

Gastric Outlet Obstruction Caused By A Giant Gastric Trichobezoar: Case Report

Mide Çıkış Tıkanıklığı Yapan Dev Trikobezoar

Hasan BEKTAŞ, MD,^a
M. Emin GÜNEŞ, MD,^a
Özhan ÖZCAN, MD,^a
Feyzullah ERSÖZ, MD,^a
Erdem ŞENTATAR, MD^a

^a2nd General Surgery Clinic,
İstanbul Training and Research Hospital,
İstanbul

Geliş Tarihi/Received: 24.03.2009
Kabul Tarihi/Accepted: 09.06.2009

Yazışma Adresi/Correspondence:
Hasan BEKTAŞ, MD
İstanbul Training and Research Hospital,
2nd General Surgery Clinic, İstanbul,
TÜRKİYE/TURKEY
tutku94@mail.koc.net

ABSTRACT A bezoar is a mass formed as a result of the accumulation of indigestible material in the stomach and/or small intestine. In normal humans, a large amount of foreign material can be cleared from the gastrointestinal tract. Bezoars, therefore, form as a result of changes in the gastric anatomy and physiology and repetitive exposure to the ingested material. These materials can include vegetables with high fiber content (phytobezoars), fats of animal origin, hair (trichobezoars) or drugs such as anti-acids (pharmobezoars). Gastric bezoars frequently occur after gastric surgery. In individuals without a history of gastric surgery, psychiatric disorders such as trichotillomania (an irresistible urge to remove and swallow one's own hair) are frequently the underlying reason. In this report, we present the case of a giant gastric trichobezoar causing outlet obstruction in a young female patient. Bezoar is a mass of accumulated undigested food in stomach or/and small intestine. A great amount of foreign bodies can be washed out from the gastrointestinal system in normal individuals. Changes in stomach and gastrointestinal anatomy and physiology, some drugs or insisted take of foods rich with fibers and fat or hair can lead to bezoar formation. Stomach bezoars often follow gastric surgery. The most frequent underlying cause in patients who were not subjected to gastric surgery is psychiatric problems such as trichotillomania. In this article we presented a giant gastric trichobezoar obstructing gastric outlet in a 10 year-old girl.

Key Words: Abdominal pain; bezoars

ÖZET Bezoar sindirilemeyen maddelerin mide ve/veya ince barsakta birikmesi sonucu oluşan bir kitledir. Normal insanda büyük miktarda yabancı cisim gastrointestinal sistemden temizlenebilir. Bu yüzden bezoar oluşumu, mide ve gastrointestinal sistem anatomi ve fizyolojisindeki değişiklikler ve alınan maddede ısrar sonucu gelişir. İsrarla alınan madde lifli sebze (fitobezoar), hayvansal yağlar, kıl (trikobezoar) veya antiasit gibi ilaçlar (farmobezoar) olabilir. Mide bezoarları sıklıkla mide cerrahisi sonrası oluşur. Mide cerrahisi geçirmeyen kişilerde ise sıklıkla altta yatan trikotilomani (kendi saçlarını koparmak ve yutmak için dayanılmaz istek duymak), gibi psikiyatrik problemler yatar. Bu raporda genç bir bayan hastada çıkış darlığına sebep olmuş bir dev gastrik trikobezoar vakasını sunduk. Bezoar sindirilemeyen maddelerin mide ve/veya ince barsakta birikmesi sonucu oluşan bir kitledir. Normal insanda büyük miktarda yabancı cisim gastrointestinal sistemden temizlenebilir. Bu yüzden bezoar oluşumu, mide ve gastrointestinal sistem anatomi ve fizyolojisindeki değişiklikler ve alınan maddede ısrar sonucu gelişir. İsrarla alınan madde lifli sebze, hayvansal yağlar, kıl veya ilaçlar olabilir. Mide bezoarları sıklıkla mide cerrahisi sonrası oluşur. Mide cerrahisi geçirmeyen kişilerde ise sıklıkla altta yatan trikotilomani gibi psikiyatrik problemler yatar. Bu raporda 10 yaşında bir kız çocuğunda çıkış darlığına sebep olmuş bir dev gastrik trikobezoar vakasını sunduk.

Anahtar Kelimeler: Karın ağrısı; bezoarlar

The term 'bezoar' refers to the accumulation of indigestible food or foreign material in the form of a hard, solid mass.¹ In normal humans, a large amount of foreign material can be cleared from the gastrointestinal tract. Bezoars, therefore, form as a result of changes in the gastric anatomy and physiology and repetitive exposure to the ingested material. These materials can include vegetables with high fiber content (phytobezoars), fats of animal origin, hair (trichobezoars) or drugs such as anti-acids (pharmobezoars).²

Gastric bezoars frequently occur after gastric surgery. In individuals without a history of gastric surgery, psychiatric disorders such as trichotillomania (an irresistible urge to remove and swallow one's own hair) are frequently the underlying reason. Rarely, bezoars may occur in patients with diabetes mellitus or myotonic muscular dystrophy, or during treatment with cimetidine.²

Bezoars can cause chronic abdominal pain, and, if undiagnosed, they may lead to gastric ulcer, gastric bleeding, perforation, intussusception and obstruction of the small intestine.³ Mortality rates as high as 30% have been reported in adults.¹

CASE REPORT

A 10 year-old girl presented to the emergency room with abdominal pain of 3 days' duration and vomiting over the previous 12 hours. She reported having similar complaints occasionally in the previous 3 years. Although the patient did not appear cachectic during physical examination, she was slender in general. Her weight was 26 kg and her height was 125 cm. Her abdomen was slightly distended, her bowel sounds were hyperactive and a painless, hard mass could be palpated in the left upper quadrant. Abdominal ultrasonography revealed gastric distension and the image of a mass with boundaries. Abdominal CT with contrast material showed a heterogeneous mass completely filling the stomach and causing gastric distension and intraluminal filling defect (Figure 1). The image was suggestive of a trichobezoar.

Afterwards, the patient's habits were questioned further, and the patient's family confirmed a



FIGURE 1: Abdominal CT.

history of trichomania and trichophagia that had been present for a long time. A surgical intervention was planned on the same day. A gastrostomy on the anterior surface of the stomach was performed with a longitudinal incision of approximately 12 cm. A single large trichobezoar measuring 25x13x7 cm was removed; it filled the entire stomach and extended to the duodenum (Figure 2). Superficial ulcers were observed on the gastric mucosae. The patient was discharged on the fifth day post-operatively, and pediatric psychiatric care was recommended.

DISCUSSION

Bezoars consist of indigestible food and fibrous material. Although they can occur in any part of the gastrointestinal system, from the esophagus to the



FIGURE 2: Surgical image.

rectum, they occur most frequently in the stomach. A diverse spectrum of materials (chewing gum, fruit stones, toilet paper, candy) has been reported to cause bezoars.⁴⁻⁹ Among these, phytobezoars represent the most frequently observed and the best-known group. They are usually seen in adults and are generally associated with a history of gastric surgery, decreased gastric acidity, delayed gastric emptying or decreased motility. Trichobezoars are frequently due to the ingestion of human hair, but may also be due to the hair of domestic animals¹⁰ and /or carpet-rug fibers. Trichobezoars are most frequently observed in young female patients with mental retardation or psychological disorders such as trichomania and trichophagia. A review in 1939 reported that 80% of 311 trichobezoar patients were under age 30 years,¹¹ while a later study found that 90% of patients with trichobezoars were females under the age of 20 years.²

The mechanism by which a trichobezoar forms in a stomach with no previous history of gastric intervention is unclear. Although the most commonly accepted hypothesis starts with the trapping of hairs within the gastric folds, followed by the gradual growth of the mass over time, this hypothesis cannot fully explain why these hairballs are initially trapped in the stomach. The gastric emptying of solid material has been found not to differ in individuals with and without bezoars, including post-operative patients.¹²

Problems in the gastric grinding and mixing mechanism may also play a role in the formation of trichobezoars. When we examined the surgical specimen closely, we noticed that hair fibers were tightly attached to each other, forming a hairball, and that these fibers could be taken apart only by tearing. In addition, most trichobezoars are impossible to fragment endoscopically and frequently require surgical intervention. In contrast, phytobezoars can be fragmented by medical treatment with motility-increasing agents and enzymes

or by endoscopic fragmentation and removal with forceps or snares.¹³⁻¹⁵

The diagnosis of trichobezoars is mostly based on a detailed medical anamnesis and physical examination. Diagnosis is frequently confirmed by abdominal X-rays, upper gastrointestinal system X-rays with contrast media, abdominal ultrasonography, tomography and/or gastroscopy, with the most reliable methods being gastroscopy, followed by computerized tomography of the abdomen.¹⁶ Prior to surgery, the bezoar should be confirmed and its type should be determined by endoscopic examination. Our patient, a child with a history of trichomania, was diagnosed by computerized tomography. Since her giant trichobezoar could not likely be removed endoscopically, an endoscopic examination was not performed. However, in older patients and in patients undergoing elective surgery, endoscopic examination may be performed for differential diagnosis.

Gastric trichobezoars have been treated with snares, baskets and lithotripsy,¹⁷ but all were unsuccessful for gastroscopic fragmentation. Medical treatments with enzymatic, mucolytic and prokinetic agents have been effective against phytobezoars, but not against trichobezoars. The classical treatment of choice is the removal of the trichobezoar by anterior gastrotomy,¹³⁻¹⁹ but, more recently, laparoscopic removal of trichobezoars has been found successful.^{20,21} A review of the literature shows that the term 'giant bezoar' has been reserved for trichobezoars that fill the antrum of the stomach and extend to the angular area.²² Since the trichobezoar in our patient was very large and since her condition presented as a medical emergency, we utilized the classical anterior gastrotomy method. In conclusion, bezoars should be considered in patients with acute abdominal pain and mass lesions when no radiological, physical or laboratory findings suggest cancer.

REFERENCES

- Williams RS. The fascinating history of bezoars. *Med J Aust* 1986;145(11-12):613-4.
- Lee J. Bezoars and foreign bodies of the stomach. *Gastrointest Endosc Clin N Am* 1996; 6(3):605-19.
- Wadlington WB, Rose M, Holcomb GW Jr. Complications of trichobezoars: a 30 year experience. *South Med J* 1992;85(10):1020-2.
- Kaplan M, Ozeri Y, Agranat A, Brisk R, Eylath U. Antacid bezoar in a premature infant. *Am J Perinatol* 1995;12(2):98-9.
- Milov DE, Andres JM, Erhart NA, Bailey DJ. Chewing gum bezoars of the gastrointestinal tract. *Pediatrics* 1998;102(2):e22.
- Yulevich A, Finaly R, Mares AJ. Candy bezoar: an unusual cause of food bolus bezoar. *J Pediatr Gastroenterol Nutr* 1993;17(1):108-10.
- Goldman RD, Schachter P, Katz M, Bilik R, Avigad I. A bizarre bezoar: case report and review of the literature. *Pediatr Surg Int* 1998;14(3):218-9.
- McAlinden MG, Potts SR. Sponge bezoar: a rare cause of abdominal pain. *Ulster Med J* 1999;68(1):36-7.
- Tsou VM, Bishop PR, Nowicki MJ. Colonic sunflower seed bezoar. *Pediatrics* 1997;99(6):896-7.
- Akcan Y, Yagmurdu MC, Gökdoğan S, Özdemir A, Bayraktar Y. [Can gastric bezoar be an occupational disease? A case report and endoscopic treatment]. *Türkiye Klinikleri J Gastroenterohepatol* 1998;9(3):132-5.
- DeBaKey M, Ochsner A. Bezoars and concretions: Comprehensive review of literature with analysis of 303 collected cases and presentation of 8 additional cases. *Surgery* 1939;5(1): 132-60.
- Calabuig R, Navarro S, Carrio I, Artigas V, Mones J, Puig LaCalle J. Gastric emptying and bezoars. *Am J Surg* 1989;157(3):287-90.
- DeBacker A, Van Nooten V, Vandenplas Y. Huge gastric trichobezoar in a 10-year-old girl: case report with emphasis on endoscopy in diagnosis and therapy. *J Pediatr Gastroenterol Nutr* 1999;28(5):513-5.
- Gaia E, Gallo M, Caronna S, Angeli A. Endoscopic diagnosis and treatment of gastric bezoars. *Gastrointest Endosc* 1998;48(1):113-4.
- Soehendra N. Endoscopic removal of a trichobezoar. *Endoscopy* 1989;21(4):201
- Jensen AR, Trankiem CT, Lebovitch S, Grewal H. Gastric outlet obstruction secondary to a large trichobezoar. *J Pediatr Surg* 2005;40(8):1364-5.
- Wang YG, Seitz U, Li ZL, Soehendra N, Qiao XA. Endoscopic management of huge bezoars. *Endoscopy* 1998;30(4):371-4.
- Dann DS, Rubin S, Passman H, Deosaransingh M, Bauernfeind A, Berenbom M. The successful medical management of a phytobezoar. *Arch Intern Med* 1959;103(4):598-601.
- Phillips MR, Zaheer S, Drugas GT. Gastric trichobezoar: Case report and literature review. *Mayo Clin Proc* 1998;73(7):653-6.
- Nirasawa Y, Mori T, Ito Y, Tanaka H, Seki N, Atomi Y. Laparoscopic removal of a large gastric trichobezoar. *J Pediatr Surg* 1998;33(4): 663-5.
- Song KY, Choi BJ, Kim SN, Park CH. Laparoscopic removal of gastric bezoar. *Surg Laparosc Endosc Percutan Tech* 2007;17(1):42-4.
- Rispo A, Di Girolamo E, Bevilacqua G, Cozzolino A, Sullo G, Pasquale L. Giant gastric trichobezoar: A direct indication to surgery. *Eur Rev Med Pharmacol Sci* 2006;10(5):279- 80.