



Management of Gastric Phytobezoar- a rare cause of Upper Gastrointestinal bleeding

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Abstract

Bezoar is an aggregate of undigestible material, which can be detected in any segment of the digestive tract, having sometimes unfavorable prognosis due to possible complications (hemorrhage, perforation, stenosis or occlusion). We will present the case of a 61-year-old female patient, who addresses the Emergency Department of the County Emergency Clinical Hospital "St. Spiridon", Iasi, for hematemesis and epigastric pain. In an emergency, the patient is explored endoscopically to detect the hemorrhagic source, which refutes a possible source of bleeding in the esophagus and detects a large clot in the stomach and a large ulcer, with active bleeding, located at the level of the gastric angle. Endoscopic therapeutic attempts do not achieve effective hemostasis and the patient is admitted to the surgical on call service for specialized treatment. Intraoperatively, there is an ulceration of approximately 6/2.5 cm without macroscopic features of malignancy and the presence of a mobile intragastric phytobezoar. We perform extraction of the foreign object and in situ hemostasis. The post-operative evolution is favorable, the patient being transferred on the 8-th postoperative day to the Gastroenterology Clinic for the treatment of the pre-existing hepatic dysfunction. In conclusion, the detection of a bezoar can be difficult, especially in the context of a hemorrhagic complication, due to the rarity of this pathology, but must be taken into account in the differential diagnosis. Treatment can be both surgical and non-surgical.

Keywords: Gastric Phytobezoar, Upper Gastrointestinal bleeding

Introduction

Bezoars represent an undigested mass found in the gastrointestinal tract. They are discovered most frequent in the stomach, although they have been found throughout the history in any level of the gastrointestinal tract (1). Patients presenting modified gastro-intestinal (GI) motility or anatomy have a higher chance of developing bezoars (e.g. individuals with history of partial gastrectomy, individuals with diabetes mellitus complicated with gastroparesis) (2,3). Other risk factors include inadequate mastication, extreme fiber diets, cystic fibrosis or psychiatric pathologies (1,4,5). Bezoars are classified into 4 groups, depending on their composition: phytobezoars (indigestible sustenance particles), trichobezoars (sustenance and hair particles), lactobezoars (milk protein) and pharmacobezoars (fusion of different types of medications) (4). All types of bezoars may have a similar

clinical picture to a certain degree, including: halitosis, palpable abdominal mass, signs of gastric outlet obstruction, or signs of intestinal obstruction.

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In addition to that, pharmacobezoars may present with symptoms related to their pharmacologic properties (high risk of drug intoxication), lactobezoars occur more frequent in premature newborns and trichobezoars form slower, thus causing more subtle symptoms like nausea, early satiety or alopecia. Complications may consist of ulceration, hemorrhage, gastrointestinal obstruction and/or perforation (4,6,7,8,9). Obtaining a meticulous patient history is very important in this situation, while other methods of diagnosis include: oesophagogastroduodenoscopy (gold standard, can sometimes have therapeutic indications), abdominal X-rays, gastrointestinal barium X-rays, ultrasound, computer tomography (9,10,11,12).

Case Report

A 61-year-old female with a medical history significant for alcohol-related liver disease (decompensated hepatic cirrhosis CHILD-PUGH class C, MELD score 23, chronic liver failure, portal hypertension syndrome, esophageal varices grade 2, ascites, chronic anemia, hypoalbuminemia), has been brought to the emergency department presenting upper gastrointestinal bleeding (hematemesis) and epigastric pain. On physical examination she had pale skin, tachycardia, low blood-pressure and obtundation. The abdominal inspection showed distension, stretch marks and abdominal wall

venous collaterals. The palpation and percussion of the abdomen revealed upper abdominal pain and the large amount of free liquid in the abdominal cavity.

The blood tests showed severe normochromic, normocytic anemia (hemoglobin level of 4,7 g/dl), mild dyselectrolytemia and metabolic acidosis (alkaline reserve level of 14 mmol/l).

The upper gastrointestinal endoscopy found no signs of esophageal bleeding, as it was initially suspected, but a high amount of red blood in the stomach and a giant active-bleeding ulcer, situated close to the angular incisure, covered in clots, without any other irregularities. Due to the size of the ulcer they couldn't exclude a malignant lesion. The attempt of hemostasis by injection of epinephrine in different points was inefficient, therefore the patient was admitted to the general surgery clinic and directed straight to the operating room.

After the laparotomy was performed we identified a liver with micronodular aspect, portal hypertension stigmas and a large quantity of ascites. Then a minimal gastrotomy was performed on the anterior gastric surface and the content of the stomach was evacuated revealing a giant, bleeding ulcer in the posterior face of the lesser curvature (fig. 1). Next we also found a phytobezoar measuring about 6 cm long and 2.5 cm wide which we deduced that was fixated on the mucosis create an decubitus ulceration, before the hemorrhage started (fig.2).

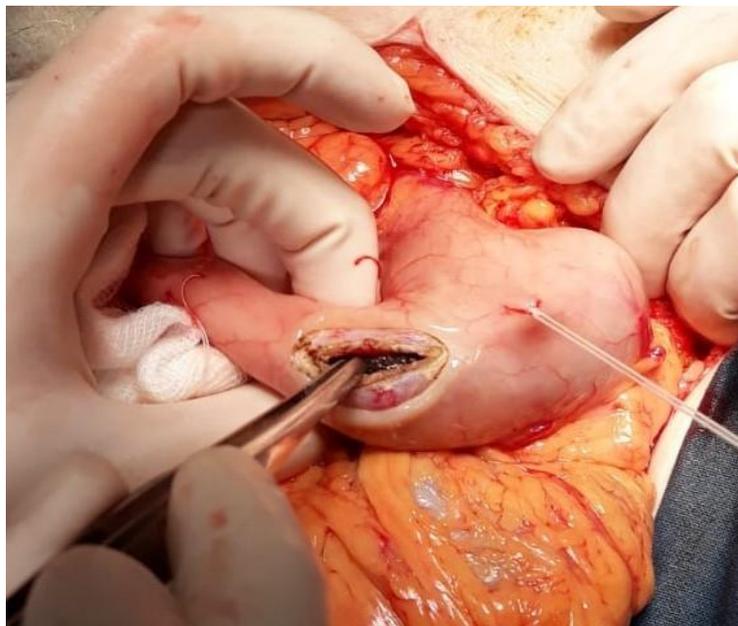


Figure 1. Gastrotomy



Figure 2. Extraction of the phytobezoar and decubitus ulceration

We performed the extraction of the phytobezoar, in situ hemostasis, biopsy of the lesion, gastrorrhaphy and drainage of the abdominal cavity (fig.3).



Figure 3. Phytobezoar

The patient had favorable post-operative outcome, being transferred in the Gastroenterology Clinic in the 8th day after surgery. The pathology report showed that the mucosis lesion was benign.

Discussions

Phytobezoars represent one of the most uncommon etiologies of upper gastrointestinal bleeding (13). There are multiple attempts to obtain an incidence of bezoars and it is commonly understood that it is a rare pathology (14).

In most of the cases bezoars are found in the stomach, although they can travel further in the small or large intestine. In the small intestine they can cause endoluminal occlusion as a complication. Dervisoglou et al. showed that from 369 patients with acute small bowel obstruction over a period of 5 years, 2.39% were caused by bezoars (15). Furthermore, Yakan et al. presented the study of 432 individuals which were operated on for ileus over a period of 10 years, revealing that phytobezoars were accounted for 14 of the cases (3.2%) (16). Kadian et al. noted that in 4 years, 6 cases of gastric bezoars occurred, involving a total of 1400 upper gastrointestinal endoscopies (0.43%) (14). One of the latest studies regarding this, showed an incidence of 0.068%, with 49 gastric bezoar cases over a period of 20 years, 34 of them being phytobezoars (17). Moreover, the prevalence of phytobezoars fluctuates depending on geographic areas, ethnicity or religious nutritional habits (18).

One of the most important predisposing factors is represented by gastric surgery. Procedures like partial gastrectomy, vagotomy, pyloroplasty, antrectomy or gastrojejunostomy can lead to the formation of bezoars within 9 months to 30 years after (2,5,19). In more rare cases bezoars can form in the small intestine due to intestinal motility issues caused by pathologies like diverticulosis, strictures or malignant tumors (20,21). In addition to that, less common contributing factors are represented by excessive fiber diets or moderate consumption of fruits and vegetables, associated with insufficient mastication, chronic administration of medication affecting gastric motility, certain psychiatric pathologies, diabetes mellitus or renal failure (10,22).

Initially, bezoars can be asymptomatic and gradually determine symptoms and signs as they grow in size. The clinical picture may include more unspecific manifestations such as: abdominal discomfort, sensation of fullness, pain, halitosis, nausea, early satiety, alopecia. Furthermore, due to complications, the patient may present signs of intermittent gastric outlet obstruction, gastric outlet obstruction or intestinal obstruction, upper or lower gastrointestinal hemorrhage or perforation (23, 24, 25).

Obtaining a thorough patient history is important before resorting to other methods of diagnosis. In addition to that, radiologic examinations can be used in the diagnostic approach such as: abdominal radiography, barium swallow (it has to be taken into consideration that they can interfere with endoscopic procedures by altering visualization), computed tomography (particularly valuable due to the fact that it can find additional bezoars, especially in the intestine) (10, 11, 26). Endoscopic examinations are the gold standard in diagnosis of bezoars and can sometimes have therapeutic indications. Using high definition imaging can be obtained exact information regarding location, size,

shape, color, existence or imminence of complications (27, 28).

Treatment of gastrointestinal bezoars are personalized according to their size, chemical component, location or associated pathology of the individual. There are a variety of options available including chemical dissolution. Studies revealed a number of substances like hydrochloric acid, sodium bicarbonate, CocaCola® or enzymatic agents that used alone or in mixtures are efficient in bezoar dissolution. There are no exact protocols regarding this method, hence different methodologies are used (9, 29, 30, 31). Endoscopic treatment can be used in a selected number of cases and it is based on mechanical disintegration using different accessories like lithotripters or biopsy forceps. Next, the particles are evacuated using snares or Dormia baskets (32, 33, 34). Laparoscopic surgery has been reported in selected cases, sometimes with endoscopic assistance, offering the advantages associated with this type of surgical approach (35). Open surgery is the preferred strategy in cases of complications, uncertain diagnosis, high volume masses or when other treatment methods have failed (36).

In the case we presented the diagnosis of gastric phytobezoar was incidental, during surgery. Although the patient was middle age, she has been diagnosed with alcoholic related liver cirrhosis years before this episode and was afterwards refractory to medical advice or treatment. At the arrival in the emergency room the patient was in critical condition, but she was stabilized enough time to perform the most important laboratory tests and the endoscopy (given the nature of her symptoms). The upper digestive endoscopy was performed in severe conditions given the large amount of fresh blood and cloths which prevented direct visualization of the phytobezoar but revealed specific information regarding the source of hemorrhage. Because of hemodynamic status with an imminence of hypovolemic shock, other medical explorations were considered unnecessary, the patient being directed immediately towards the operating room for open surgery. Given the fact that the dimensions of the ulcer were consistent with the phytobezoar found floating in the gastric cavity, the surgery team concluded that it was initially fixated in the lesion, gradually leading to ulceration in the mucosa because of the induced pressure necrosis. The bezoar's mobilization, due to unknown factor, most likely was ground zero for a chain of events which could have been potentially fatal.

Conclusions

When hemorrhagic complications appears, the bezoar diagnosis is most of the times an intraoperative finding. Even though gastric phytobezoars represent a rare case of upper gastrointestinal bleeding, they should be taken into consideration when forming a differential diagnosis, especially when facing an individual reluctant to medical advice and treatment or a patient with a mental disorder. The formation of a bezoar requires the synergistic effect of various factors.

The conventional methods of diagnosis are most likely to be used and to be efficient in non-complicated cases, when other treatments than open surgery can be taken into consideration.

Further studies in etiology of bezoars and further technological advancements in the area of gastrointestinal endoscopy and computer tomography may lead to an increase of incidence and a decrease in the rate of complications.

Conflict of Interest

Authors have no conflict of interest to disclose

Ethical issues

The study was approved by the Ethics Commission of the University Hospital "St. Spiridon" Iasi

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