



## Endoscopic treatment of a large gastric bezoar: A Case report

Büyük gastrik bezoarın endoskopik tedavisi: Vaka sunumu

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Bezoars are concretions of undigested or partially digested foreign material in the gastrointestinal tract. They occur in patients with altered gastrointestinal motility or anatomy (previous gastricsurgery, diabetes mellitus, neurological disorders). They are rare, with an estimated %0.3 on upper endoscopy. The most common symptoms include abdominal pain, nausea, vomiting, early satiety, anorexia, and weight loss. We present a patient who diagnosed with 8-9 cm phytobezoar, and treated by endoscopic method. An 87 years old woman presented to our emergency room with upper abdominal pain, nausea, and postprandial emesis for 3 days. Emergency esophagogastroduodenoscopy revealed prepyloric antrum, gastric phytobezoar (8-9 cm) and ulcers (10-12 mm). We used an endoscopic snare to cut the bezoar into several pieces. After endoscopy, all bezoars disappeared. There was no recurrence during 1-year follow-up. In conclusion, endoscopic treatment may be a safe and viable option for the extraction of gastric bezoars presenting with gastric outlet obstruction. This is the rare case that such a large phytobezoar (8×9 cm) has been fragmented with an ordinary polypectomy snare.

**Key words:** Gastric bezoar, endoscopy, treatment

Bezoarlar gastrointestinal sistemde sindirilmemiş veya kısmen sindirilmiş yabancı materyallerin konsantre olmuş halidir. Genelde bozulmuş gastrointestinal motilite veya anatomisi olan hastalarda (geçirilmiş gastrik cerrahi, diabetes mellitus, nörolojik bozukluklar) görülür. Nadir karşılaşılan bu duruma üst gastrointestinal endoskopilerin %0.3'ünde rastlanır. Sıklıkla karın ağrısı, bulantı, kusma erken doyma, anoreksi ve kilo kaybı gibi semptomlar görülür. Bu sunumda 8-9 cm'lik bezoar saptanan ve endoskopik yöntemle tedavi ettiğimiz hastamızı paylaştık. 87 yaşında bayan hasta, üç gündür olan karın ağrısı, bulantı ve kusma şikayetleri ile acil servisimize başvurdu. Yapılan endoskopide prepiloric antruma oturmuş 8-9 cm'lik bezoar ve altında 10-12 mm'lik ülser görüldü. Bezoar snare ile parçalara bölündü. Endoskopi sonrası hasta takibe alındı ve 1 gün sonra yapılan endoskopide tüm bezoar parçalarının kaybolduğu görüldü. Hastanın 1 yıllık takibinde bezoar tekrarlamadı. Sonuç olarak endoskopik tedavi gastrik çıkış obstrüksiyonu ile gelen bezoar hastalarında güvenilir ve etkin bir yöntemdir. Bu kadar büyük bir gastrik bezoarın polipektomi snare kullanılarak, endoskopik yöntemle parçalandığı bu vaka literatürde nadir bir sunumdur.

**Anahtar kelimeler:** Gastrik bezoar, endoskopi, tedavi

### INTRODUCTION

Bezoars are concretions of undigested or partially digested foreign material in the gastrointestinal tract (1). They are classified according to their composition. The major types are phytobezoars (composed of vegetable matter), trichobezoars (composed of hair) and pharmacobezoars (composed of ingested medications) (1-3). Development of bezoars is usually associated with predisposing risk factors.

They occur in patients with altered gastrointestinal motility or anatomy (previous gastricsurgery, diabetes mellitus, neurological disorders). Psychiatric illness, suicidal tendencies and mental retardation are common associations with trichobezoar (hair bezoar) (1-3). They are rare, with an estimated %0.3 on upper endoscopy (4). They cause nonspecific symptoms and are usually found incidental-

ly in patients undergoing upper gastrointestinal endoscopy or imaging. The most common symptoms include abdominal pain, nausea, vomiting, early satiety, anorexia, and weight loss (4,5). They represent an uncommon cause of abdominal mass. The bezoars although rare, when undiagnosed can lead to complications such as ulcers, gastric bleeding or perforation and obstruction (4,5). Although many bezoars become quite large, gastric outlet obstruction is an uncommon presentation.

We present a case of an 87 years old female patient who presented with the complaints of nausea, vomiting, and insufficient oral intake, diagnosed with 8-9 cm phytobezoar, and treated by endoscopic method.

### CASE REPORT

An 87 years old woman applied to our emergency unit with upper abdominal pain, nausea, and postprandial emesis for 3 days. She had a history of type 2 Diabetes Mellitus, hypertension, dementia, hypothyroidism, polyneuropathy, chronic renal failure and bladder neuromuscular dysfunction. The drugs she used regularly were metformin, levothyroxine, candesartan, hydrochlorothiazide, solifenacin succinate, gabapentin, lansoprazole, pinaverium. Her vital signs were stable. Physical examination revealed moderately distended abdomen and pain mainly located in the right quadrants in deep palpation. Auscultation revealed active bowel peristalsis. All other physical examinations were essentially normal. Emergent esophagogastroduodenoscopy (EGD) revealed gastric phytobezoar (8-9 cm) (Figure 1) and gastric ulcer (10-12 mm) (Figure 2) at prepyloric antrum. We used various endoscopic devices to successfully break and remove the bezoar. EGD procedure was performed with a conventional single accessory channel endoscope. Firstly, we used endoscopic forceps and tripod for fragmentation of bezoar. However, this was insufficient to extract the obstruction. Therefore,

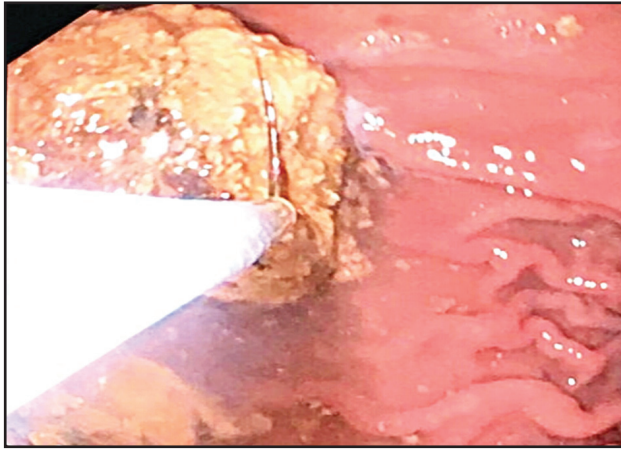
we used an endoscopic snare to cut the bezoar into several pieces (Figure 3). The gastric phytobezoar was fragmented endoscopically with a standard oval 40 mm polypectomy snare (Figure 4). For dissolution of the intragastric bezoar, the patient underwent Cola diet for 1 week. All bezoar disappeared at control endoscopy after a week. The patient discharged home after a week with antacids regimen, and she recovered without complications. There was no recurrence during 1-year follow-up. Informed consent form received from the patient.



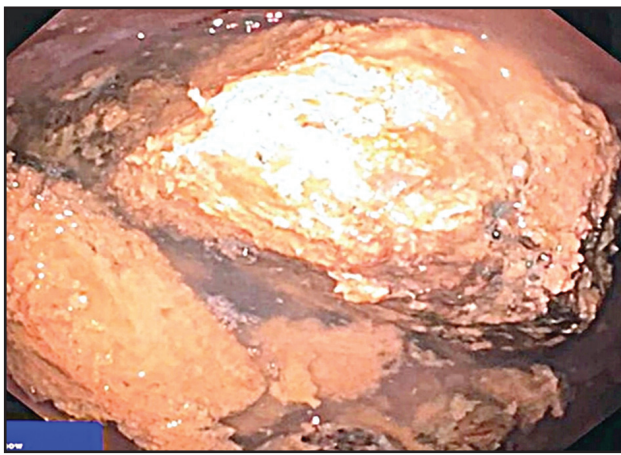
**Figure 1** Endoscopic image of the intragastric phytobezoar.



**Figure 2** Prepyloric ulcer.



**Figure 3** Bezoar squeezed with snare.



**Figure 4** Fragmented bezoar.

## DISCUSSION

Patients with bezoar are mostly asymptomatic for many years. The most common symptoms include abdominal pain, nausea, vomiting, early satiety, anorexia, and weight loss (5). Gastrointestinal bleeding due to concurrent gastric ulcer is a common presentation in patients who have previously undergone surgery (5). The ulcers may be due to peptic ulcer disease or pressure necrosis. Although many bezoars get quite large, gastric outlet obstruction is an uncommon presentation (6). Other rare

complications include small bowel obstruction and acute pancreatitis (7,8). Physical examination is unremarkable in most patients with a gastric bezoar except for an occasional abdominal mass or halitosis. Bezoars are usually an incidental finding on imaging in patients undergoing evaluation for nonspecific symptoms. Abdominal radiograph with or without barium, abdominal ultrasound, or computed tomography scan may show the bezoar as mass or a filling defect.

Bezoars have rarely been associated with several gastrointestinal complications. These include gastrointestinal perforation, peritonitis, protein losing enteropathy, steatorrhea, pancreatitis, intussusception, obstructive jaundice, appendicitis, constipation, and pneumatosis intestinalis (9,10). Upper gastrointestinal endoscopy is required to establish the diagnosis of a gastric bezoar and to obtain samples to determine its composition. Endoscopically, a gastric bezoar has the appearance of a dark brown, green, or black ball of amorphous material in the fundus or antrum of the stomach.

While the optimal strategy is controversial in the absence of studies comparing different modalities, for patients with mild symptoms due to bezoars. For patients with bezoars that fail to dissolve or are resistant to chemical dissolution (trichobezoars), and patients with moderate to severe symptoms due to large bezoars, endoscopic therapy may be a good choice. We reserve surgery for selected patients with gastric bezoars if chemical dissolution and endoscopic fragmentation cannot be performed or fail and for patients with complications. Endoscopic therapy involves fragmenting the bezoar with water jet, direct suction through a large channel (6 mm) endoscope, forceps, or snares. The fragments can then be cleared with the endoscope or by using a large bore nasogastric tube, or allowed to pass through the gastrointestinal tract (11). A variety of other methods have been described in case reports when the above techniques

have failed including use of the Nd: YAG laser, monopolar diathermy knife, and mechanical, electrohydraulic, extracorporeal lithotripsy, and injection of enzyme solutions or Coca-Cola (12-15). Up to 20 percent of patients have recurrent bezoars (11). In order to prevent recurrence, patients should be encouraged to increase water intake, modify their diet, chew their food carefully, and to seek psychiatric evaluation if needed. Patients should also be evaluated for an underlying motility disorder.

We believe that endoscopic therapy should be attempted before surgery in cases of gastric bezoars. Surgical removal of the bezoar may be necessary in some cases but was not considered for our patient, owing to the good evolution she demonstrated. In this case, the size of the bezoar (> 90 mm) made it necessary to break it using a water jet, endoscopic snares, forceps. The patient was able to avoid invasive surgery through repeated endoscopic procedures. Her history of old age, and type 2 Diabetes Mellitus are risk factors for phytobezoars, which are composed of undigested food. Endoscopic treatment is preferable to surgery not only because it is less invasive, but also because of the possibility of the recurrence of phytobezoars.

For our case, a large gastric phytobezoar impacted and ulcerated the antrum was discovered endosco-

pically. This gastric phytobezoar was fragmented endoscopically in the stomach and its pieces were removed with an ordinary polypectomy snare. Chemical dissolution with Coca-Cola dissolved the pieces. The gastric phytobezoar was successfully removed. After 6 days, the patient had complete relief from all remaining symptoms, including stomach pain and emesis. Follow-up gastroscopy revealed that gastric bezoar had disappeared, and the ulcer had reduced. The patient was discharged after recovery and did not relapse for 1 year.

In conclusion, endoscopic treatment may be a safe and viable option for the extraction of gastric bezoars presenting with gastric outlet obstruction when the patient's condition is stable and there is no evidence of ischemia. This is the rare case that such a large phytobezoar (8×9 cm) has been fragmented with an ordinary polypectomy snare and chemical dissolution with Coca-Cola.

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**Conflicts of Interests:** *The authors declare that there are no conflicts of interest regarding the publication of this article.*

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