rarely described association in patients with trichobezoars. Although pneumoperitoneum is usually interpreted as a sign of hollow viscus perforation, it may also occur in patients with intestinal pneumatosis secondary to rupture of subserosal gas cysts, without necessarily implying transmural perforation. This possibility should be considered during surgical assessment to avoid unnecessary intestinal resections when bowel viability is preserved (5,6).

The pathophysiology of intestinal pneumatosis remains a matter of debate. It is currently accepted that it corresponds to a multifactorial phenomenon involving mechanical, bacterial, and biochemical mechanisms. The sustained increase in intraluminal pressure favors disruption of the mucosal barrier and migration of gas into the submucosa and subserosa, while gas-producing bacteria may contribute to the formation of cystic cavities. Likewise, alterations in intestinal microcirculation and episodes of ischemia favor the development of this entity. In our patient, the histopathological demonstration of cystic intestinal pneumatosis secondary to a mechanical-ischemic obstructive mechanism supports the hypothesis that the prolonged obstruction caused by the trichobezoar played a determining role in its development.(5,7)

Another finding of particular interest was the concomitant diagnosis of peritoneal tuberculosis by means of the Xpert MTB/RIF® molecular test. Abdominal tuberculosis is among the most diagnostically challenging extrapulmonary forms because of the nonspecific clinical and radiological presentation and the limited sensitivity of conventional microbiological methods in paucibacillary samples. In recent years, molecular assays have significantly improved diagnostic yield, allowing the identification of Mycobacterium tuberculosis DNA even when histopathological studies do not show granulomas or acid-fast bacilli. In our case, the diagnosis was unexpected and could only be established through molecular analysis of peritoneal tissue, highlighting the utility of incorporating these diagnostic tools in patients with atypical intraoperative findings or those of uncertain etiology.(8,10,11) Currently, reports describing the coexistence of a giant gastric trichobezoar, extensive pneumatosis intestinalis, and peritoneal tuberculosis in the same pediatric patient are exceptionally scarce. These findings suggest that the pneumatosis intestinalis was a consequence of the mechanical-ischemic obstructive compromise caused by the trichobezoar, whereas the peritoneal tuberculosis constituted an independent concomitant diagnosis, identified through a systematic diagnostic evaluation during the surgical procedure.

This case highlights the importance of maintaining a broad diagnostic approach when confronted with complex abdominal findings and integrating clinical, radiological, surgical, histopathological, and microbiological information to avoid unsupported causal interpretations. We emphasize the value of the multidisciplinary approach involving pediatric surgery, infectious diseases, anatomical pathology, microbiology, and mental health, both for treating acute complications and for preventing recurrence through the management of behavioral disorders associated with trichophagia.

CONCLUSIONS

The present case demonstrates that a giant gastric trichobezoar can be associated with rare abdominal complications, such as pneumatosis intestinalis and pneumoperitoneum, whose management requires comprehensive surgical evaluation and broad diagnostic reasoning. The incorporation of histopathological studies and molecular tests allowed the concomitant identification of peritoneal tuberculosis, a diagnosis that would not have been established solely through clinical evaluation or conventional methods. The coexistence of these three entities constitutes an exceptional finding that highlights the importance of integrating clinical, radiological, surgical, anatomopathological, and microbiological findings to guide timely and individualized treatment. It is important to maintain a critical attitude towards complex abdominal presentations; in pediatric surgery, each intraoperative finding represents an opportunity to expand diagnostic reasoning and understand the patient comprehensively, beyond the initially suspected disease.

REFERENCES

1. Gorter RR, Kneepkens CMF, Mattens ECJL, Aronson DC, Heij HA. Management of trichobezoar: case report and literature review. Pediatr Surg Int. 2010;26(5):457-463. https://doi.org/10.1007/s00383-010-2570-0
2. Naik S, Gupta V, Rangole A, Chaudhary AK, Jain P, Sharma AK. Rapunzel syndrome reviewed and redefined. Dig Surg. 2007;24(3):157-161. https://doi.org/10.1159/000102097
3. Nadipelli AR, Duggineni D. A Rare Case of Gastric Trichobezoar Managed by Laparotomy. Cureus. 2024;16(8):e67357. https://doi.org/10.7759/cureus.67357
4. Harrabi F, Ammar H, Ben Latifa M, Gupta R, Ben Ali A. Gastric Trichobezoar Causing Gastrointestinal Bleeding: A Case Report. Cureus. 2022;14(10):e30282. https://doi.org/10.7759/cureus.30282
5. Belhadj A, Touati MR, Othmane MRB, Khefacha F, Saidani A, Chebbi F. Revelation of Rapunzel syndrome: A rare case report of gastric trichobezoar-induced acute purulent peritonitis. Int J Surg Case Rep. 2023;111:108860. https://doi.org/10.1016/j.ijscr.2023.108860
6. Gorter RR, Kneepkens CMF, Mattens ECJL, Aronson DC, Heij HA. Management of trichobezoar: case report and literature review. Pediatr Surg Int. 2010;26(5):457-463. https://doi.org/10.1007/s00383-010-2570-0
7. Ling F, Guo D, Zhu L. Pneumatosis cystoides intestinalis: A case report and literature review. BMC Gastroenterol. 2019;19:176. doi:10.1186/s12876-019-1117-9. https://doi.org/10.1186/s12876-019-1117-9
8. Torres US, Fortes CD, Salvadori PS, Tiferes DA, D'Ippolito G, Souza LRM. Pneumatosis from esophagus to rectum: A comprehensive review focusing on clinico-radiological differentiation between benign and life-threatening causes. Insights Imaging. 2021;12(1):176. https://doi.org/10.1186/s13244-021-01111-2
9. World Health Organization. WHO operational handbook on tuberculosis. Module 3: Diagnosis – rapid diagnostics for tuberculosis detection. Geneva: WHO; 2021. Available at: https://www.who.int/publications/i/item/9789240030589
10. Tobin EH, Khatri AM. Abdominal Tuberculosis. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025. Available at: https://www.ncbi.nlm.nih.gov/books/NBK556115/
11. Paz-Román CA, Fuentes Luzcuber PN, Auza-Santivañez JC, Salvatierra Rocha CJ, Sañez Liendo EG, Quisbert Vasquez HT, et al. Ramsay Hunt Syndrome in a Pediatric Patient with Atypical Presentation: Case Report. Salud Integral y Comunitaria [Internet]. 2026 Jan. 1 [cited 2026 Aug. 3];4:269. Available from: https://doi.org/10.62486/sic2026269

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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