Gastric Trichobezoars in Children: Surgical Overview

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ABSTRACT

**Background:** Development of trichobezoars in children is primarily a psychiatric issue more than a pediatric surgical ailment. A definite history of trichotillomania and trichophagia may or may not be elicited. Surgical removal is required in patients presenting with huge bezoars. Psychiatric follow-up is of utmost importance to avoid recurrence. **Materials and Methods:** Records of children who were diagnosed and managed for the presence of gastric trichobezoars were retrospectively reviewed. **Results:** Five children presented over past 15 years (2000–2015) with varied presentations ranging from asymptomatic abdominal masses to features of bowel obstruction. There were three adolescent females (aged 10, 12, and 13 years) and two males (aged 2 and 6 years). All had a hugely distended stomach completely filled with the bezoar. After gastrotomy and removal of the bezoar, gastrostomy drainage was provided in three of these five patients whereas the remaining two had nasogastric tube in place. All three with gastrostomy had effective gastric decompression and oral feeds could be established early. On the other hand, remaining two in which gastrostomy was not inserted had prolonged adynamicity of the stomach and delayed establishment of oral feeds. **Conclusion:** A procrastinated history results in a hugely distended stomach which remains adynamic for a long period of time after removal of the bezoar, and decompression by gastrostomy tube drainage in the postoperative period is a feasible option.

**Key words:** Child, gastrostomy, psychiatric illness, trichobezoar, trichotillomania

MATERIALS AND METHODS

Case records of children aged <14 years diagnosed to have gastric trichobezoars were retrospectively reviewed. Their presentation, management, and outcomes were recorded and subsequently analyzed.

RESULTS

A total of five cases presented over the past 15 years (January 2000–January 2015). The initial four case details...
are tabulated [Table 1] and the fifth case discussed in detail in the following text.

Case 5

A 12-year-old girl presented with complaint of vomiting of the ingested food for the past 1 year. There was emesis of the ingested food particles 15 min after every meal. Drooling of saliva was not present. Associated dull aching abdominal pain was present. The mother had also noticed progressively increasing abdominal distension for the past 6 months.

The patient was a pale, thin, apprehensive female child. On per abdominal examination, a 20 cm × 20 cm firm, nontender, well-defined, mobile lump was present in the epigastric, left hypochondriac, and periumbilical region. Rest of the abdomen was soft and bowel sounds were present.

Nasogastric tube placement was attempted but could not be negotiated across the gastroesophageal junction into the stomach. With the suspicion of a malignant etiology, a contrast-enhanced computed tomography (CT) scan of the abdomen was performed which revealed a heterogeneous mottled mass occupying the whole of the stomach with concentric rings of soft tissue density material and gas surrounded by oral contrast [Figure 1]. With the differential diagnosis of a trichobezoar on the CT scan, the history was reviewed. On repeat questioning, the mother revealed that she had noticed the child eating fibers from the gunny sack, a couple of years ago. On interrogation, the child admitted that she liked eating those fibers and also plucking her own hair and eating them.

On laparotomy and subsequent gastroscopy, the trichobezoar was noted [Figure 2]. Small tail-like extension was seen for approximately 1 cm into the first part of the duodenum across the pylorus [Figure 3]. On delivering out the gastric bezoar, a 1 cm × 1 cm perforation of the posterior wall of the stomach was incidentally noted. This was probably old as was evident from its healed fibrotic margins and did not manifest as an acute emergency due to complete occlusion by the bezoar. The margins were freshened and the perforation was repaired with an omental patch. A nasoduodenal tube was placed for postoperative feeding till gastric atony resolved and a gastrostomy tube was placed for drainage of the stomach.

Postoperatively nasoduodenal feeds were started after return of bowel activity after 48 h. On the 5th postoperative day, nasoduodenal tube was removed, gastrostomy clamped, and child was started on oral feeding. She was discharged in good health. Gastrostomy tube was removed after 2 weeks. Psychiatry consultation was sought, and with a diagnosis of trichotillomania and trichophagia, the child was started on selective serotonin reuptake inhibitor (SSRI) fluoxetine in the postoperative period. The child and parents were counseled thoroughly to avoid any recurrence of such behavior.

DISCUSSION

Trichobezoar formation is a rare clinical condition, which is a manifestation of a psychiatric illness primarily. Most of the times, adolescent females with trichotillomania

| Table 1: Case descriptions |
|-----------------------------|
| Age (years) | Sex | Presentation | Investigations | Surgical details | Postoperative course |
|-----------------------------|
| 10 | Female | Epigastric lump × 1 month; no features of obstruction | Barium swallow: Honeycomb pattern in stomach with barium interspersed in interstices | Hugely distended stomach; gastric trichobezoar occupying entire lumen; removed through gastrostomy and gastrostomy tube inserted | Allowed orals on the 5th postoperative day once gastrostomy output decreased; followed up with psychiatrist |
| 6 | Male | Vomiting and pain abdomen × 2 weeks; history of trichotillomania; P/A: Epigastric and left hypochondrium lump palpable | CECT abdomen: Heterogeneous mass in stomach | Gastric trichobezoar extending into first part of duodenum; removed through gastrostomy and gastrostomy tube inserted | Allowed orals on the 5th postoperative day once gastrostomy output decreased; followed up with psychiatrist |
| 2 | Male | Recurrent vomiting and progressive abdominal distension × 2 weeks; P/A: Epigastric fullness | Barium swallow: Honeycomb pattern in stomach | Gastric trichobezoar; Removed through gastrostomy; No gastrostomy tube inserted | High preferred aspirates till 8th postoperative day - allowed orals on day 9 |
| 13 | Female | Epigastric lump × 3 months; Definite history of trichotillomania | Not investigated as history definite | Gastric trichobezoar removed through gastrostomy; gastrostomy not done | Allowed orals on the 10th postoperative day because of high nasogastric aspirates; psychiatric evaluation done and selective serotonin reuptake inhibitors started |

CECT – Contrast-enhanced computed tomography; P/A: Per-abdominal examination
forms in the stomach owing to the slippery nature of the hair strands and their deposition in gastric folds, and they gradually get enmeshed over time. This large quantity of hair gets matted together and assumes the shape of the stomach.\textsuperscript{[12,13]} Most commonly presenting as an abdominal mass with features of bowel obstruction, the clinicians generally suspect malignant etiology until disproved on imaging. Rarely does one keep it as a differential diagnosis on clinical assessment alone because the history of trichophagia is seldom obtained unless specifically interrogated.

Cases of gastric trichobezoars have been reported in literature as case reports and series after its first description by Vaughan \textit{et al.} in 1968.\textsuperscript{[5]} When not recognized, the trichobezoar continues to grow in size and weight due to the continued ingestion of hair. This increases the risk of severe complications, such as gastric mucosal erosion, ulceration, and even perforation of the stomach or the small intestine. Its presentation as Rapunzel syndrome has also been frequently reported. The cases described in the present report represent almost an entire spectrum of the disease with varied presentations ranging from a definite history of trichotillomania with an abdominal lump to features of gastric outlet obstruction without any suspected diagnosis. A rare presentation in the fifth case was complete occlusion of the gastro-oesophageal junction explaining the dysphagia and the inability to pass the nasogastric tube. Furthermore, noted was an asymptomatic perforation in the posterior wall of the stomach which had been walled off by the huge bezoar and did not cause peritonitis. This is a rare presentation as opposed to the catastrophic course, a gastric perforation is deemed to have.

Treatment options for gastric trichobezoars range from endoscopic removal, dissolution, and mechanical fragmentation with a hydrojet for smaller masses to surgical removal for bigger masses causing discomfort and extending into the small bowel. A liberal gastrotomy with removal of the bezoar generally suffices, but on occasion, multiple enterotomies may be required if the bezoar is adherent to the gut wall. A well-learned lesson from our experience was placement of a gastrostomy tube on drainage for 7–10 days for the stomach to revert back to its size and peristaltic activity after its prolonged distension by the trichobezoar.

Recurrences after surgery have been reported multiple times, mostly because of inadequate psychiatric management.\textsuperscript{[14,15]} As for any disease, the primary or underlying etiology (i.e., trichotillomania) needs to be tackled for ultimate cure and to avoid recurrence. SSRIs and psychiatric counseling are the mainstays of treatment and regular follow-up is essential.
CONCLUSION

Gastric trichobezoars are rare in children. They can extend anywhere from the esophagus down till the ileocecal junction. Presentation can vary from asymptomatic masses to catastrophic perforations. A procrastinated history results in a hugely distended stomach which remains adynamic for a period of time after removal of the bezoar, and decompression by gastrostomy tube drainage in the postoperative period is a feasible option.

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Conflicts of interest

There are no conflicts of interest.

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