



Gastric Trichobezoar: Case Report

Tricobezoar gástrico: Presentación de caso

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Palabras clave (DeCS)

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Summary

A bezoar is a foreign body that can form in the gastrointestinal tract due to the ingestion of non digestible substances. They are classified according to their composition, with trichobezoar and phytobezoar being the most frequent forms, and they are formed by hair and vegetable and fruits fibres respectively. A bezoar is usually formed in the stomach but can however move to the small intestine (Rapunzel syndrome) and become a low frequency cause of intestinal obstruction (0.4 to 4%). This article describes a case of gastric trichobezoar, its findings by image, pathology and a brief review of the literature. The information about this entity is limited and there are few series of cases so it is necessary to continue describing and determining their findings in the different diagnostic modalities.

Resumen

El bezoar es una concreción que se forma en la luz del tracto gastrointestinal por la acumulación de cuerpos extraños no digeribles. Se clasifican de acuerdo con el material que los componen, son el tricobezoar y el fitobezoar las formas más frecuentes, los cuales están compuestos de pelo y de fibras de vegetales y frutas, respectivamente. El bezoar usualmente se forma en el estómago, puede pasar al intestino delgado (síndrome de Rapunzel) y ser una causa poco frecuente de obstrucción intestinal. En este artículo se describe un caso de tricobezoar gástrico, sus hallazgos por imagen, patología y una breve revisión de la literatura. La información acerca de esta entidad es limitada y se cuenta con pocas series de casos por lo cual es necesario continuar describiendo y determinando sus hallazgos en las diferentes modalidades diagnósticas.

Introduction

Gastric bezoar is defined as a mass formed by a conglomerate of non-digestible foreign bodies in the stomach, with an incidence of less than 1% in the general population (1). Affected patients may be asymptomatic or exhibit variety of symptoms including epigastric pain, bloating, vomiting, early satiety and high gastrointestinal bleeding.

Its classification is based on the material of which the mass is composed. Trichobezoar, the accumulation in the stomach of non-absorbable human hair, occurs mainly in young women with psychiatric disorders, such as trichotillomania or trichophagia (1). Adults with previous gastric surgery and gastroparesis are also at risk of forming bezoar, most likely phytobezoar, composed mainly of poorly absorbable fruits and vegetables, such as orange or high fiber diets (2). The pharmacobezoar and lactobezoar are composed of nondigestible or semi-liquid tablets and milk (2).

Rapunzel syndrome is a rare complication of trichobezoar. It refers to a large trichobezoar that completely occupies the stomach and extends to the duodenum and possibly the jejunum and colon through the pylorus sometimes causing intestinal obstruction.

Clinical case

A 14-year-old female patient, who entered for abdominal pain in the mesogastrium of two days of evolution. During the interview, the mother reports that the patient has ingested hair occasionally for more than a year, but the frequency of consumption has increased in recent months. Physical examination showed slight alopecia and a palpable mass in the mesogastrium. Anemia and hypoalbuminemia secondary to chronic malnutrition were found in laboratory tests. An x-ray of the abdomen was performed whe-



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re an opacity was observed that displaced the transverse colon and air around it, for which it was considered compatible with mass of gastric origin. Ultrasound of the abdomen (Figure 1) demonstrated nonspecific findings: in the epigastrium, an echogenic linear image with posterior acoustic shadow suggestive of trichobezoar (Figure 2). Due to the non-specific symptomatology, an abdominal compu-

ted tomography scan was performed in which the gastric lumen was observed, occupied by material of different densities in the arrangement of concentric rings, with air and contrast medium extended to the duodenal bulb, forming the sign of "Rapunzel" (Figures 3 and 4). Finally, surgery was performed for the extraction of bezoar by gastrostomy (Figure 5).



Figure 1. a and b) AP abdomen radiograph and vertical: there is dilation of the stomach by an opacity that occupies almost all of its light, with air around and caudal displacement of the transverse colon, compatible with gastric mass.

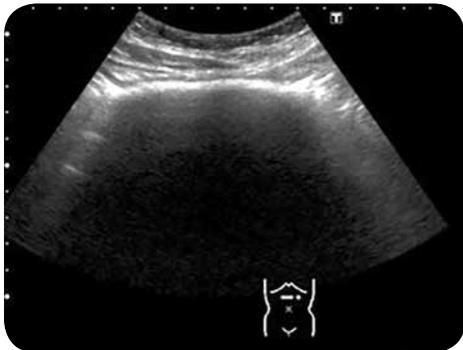


Figure 2. Ultrasound of the epigastrium: a linear image in the form of an arch, echogenic, that generates posterior acoustic shadow.

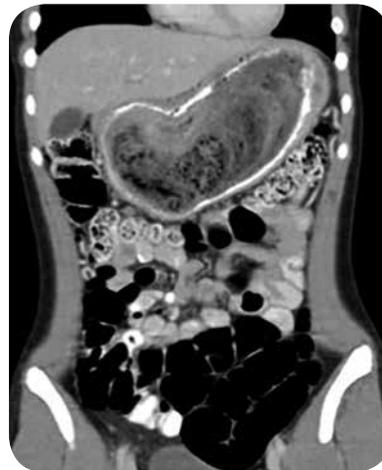


Figure 4. a and b) Abdominal scan with contrast medium: the gastric lumen is occupied by heterogeneous material, with predominance of low density, arranged in concentric rings of different densities and surrounded by oral contrast medium.



Figure 3. Abdominal scans with contrast medium: Sign of Rapunzel, we identify prolongation of gastric lumen material towards the first and second portions of the duodenum.



Figure 5. Specimen of trichobezoar extracted by gastrostomy: a cluster of hairs is observed that adopts the morphology of the stomach and the proximal duodenum.

Discussion

Bezoar is a rare cause of intestinal obstruction, with an incidence of less than 1% (1). They consist of masses formed by conglomerates of foreign bodies that have been attributed to the ingestion of several non-digestible substances, mainly vegetal remnants (phytobezoar) and even hair (trichobezoar). Its cause is also attributed to disorders of gastric motility found in some patients, following gastrectomy or bypass.

Patients may be asymptomatic or exhibit nonspecific symptoms, such as epigastric pain, bloating, nausea, vomiting, weight loss or gastrointestinal bleeding (1).

Previously, the diagnosis of bezoar was performed surgically; however, with the incursion of the ultrasound and scanning it is possible to perform this diagnosis in a pre-surgical manner. Abdominal CT scans are the study of choice for identification and evaluation of complications such as intestinal obstruction, intussusception or perforation, as well as to detect additional bezoars in the rest of the gastrointestinal tract (3).

Conventional radiography is helpful in determining bowel obstruction, but not bezoar. The finding on radiography is determined by a non-specific opacity, which is not characteristic and may correspond to another pathology or faecal matter.

Ultrasound has been described, as a characteristic finding, the linear or arch-shaped echogenic band with posterior acoustic shadow. This finding is the result of the high echogenicity of the hair and various acoustic interfaces by the food and air debris within the bezoar impaction. In the differential diagnosis, bile ileus must be considered, since it also produces an echogenic image with posterior acoustic shadow (4). Also, it must be differentiated from concretions of barium by previous studies and food remains, the latter do not have a definite and marked posterior acoustic shadow, but it is shown in a “dirty” way. Despite the findings described in ultrasound, its sensitivity is low for the diagnosis of gastric bezoar.

Scans are the study of choice for the diagnosis of bowel obstruction and to identify their cause. Some authors describe that the findings on scans are sufficient for the diagnosis of bezoar; they correspond to a well defined, low-attenuation intraluminal mass containing air bubbles or contrast media between its laminar layers, as well as food remains in the stomach. When the dough does not completely obstruct the stomach, the dye surrounds the surface of the dough and it can even be mobile.

When the trichobezoar is lodged in the stomach and its distal end extends distally to the small intestine or descending colon, it is called Rapunzel’s syndrome, so be attentive to continue distally the image of the mass towards the gastrointestinal tract, either to observe this finding, to identify other bezoars or an obstruction of the small intestine that is the most frequent complication of bezoar. Other complications that may appear are: perforation, peritonitis or formation of abscesses (3-5).

The differential diagnosis consists of the remains of food in the stomach or fecal matter in the intestine, which make up the sign of “feces”, which is observed proximal to an intestinal obstruction. If the bezoar is small it tends to float at the air-water interface and shows lower density than the food particles. However, large bezoars tend to occupy the light, making it difficult to differentiate it from a large food impaction. Unlike the sign of “feces” in the small intestine, where it is poorly defined and affects longer segments, a bezoar in the small intestine is better defined, ovoid morphology, with gas bubbles inside and located in the site of transition from intestinal obstruction (6).

Magnetic resonance imaging (MRI) has been described in which bezoar is shown as a confluent, low-signal ovoid mass in sequences with T1 and T2 information. These low signal areas represent air bubbles retained between the bezoar layers. In some cases, a high-signal halo can be seen in T1 surrounding the mass, possibly attributed to collection of high protein substances, colonization of bacteria or a paramagnetic effect of unknown etiology that could be another mechanism for the display of the high signal halo (7).

The treatment of trichobezoar is surgical. Laparotomy is the method of choice by means of which gastrostomy and mass extraction are performed; however, the use of laparoscopy and endoscopy, which is occasionally limited by the size of the mass, has been reported. Psychiatric assessment is also essential for patient support and relapse prevention (5). The discrepancy between scans and surgical findings may be related to bezoar migration (4).

Conclusion

Diagnostic images are a fundamental tool in the diagnosis of bezoar because, due to the non-specificity of its symptoms, it is not clinically suspected. Scanography is the mode of image of choice for its identification and that of its complications. For an adequate diagnosis, the radiologist should be familiar with the findings of this pathology and its possible differential diagnoses, such as food or fecal matter, common in these studies

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