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## Gastric bezoar after Roux-en-Y gastric bypass for morbid obesity: A case report

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## ABSTRACT

**INTRODUCTION:** We aimed to present a patient with gastric pouch bezoar after having a bariatric surgery.**PRESENTATION OF CASE:** Sixty-three years old morbid obese female had a laparoscopic Roux-en-Y gastric bypass surgery 14 months ago. She has lost 88% of her excess body mass index; but started to suffer from nausea, abdominal distention and vomiting lately, especially for the last two months. The initial evaluation by endoscopy, computed tomography (CT) and an upper gastrointestinal contrast series overlooked the pathology in the gastric pouch and did not display any abnormality. However, a second endoscopy revealed a 5 cm in diameter phytobezoar in the gastric pouch which was later endoscopically removed. After the bezoar removal, her complaints relieved completely.**DISCUSSION:** The gastric bezoars may be confused with the other pathologies because of the dyspeptic complaints of these patients. The patients that had a bariatric surgery; are more prone to bezoar formation due to their potential eating disorders and because of the gastro-enterostomy made to a small gastric pouch after the Roux-en-Y gastric bypass surgery.**CONCLUSION:** Possibility of a bezoar formation should be kept in mind in Roux-en-Y gastric bypass patients who has nausea and vomiting complaints. Removal of the bezoar provides a dramatic improvement in the complaints of these patients.© 2016 The Authors. Published by Elsevier Ltd. on behalf of IJS Publishing Group Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

## 1. Introduction

Roux-en-Y gastric bypass (RYGB) is one of the most common surgeries performed for the morbid obesity. It fulfills both losing weight and protecting the weight loss for a long time even after the surgery. Due to the acceptable early and late complication rates it is the most preferred combined; restrictive and malabsorptive bariatric procedure worldwide. Because RYGB alters gastrointestinal tract significantly by creating a gastric pouch; leaving a gastric remnant and having two anastomosis (gastro-enterostomy and entero-enterostomy), it has a wide range of some interesting and rare complications. Here we present such a rare complication, the diagnostic efforts to diagnose it and cure this complication.

## 1.1. Presentation of case

A sixty three years old morbidly obese (body mass index  $49.5 \text{ kg/m}^2$ ) female with insulin dependent type II diabetes and hypertension was treated by laparoscopic RYGP surgery 14 months ago. Her diabetes and hypertension resolved after surgery and her body mass index decreased to  $28 \text{ kg/m}^2$  with an 88% excess body mass loss. During the last two months, she started suffering from nausea, abdominal distention and vomiting. In her last visit, we learnt that she recently admitted to a private hospital due to the increased periods of nausea and vomiting. She stayed there for three weeks and she mainly was treated with intravenous fluids. Vomiting was seen both after the solid and the liquid meals. In that hospital, an upper GI system endoscopy was performed and it was reported to be normal. When she admitted to our clinic, because of her recently performed upper GI endoscopy; we sent her to the diagnostic radiology for an abdominal computed tomography (CT) and for barium contrast series. But no pathology was reported by the radiology department, despite of a filling defect in the gastric pouch which was thought to be a food remnant. Her laboratory test results were in normal ranges. Because of the ongoing symptoms, a new upper GI endoscopy was performed by us and we found out a 5 cm in diameter bezoar in the gastric pouch (Fig. 1). By the help of a snare, the bezoar was broken into pieces

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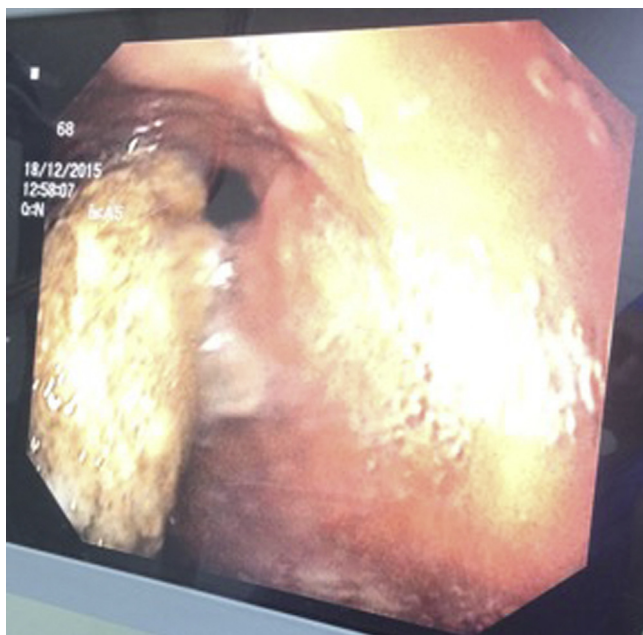


Fig. 1. Endoscopic view of the bezoar.

and it was removed endoscopically (Fig. 2). When we examined her previous diagnostic investigations retrospectively; it was seen that the bezoar was actually there all the time; in the barium contrast examination, abdominal CT and in the endoscopy performed in the private hospital (Figs. 3–5). When her history was questioned in detail in the favor of the bezoar formation after the removal; she declared that her diet was mainly on fruits (persimmon sometimes) and vegetables, but rarely meat. She daily consumes desserts and nuts in her diet as well. She used multivitamins regularly only for 12 months postoperatively. She did not have any eating disorders; such as eating lime, soil, ice or icy fluids and she did not have psychiatric problems or a history of use of any psychiatric medications. She started to eat, drink uneventfully and her complaints revealed dramatically after the endoscopic removal of the bezoar.

## 2. Discussion

Bezoar is formed by combination of the materials that cannot be digested; like cellulose, in the intestinal system lumen and further aggregation of them. They can be grouped into two by the materials that it is composed of. The trichobezoars are made up of the undigested hair; and the phytobezoars are formed by the foods that cannot be digested, such as some vegetables and/or fruits. Some fruits like orange and the persimmon have a potential of forming bezoars. Our patient also has a vegetable, fruit consumption history and also had a history of eating persimmon lately.

The most important risk factor in bezoar formation is the previous gastro-duodenal surgeries and %71–83 of the bezoar cases has a history of a gastric surgery [1,2]. Besides this, the eating habits also effect the formation of a bezoar. The modifications of the eating habits and the nutritional counseling given after a gastric surgery, is the best known prevention method against a bezoar formation [3]. The patients that had a bariatric surgery are more prone to bezoar formation; due to their potential eating disorders and due to the gastro-enterostomy performed to a small gastric pouch after the RYGB surgery. It may be predicted that the number of bezoar cases seen will increase in the literature, due to the increase in the number of bariatric surgeries being performed; because bezoar formation can be seen even years after the gastric surgery.



Fig. 2. Bezoar that was fragmented and removed by the endoscopy with the snare.

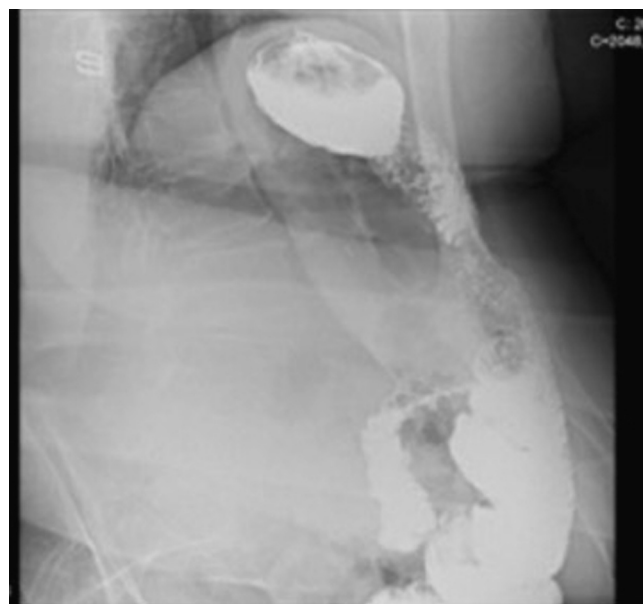


Fig. 3. Bezoar in the upper GI barium contrast study.

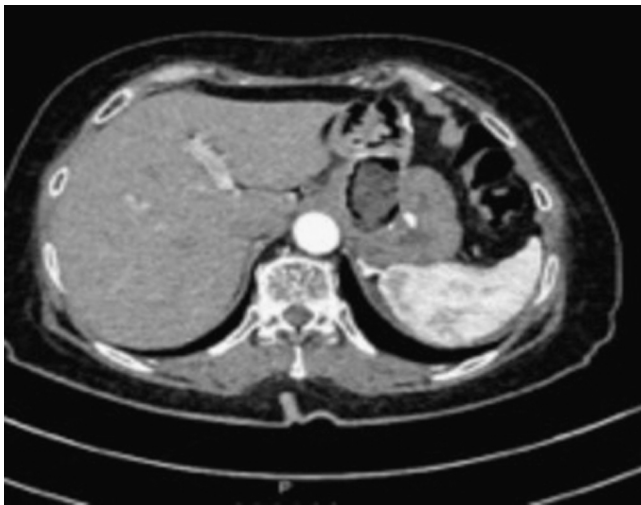


Fig. 4. Bezoar can be seen in the abdominal CT.



Fig. 5. Endoscopy image of the bezoar that was overlooked in the private hospital.

It was estimated that the bezoars may cause a dilatation of the gastric pouch that is formed after the gastric bypass surgery [3]. But if the dilatation of the gastric pouch is the cause of the bezoar formation, or the dilatation was caused by the bezoar formation; that's the subject of a debate. There is not any sufficient data in the literature about how the weights of the patients change after they were treated for the bezoar.

Bezoars may cause nausea, vomiting, early satiety according to their sizes. They may also cause a gastric outlet obstruction or a jejunum obstruction. They can be easily diagnosed when they cause an obstruction at the jejunum. The gastric bezoars may be overlooked or may be confused with the other pathologies because of the dyspeptic complaints of these patients. Just like in our case;

where the bezoar was overlooked in the CT, upper GI study and the endoscopy performed and most probably thought to be a residue of food in the diagnostic investigations. The diagnosis could only be made by the last endoscopy performed by us. When the RYGB patients admit with nausea and vomiting the first thing comes in mind is the anastomosis stricture. In one of the case reports published by Adrian M Ionescu [4]; stenosis was seen in the endoscopy of a patient presenting with nausea and vomiting. Dilatation was performed. In the follow up the bezoar was seen. Likewise in a case report of two cases published by Pinto et al. [5]; in one of the cases there was a stricture. A balloon dilatation was performed. In the follow up of this patient, in the upper GI endoscopy, a bezoar was seen and it was broken into pieces by the endoscopy. In our case just like the others, first a stricture was seen in the endoscopy and a dilatation was performed. Later in the following endoscopies a bezoar was identified. In situations where a stricture is seen in the endoscopy of RYGB patients, a suspicion of a presence of a bezoar should rise. There is a %14 recurrence risk in gastric bezoars [6]. For this reason after the treatment of the bezoar to reduce the probability of the bezoar recurrence, patients should be advised; to drink plenty of liquids, to better chew the meals and to drink coke time to time which helps in chemical degradation of the bezoars [7]. We also advised our patient; who does not drink any coke, to drink coke at least once in a month.

### 3. Conclusion

Nausea and vomiting are common complaints after RYGB surgery. These signs and symptoms are generally seen because of anastomotic stricture but could also be seen due to gastric bezoars. The gastric bezoars if not treated; could worsen these complaints and also may lead to life threatening complications like intestinal perforations. For these reasons gastric bezoar formation; even it is rarely seen, must be kept in mind in RYGB performed patients presenting with nausea and vomiting. The diagnostic studies that are performed must be evaluated in this manner, other than just focusing on the probability of an anastomotic stricture. Removal of the bezoar after the diagnosis, or breaking it down into pieces and pushing the fragments to the distal jejunum will dramatically improve the complaints.

### Conflict of interest

Authors declare that there is no conflict of interest.

### Funding

None.

### Ethical approval

This is a case report, not a research study.

### Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this Journal.

### Author contribution

Ali Tardu, Servet Karagul and Ismail Ertugrul participated in the care of the patient. Ismail Ertugrul drafted the manuscript. Serdar Kirmızı and Kerem Tolun assisted in the view of the literature and in

revising the manuscript. Cunevt Kayaalp was involved in revising it critically for important intellectual content. All authors read and approved the final manuscript.

#### Guarantor

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