

The giant in the stomach – trichobezoar

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Prz Gastroenterol 2013; 8 (5): 330–332

DOI: 10.5114/pg.2013.38738

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Bezoar is an uncommon phenomenon which results from the accumulation of ingested foreign material such as hair, fur or fiber which can easily lead to formation of a large mass in the intestinal tract [1]. Bezoars were once prized as magical items with protective properties. The word “bezoar” comes from the Persian for “protection from poison”. People would place bezoars in their drinking glasses as an antidote to any potential poisons, and even set them into jewelry. There was a gold-framed bezoar in the Crown Jewels of Queen Elizabeth I as recently as 1962.

During diagnostic gastrointestinal endoscopy it can be found in less than 1% of all patients complaining about nonspecific abdominal symptoms [2]. The first case was reported in the literature by Baudomant in 1779 [3] and the first surgical removal was performed in 1883 by Schonbern [3]. Depending on what it is made of we can distinguish different bezoars. The major types are phytobezoars (composed of vegetable fibers), trichobezoars (hair, fur), and pharmacobezoars (drugs). Medications reported to cause bezoars include aluminum hydroxide gel, enteric-coated aspirin, sucralfate, guar gum, cholestyramine, enteral feeding formulas, psyllium preparations, nifedipine, and meprobamate [4].

The structure grows because of continuous supply of food rich in cellulose, matted together by protein, mucus and pectin. Bezoars are rare in healthy people. It is believed that any previous operations or gastric dysfunction can lead to formation of a new mass. More recent studies have shown that 70% to 94% of patients with bezoars have a history of gastric surgery and 54% to 80% have undergone vagotomy, pyloroplasty, subtotal distal gastrectomy or antrectomy [5]. It is also statistically significant for patients with impaired gastric emptying to have a higher chance of getting a bezoar. Diabetics with autonomic neuropathy are also at risk.

Trichotillomania (repeated action of pulling the hair for pleasure or decreasing tension) and trichophagia

lead to formation of a trichobezoar in the stomach. Trichotillomania is considered as a psychiatric state caused by the bad perception that one has about one’s own hair, negative emotional experiences (tension, loneliness, fatigue) and recently identified factors such as studying, reading, and watching television [3]. The Diagnostic and Statistical Manual of Mental Disorders of the American Psychiatric Association (DSM-IV) classifies it as an impulse control disorder. Criteria for diagnosis of this pathology are shown in Table I. Psychiatric follow-up is important although no conclusion has been reached with respect to whether the use of medication makes any difference in the progression of this condition. This follow-up care should be extended to family members, who should be vigilant with patients, since recurrences of the problem have been described [6].

Only 1% of patients with trichophagia develop a trichobezoar [7]. Patients frequently have an underlying psychiatric condition. Hairs come down through the esophagus, get flushed by gastric acid, then they become black (regardless of their previous color), mixed with regular food and combine to form a bigger mass. When it gets colonized by different types of bacteria it can be a reason for an unpleasant smell from the mouth.

Phytobezoars are mostly found in men in their 40s and 50s, while trichobezoars are typically diagnosed in young woman [8]. For many years symptoms may not even be recognized and they can develop very slowly. The most common ailments are abdominal pain, vomiting, nausea, anorexia and loss of weight, and early satiety. Those symptoms are rather nonspecific and can be caused by any other gastric disease. Bezoars can be a reason for some serious gastrointestinal complications such as perforation, ulceration, peritonitis, steatorrhea, pancreatitis, obstructive jaundice, appendicitis, and pneumatosis intestinalis [9]. Another uncommon issue is drug overdose from a pharmacobezoar. One patient presented with a theophylline over-

Table I. Criteria for diagnosing trichotillomania

Repetitive pulling of hair resulting in significant hair loss
Increase in the level of stress before or during hair pulling or intention to avoid hair pulling
Sensation of relaxation, pleasure or gratification during hair pulling
Alterations are not well explained by another mental disorder or other general medical condition
Alteration causes significant clinical stress or deterioration in work, social life or other important functional areas

dose due to the presence of an unrecognized bezoar containing 29 g of theophylline, the residue of many sustained-release tablets [10].

Trichobezoars are mostly diagnosed as an incidental finding during abdominal X-ray in patients with non-specific symptoms. Abdominal ultrasound or computed tomography (CT) can reveal a mass or filling defect in the stomach. The most valuable examination is upper gastrointestinal endoscopy. Direct visualizations can be achieved and some sample taking as well.

There are different possibilities for medical treatment of a bezoar [11]. For this purpose chemical dissolution, endoscopy, and surgery can be performed. In one study, Coca-Cola alone achieved complete bezoar bubbles dissolution of 23.5% of patients. Coca-Cola appears to be more effective in dissolving bezoars in patients with phytobezoars and pharmacobezoars [12]. Endoscopic removal requires a water jet to cut the whole mass into smaller parts; a large channel endoscope (6 mm) is used in this procedure. Subsequently all fragments can be taken out by forceps via the esophagus. Surgical treatment is mostly considered in patients in whom previous chemical or endoscopic therapy failed or for those with complications such as obstruction or bleeding.

Gastric trichobezoar with a duodenal or duodenojejunal tail is named Rapunzel syndrome after the 1812 German tale written by the Grimm brothers (also known as an animated musical film by Walt Disney Stu-

dios), where a girl with long-braided hair used it to help her lover climb the tower where she was imprisoned [13]. It is a rare form of trichobezoar. Until 2007, only 27 patients were reported to have Rapunzel syndrome and one of these concerned a man [14].

The case concerns a 22-year-old woman with a 9-month history of epigastric pain. She also noticed reduction of body mass by about 15 kg and a palpable tumor. After consultation in a provincial hospital, gastroscopy was performed. The examination revealed no pathology in the esophagus or the cardia and a giant bezoar in the stomach which filled its cavity leaving the fundus free. The bezoar entered the duodenal cap through the pylorus and it ended in the descending part of the duodenum. The size of the bezoar was estimated at about 25 cm × 15 cm. The patient was directed to our University Hospital of Wrocław. On admission she confirmed eating her hair in childhood (trichotillomania). She also announced that she had undergone caesarean section twice, in 2009 and 2010, but a bezoar was not noticed. Blood tests revealed slight anemia (Hb 11.5 g/dl, MCV 71.8 fl, MCH 22.2 pg, MCHC 30.9 g/dl) which could be a result of iron deficiency. After overall examination and positive qualification for surgical treatment the operation was performed (Figure 1). In general anaesthesia the abdominal cavity was opened with an upper midline incision. Opening the stomach showed a giant trichobezoar filling 3/4 of its cavity. The



Figure 1. Photograph from the middle of the operation



Figure 2. Photograph of the whole bezoar after the operation

bezoar was removed in one part. Gastritis was found. The stomach was stitched and a drain was placed. The whole removed finding was sent for pathological studies (Figure 2). Postoperative status was good. The patient did not report pain, and body temperature was normal. The drain was removed on the third day. The patient was discharged on the sixth day in a good condition. Pathomorphological studies confirmed bezoar diagnosis. The patient was advised to change her habits. Moreover, psychiatric consultation was recommended.

Because bezoar is not a very common disorder it requires great alertness for a doctor, especially when a young woman describes unclear abdominal symptoms such as bloating or pain. They can be found in healthy patients without any gastrointestinal diseases but with some typical habits or psychiatric problems the diagnosis should be extended. It would be very beneficial for patients with those kinds of dysfunctions to have regular checkups. In such cases a psychiatric evaluation is recommended.

References

1. Gonuguntla V, Joshi DD. Rapunzel syndrome: a comprehensive review of an unusual case of trichobezoar. *Clin Med Res* 2009; 7: 99-102.
2. Kadian RS, Rose JF, Mann NS. Gastric bezoar-spontaneous resolution. *Am J Gastroenterol* 1978; 70: 79.
3. Morales-Fuentes B, Camacho-Maya U, Leslie Coll-Clemente F. Trichotillomania, recurrent trichobezoar and Rapunzel syndrome: case report and literature review. *Cir Cir* 2010; 78: 265-6.
4. Stack PE, Thomas E. Pharmacobezoar: an evolving new entity. *Dig Dis* 1995; 13: 356-64.
5. Robles R, Parrilla P, Escamilla C, et al. Gastrointestinal bezoars. *Br J Surg* 1994; 81: 1000.
6. Frey AS, McKee M, King RA, Martin A. Hair apparent: Rapunzel syndrome. *Am J Psychiatry* 2005; 162: 242-8.
7. Wali P, Khan S. Recurrence of Rapunzel syndrome (case report). *J Pediatr* 2010; 157: 343.
8. Talaiezhadeh AH, Javaherizadeh H. An unusual trichobezoar in a non-psychiatric nine-year-old girl. *Prz Gastroenterol* 2011; 6: 409-10.
9. Chintapalli KN. Gastric bezoar causing intramural pneumatosis. *J Clin Gastroenterol* 1994; 18: 264.
10. Bernstein G, Jehle D, Bernaski E, et al. Failure of gastric emptying and charcoal administration in fatal sustained-release theophylline overdose: pharmacobezoar formation. *Ann Emerg Med* 1992; 21: 1388.
11. Escamilla C, Robles-Campos R, Parrilla-Paricio P. Intestinal obstruction and bezoars. *J Am Coll Surg* 1994; 179: 285-8.
12. Lee BJ, Park JJ, Chun HJ, et al. How good is cola for dissolution of gastric phytobezoars? *World J Gastroenterol* 2009; 15: 2265.
13. Bege T, Desjeux A. The Rapunzel syndrome: a hard-to-Swallow Tale. *J. Gastrointest Surg* 2011; 15: 1486-7.
14. Naik S, Gupta V, Rangole A. Rapunzel syndrome reviewed and redefined. *Dig Surg* 2007; 24: 157-61.

Received: 23.07.2012

Accepted: 4.11.2012