

CASE REPORT

Laparoscopic Removal of a Giant Gastroduodenal Bezoar

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ABSTRACT

In today's era of laparoscopic surgery, removal of giant gastric trichobezoar laparoscopically has become a common parlance. However, removal of gastroduodenal bezoar laparoscopically *en masse* is extremely rare. We present a case of 15-year-old female with gastroduodenal bezoar, which was removed laparoscopically without any complications, stressing on the fact that adequate preoperative evaluation to know the extent of bezoar and good laparoscopic technique to prevent it from breaking intraoperatively are necessary for a good outcome.

Keywords: Bezoar, Gastroduodenal, Giant, Laparoscopic.

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INTRODUCTION

Bezoars are concretions of human or vegetable fibers that accumulate in the gastrointestinal tract. In humans, the most common type of bezoar is the trichobezoar, which is mostly made of hair. However, bezoars can also be made of vegetable or fruit fiber (phytobezoars), milk curd (lactobezoars), or any indigestible material. Trichobezoars, unlike other bezoars, are not associated with alterations in gastrointestinal motility but with underlying psychiatric disorders, and these are most commonly present in adolescents and during the second decade of life. Rapunzel syndrome is an unusual and rare form of trichobezoar extending into the small intestine.¹

In the era of minimal access surgery, laparoscopic surgeries are the rule and not the exception. All kinds

of surgeries are being reported to have lesser morbidity when performed laparoscopically. We report a case of complete laparoscopic excision of a gastroduodenal bezoar *en masse* without a duodenal incision in a young female which has not yet been reported.

CASE REPORT

A 15-year-old female came with progressively increasing complaints of pain in abdomen and vomiting since last 1½ years. The clinical symptoms worsened since last 7 days with severe abdominal pain and intractable vomiting, including difficulty to swallow the saliva. She had history of loss of appetite and gradual loss of weight during this clinical period. She had neither history of fever nor any other prodromal symptoms. She was an introvert child in the school. On further inquiry, the mother gave a history of noticing alopecia in select area of the scalp which was attributed to poor nutrition status.

On examination, the patient was vitally stable with pulse 82 beats per minute, blood pressure 110/70 mm Hg, afebrile with respiratory rate 14 cycles/minutes. On systemic examination, the patient has a large 15 × 10 cm large lump in the epigastrium, reaching up to umbilicus which was firm, nontender, and moving with respiration. Her laboratory investigations were normal except for a low hemoglobin of 9.2 gm%. Computed tomography (CT) scan was asked for which showed a large-size foreign body occupying the whole of the stomach extending up to the second part of duodenum, as shown in Figures 1A and B.

A clinical diagnosis of trichobezoar was made after confirming with the mother and the child, both later confided the history of ingesting her hair on daily basis for last 1½ years secondary to mood disorder.

OPERATIVE TECHNIQUE

Laparoscopic removal of this giant trichobezoar was done with three port technique as shown in Figure 2.

A gastrostomy was performed in the body of the stomach after mobilizing the entire greater curvature of the stomach, so as to facilitate the removal of the proximal portion of the trichobezoar in the region of fundus and body of stomach. The challenge was to remove the distal tail and duodenal part of the trichobezoar. This was facilitated by first mobilizing the hepatic flexure of the

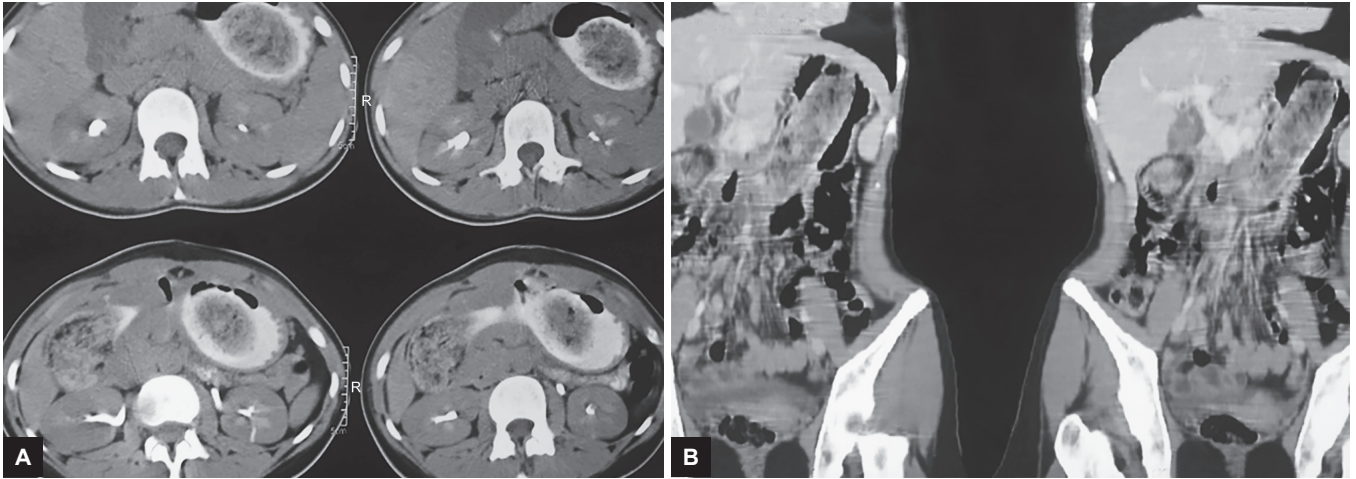
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Figs 1A and B: Computed tomography findings suggestive of foreign body in the stomach extending up to the second part of duodenum



Fig. 2: Placement of ports as seen postoperatively

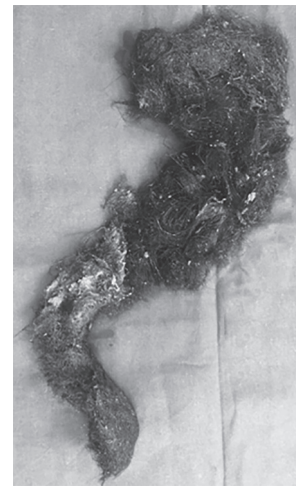


Fig. 3: Specimen as seen postlaparoscopic removal

colon to have a control on the duodenum so as to prevent the migration of the distal part.

Further, lubricating jelly was pushed between the space intervening the pyloroduodenal bezoar and the pyloric ring to aid an easy traction on the trichobezoar, and intravenous administration of injection hyoscimine helped to dilate the pyloric ring. These steps along with the gradual push and pull technique helped in extracting the distal portion of the bezoar, as shown in Figure 3.

The entire specimen was placed in a previously placed large-size retrieval bag, and it was removed from the 12 mm port without any contamination of the port. The size of the entire trichobezoar was around 20×8 cm.

The gastrostomy was closed with laparoscopic stapler and a nasogastric (NG) tube was placed for decompression.

POSTOPERATIVE COURSE

Postoperatively, the NG tube was removed after 24 hours, and the patient started on liquid diet which was further supplemented with soft diet after 2 days. Drain was

removed on postoperative day 2 without significant drain output. The patient was discharged uneventfully on the 4th postoperative day.

DISCUSSION

Rapunzel syndrome, as seen in this case, occurs in young females suffering from psychiatric disorders.¹⁻³ Large gastric bezoars may result in numerous complications – most commonly intestinal obstruction, failure to thrive, and iron deficiency anemia.⁴

Although nonsurgical interventions exist, including NG lavage or suction, prokinetic agents, enzymatic fragmentation, and endoscopic retrieval, they are often unsuccessful in treating large trichobezoars that cause obstructive symptoms, and therefore, surgery is required.⁵ The standard surgical approach consists of open gastrotomy via an upper abdominal laparotomy. This procedure leaves patients with a large abdominal incision and increased propensity to develop wound complications.

The first successful laparoscopic removal of a gastric bezoar was reported in 1998 by Nirasawa et al.⁴

Since then, several successful laparoscopic cases have been reported, primarily in adults and adolescents.⁶⁻⁸ Though mainly limited to case reports, comparison of laparoscopic and open surgical treatment of bezoars causing small bowel obstruction found fewer postoperative complications and reduced hospital stay in those patients treated laparoscopically.⁹ One reason for the decreased complication rate may be related to incision size. Incision size affects recovery time, cosmesis, and the potential for wound complications. Case reports of laparoscopic gastric trichobezoar removal describe incision sizes ranging from mini-laparotomy incisions extending from a suprapubic port site⁴ to 4 cm extension of 10 mm abdominal trocar sites.¹⁰

It is important to note in our case that it is the first case reporting a complete laparoscopic removal of a giant gastroduodenal bezoar en masse through stomach without the need for extension or a separate incision on the duodenum or conversion to laparotomy. Laparoscopic removal apart from requiring skill also requires the knowledge. Moreover, it is important to stress on the fact that extra traction on the distal part of the bezoar can break the tail part of the trichobezoar in the pyloric region, which can add to performing a duodenotomy or open exploration which could be completely avoided as seen in this patient.

In conclusion, laparoscopic removal of giant gastroduodenal bezoars, if done appropriately, can lead to short hospital stay and less morbidity.

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