Gastrointestinal Bezoars

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Abstract

Bezoars are foreign materials that are formed by mainly accumulation of undigested foods, medications or hair. They are most commonly seen in stomach. They are usually found in children and young women. There are four types of bezoars including phytobezoar, trichobezoar, lactobezoar and pharmacobezoar. Pain, early satiety, abdominal bloating are main symptoms and complications like hemorrhage, intestinal obstruction and perforation may occur. The treatment alternatives are medical agents, endoscopic interventions and laparoscopic and conventional surgery.

Key words: Bezoar, Treatment modalities

Özet


Anahtar Kelimeler: Bezoar, tedavi yaklaşımları

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Introduction
A bezoar is an agglomeration of food or ingested foreign material in the gastrointestinal tract. The term bezoar is derived from either the ancient Arabic ‘Badzehr’ or the Persian ‘Pahnzehr’ both meaning counter-poison or antidote (1,2). In the past, bezoars were used to treat poisons such as arsenic, venomous bites. They were extracted from stomach or intestines of animals. The first trichobezoar was defined in 1779, since then many different types of bezoars have been reported in literature (3). Bezoars can be classified according to their components: The main types are phytobezoar, trichobezoar, lactobezoar and pharmacobezoar (Table I).

<table>
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<th>MAIN BEZOAR TYPES</th>
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<tr>
<td>1. PHYTBEZOAR</td>
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<td>2. TRICHBEZOAR</td>
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<td>3. PHARMACOBEZOAR</td>
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<td>4. LACTOBEZOAR</td>
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Table I: Bezoar types

Phytobezoars are mainly formed by indigestible fruits, vegetable fibers, skin, or seeds. Phytobezoars are usually detected in adults with a history of previous gastric surgery, reduced gastric acidity, poor gastric mixing, or delayed motility. Trichobezoars, are congelemation of hairs or decaying food material. Pharmacobezoars consist of undigested tablets or semi-liquid drugs. Lactobezoars are frequently found in low-birth-weight or premature neonates fed with a highly concentrated formula. They are most commonly found in stomach but may also be detected in small and large bowel. Gastric bezoars are usually formed in patients with altered gastrointestinal motility due to gastric surgery, medications or patients with psychologic problems.

Symptoms
Although bezoars may cause serious complications, most of the patients with bezoars are asymptomatic. As the size of bezoar increases by time, vague and insidious complaints, like epigastric discomfort, nausea and vomiting, early satiety, weight loss, poor appetite and malnutrition become apparent. The anatomic localization of bezoar is main factor that determine the presenting symptoms. Dysphagia, reflux and retrosternal pain are main symptoms in esophageal bezoars. Stomach bezoars are often presented with pain, nausea and vomiting, weight loss, ulcer formation and pyloric obstruction. Bezoars located in small intestine are usually presented with intestinal obstruction. While small intestine has smallest diameter in ileum, most of the obstructions occur in this part. Cholestasis and pancreatitis are also reported due to bezoars. Perforation in gastrointestinal tract can occur and may cause acute abdomen (4) and mortality. A rare presentation of trichobezoar is Rapunzel syndrome (5) which is characterized by extension of bezoar into the small and sometimes the large bowel.

Diagnosis
Accurate preoperative diagnosis of bezoars is difficult. Physical examination may be helpful in some patients. Mobile abdominal mass, alopecia, putrid odor in breath are subtle signs of bezoars. Air-fluid levels due to intestinal obstruction, a mass image in left upper quadrant can be detected in plain x-ray. Barium studies may disclose a filling defect.

Abdominal computed tomography is radiologic technique of choice specially for bezoars causing intestinal obstruction. A CT image of a bezoar is a well delineated, heterogeneous, ovoid intraluminal mass with gas bubbles. Ripolles T (6) et al reported 17 patients with gastrointestinal bezoars. Bezoars were diagnosed by CT in all patients with 100% accuracy.

Upper gastrointestinal endoscopy is diagnostic and also therapeutic for bezoars located in the esophagus and stomach. Phytobezoars are brown or green in colour and usually found in fundus or antral region of stomach. On the other hand, trichobezoars, like a hair ball seen as black due to enzymatic and acid oxidation of hair material in endoscopy.

Treatment
Medical Treatment
Some enzymes and chemical agents may be used in treatment of phytobezoars. Trichobezoars require surgical intervention. Cellulase and papain are proteolytic enzymes that can be successful in enzymatic degregation of a bezoar. They cleave protein linkages within foreign materials. Lin CS (7) was reported good result with endoscopic coca-cola injection and irrigation. Acetylcystane without any side effect was also used with gastric lavage for bezoar dissolution. (Table II)
MEDICAL AGENTS USED FOR BEZOARS

| CELLULOSE  | PAPAIN  | ACETYLCYSTEINE | METOCLOPRAMIDE | COCA-COLA |

Table II: Medical agents used for bezoars

shows the medical agents that were used in management of gastric bezoars. While most of the trichobezoars are associated with psychiatric problems, protracted psychiatric treatment is very important in these patients. Endoscopy is beneficial in removal of small bezoars located in stomach. Most of the bezoars are so large that endoscopic fragmentation is mandatory. Endoscopic use of different instruments have been described. Normal biopsy forceps, polypectomy snare, foreign body forceps can be used for breaking up the bezoar. In some patients, endoscopic removal of a bezoar is difficult and serious complication like esophageal perforation can occur (8).

Reference