Fortuitous discovering in imaging of the gastroduodenal trichobezoar in young adolescents: A report of two cases

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ABSTRACT

Introduction: The trichobezoar is a rare entity. It is usually found in the stomach with possibility of migration to the distal level of digestive tract. The objective of this review is to describe clinical and radiological characteristics and treatment of trichobezoar from two cases discovered fortuitously on imaging. Case Series: We reported two cases of gastroduodenal trichobezoar location. The first case concerned a 10-year-old girl who presented a gastroduodenal trichobezoar without any history. The second case concerned a 14-year-old girl with a history of alopecia. Abdominal ultrasound and computed tomography (CT) scan were used and CT scan notified the typical images of trichobezoar and discovered the severe complication of this entity which was in the digestive perforation followed by the peritonitis. Conclusion: The gastroduodenal bezoar is a rare concern considering the nature and pathophysiology. The CT scan is the main form of imaging and must specify the extension, the existence of the synchronous locations, and look for complications.

Keywords: Gastroduodenal, Imaging, Trichobezoar

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INTRODUCTION

The bezoar designates an intragastric mass made of ingested and accumulated material. This could be plants (phytobezoar) or hair (trichobezoar) due to a trichotillomania [1]. The mass could have a dual location and can extend to the terminal ileum and the pathology usually occurs in adolescent females with particular psychic state [2, 3]. The diagnosis is confirmed by imaging or endoscopy which indicates surgical treatment and psychiatric follow-up [1, 4]. The two cases we reported allow us to review, emphasizing the clinical, radiological characteristics of this condition, not to be missed.

CASE SERIES

Case 1

A 10-year-old girl presenting intermittent vomiting for three months with progressive cachexia. Physical examination showed that she had skin and mucus pallor. Hemogram showed moderate hypochromic anemia. The abdominal ultrasound found a thickening of the gastric wall which was distended with ultrasound
been prescribed. In addition, psychotherapy sessions have been recommended.

The antibiotherapy was started and the operative results were good. In addition, psychotherapy sessions have been prescribed.

The patient was referred to the pediatric surgery department for managing. In the follow-up, the patient was operated on pediatric surgery department with favorable suites.

Figure 1: (A) Abdominal CT scan, coronal view, showing the form of mass molding gastric lumen heterogeneous containing air bubbles and extending to the duodenum (voluminous gastroduodenal trichobezoar). (B) Abdominal CT scan, axial view, aspect of arrangement in concentric layers in the form of the bulb of onion of the gastroduodenal mass characteristic of the trichobezoar (typical image of gastroduodenal trichobezoar).

**Case 2**

A 14-year-old girl, with a history of chronic epigastralgia and abdominal pain, was addressed for acute abdomen in a febrile context. Clinical examination noted alopecia and generalized abdomen defense. Biology had highlighted leukocytosis with moderate anemia. The abdomen without preparation X-ray (AWP) done in emergency showed several hydroaeric levels with pneumoperitoneum. Ultrasound found a large abundance of peritoneal effusion. The abdominopelvic CT scan concluded to peritonitis which was secondary to gastric perforation on the trichobezoar (Figure 2A and B). The patient was referred to the operating room. The surgery gave birth to a huge mass of hair (trichobezoar) with a finding of perforation in the fundus (large tuberosity of the stomach). A suture of stomach was made followed with abundant washing of abdominal cavity and closure. The antibiotherapy was started and the operative results were good. In addition, psychotherapy sessions have been prescribed.

DISCUSSION

Bezoar is a rare condition which corresponds to the concretion of ingested substances, various in the gastrointestinal tract, particularly in the stomach [1, 4]. Several types are distinguished according to the ingested substance. Thus, literature described lactobezoar as ingestion of curds observed in infants, phytobezoar composed of conglomerate of vegetable fibers, and the trichobezoar which represented 55% of all bezoars was composed of hair or carpet fibers intertwined between them in the gastric lumen but with the possibility of molding this and extending into the duodenum, jejunum and beyond [5, 6]. The first case of trichobezoar was published in 1779 [6]. The age of onset of the trichobezoar was in 80% of cases less than 30 years with a peak frequency between 10 and 19 years [6]. This is a rare condition, which represents 0.15% of gastrointestinal foreign bodies in children, even very rare in adults and the predominance of women is required in 90% of cases [1, 7]. Our cases were girls aged of 10 and 14 years. The patients swallowed their hair (trichophagia) after having pulled it out (trichotillomania) [2].

The diagnosis is based on clinical, radiological, or endoscopic features and in some conditions it can be intraoperative. It evokes in front of a chronic digestive symptom, not very specific, most often in an adolescent female with a particular psychic state [8]. Other circumstances incriminated are emotionally disturbed or depressed patients, the mentally illness, prisoners, or patients with history of gastric surgery [9]. The clinic was dominated by anorexia, intermittent vomiting, gastric satiety, diarrhea or constipation, pallor, abdominal pain, epigastric mass, or swelling [6]. The biology noted hypochromic anemia, hypoproteinemia/hypoalbuminemia as we found it for our first case which was secondary to absorption disorders. The alopecia was the warning sign due to trichotillomania and cachexia was secondary to anorexia and iterative vomiting due to the often-late diagnosis of the pathology. The only associated syndrome known to date is Rapunzel or...
Rapunzel syndrome described for the first time in 1968 by Vaughan et al. as we found in the detailed description given by Hamid et al. [3]. Then, this syndrome was corresponding to a rare form of trichobezoar by extension at the duodenal and jejunal level [8]. In this case, a pylorus stenosis syndrome could be found on physical examination. Multiple inconsistent complications were cited as gastric ulcers, anemia, digestive obstruction, hemorrhage, appendicitis, intussusception, perforation, and peritonitis [6]. Cholestatic jaundice, dilation of the bile ducts, and pancreatitis due to irritation of the Vater’s ampoule with trichobezoar were reported [3].

Imaging is essential in order to confirm diagnosis and specify the location, the nature, and the extension of a bezoar. Fibroscopy is an excellent technique used to classify bezoars and in some cases as a therapeutic element. The endoscopy shows the tangled hair intrastrachically and the trichobezoar is black like tare while the phytobezoar is multicolored turning from yellow to brown or green [10]. The AWP X-ray showed either heterogeneous images of mixed density with intragastric projection or a grayness of the left hypochondrium or an intragastric image silhouetted by the air [11]. The opacification noted voluminous gaps surrounded by the baryta on all the incidence, heterogeneous mobiles, molding the gastric cavity [1, 5]. Ultrasound noted gastric distension with regular parietal thickening and a large shadow cone reflecting air bubbles and a foreign body [1, 11]. It is not uncommon to find a mass of heterogeneous echostructure or a cockade image evoking an invagination on a foreign body. In addition, the ultrasound notified complications like ascites, nodes, appendicitis, or dilation of bile ducts [4]. It confirmed diagnosis in 25% of cases [10].

The CT scan without and with injection of the contrast medium revealed an intragastric mass containing air bubbles [4, 11]. Any mass corresponding the gastric lumen and consisting of concentric bulb layers without contrast enhancement is pathognomonic on CT scan (Figure 1B). What is more, the CT scan gives topography, specifies extension to the duodenum, jejunum, the volume, and highlights any complications that guide the approach and surgical technique. A follow-up magnetic resonance imaging (MRI) showed a well-defined, smooth-contoured cavity within the lumen of the stomach with low signal on T1, low signal on T2, and internal heterogeneity [12].

The current treatment requires surgical extraction by gastrotomy ± enterotomy associated with psychiatric and psychological components in order to prevent recurrences [4, 13]. Endoscopic treatment is possible if the bezoar is small and of exclusively gastric location [14]. The operating suites are relatively good [4].

CONCLUSION

The gastroduodenal bezoar is a rare concern considering the nature and pathophysiology. That condition presents various complications and some of them are seriously secondary to diagnosis delay. Imaging plays the main role in completing the history and clinic to refine the positive diagnosis. However, the CT scan is the main form of imaging and must specify the extension, the existence of the synchronous locations, and look for complications.

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All relevant data are within the paper and its Supporting Information files.

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