

# A Rare Cause of Vomiting in a Neurologically Impaired Child: Phytobezoar

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**Abstract** Bezoars are concretions formed in the stomach or the intestine of various foreign or intrinsic substances. They may be asymptomatic or present with non-specific abdominal symptoms. Neurologically impaired children are at increased risk of gastric bezoars due to altered gastrointestinal motility and ineffective chewing. Herein, we report a neurologically impaired child presented with non-bilious vomiting and weight lost for 2 months; and found a huge phytobezoar associated with two gastric polyps in endoscopic examination.

**Key words** Gastric polyps; Neurologically impaired child; Phytobezoar

## Introduction

Bezoars are concretions formed in the stomach or the intestine of various foreign or intrinsic substances. The most common types are trichobezoars, phytobezoars and lactobezoars.<sup>1</sup> Phytobezoars are concretion of poorly digested fruit and vegetable fibers, or indigestible materials that are found in the alimentary tract of patients with history

of surgery or altered gastrointestinal motility or rarely in individuals with normal gastrointestinal anatomy.<sup>1,2</sup> They may be asymptomatic or present with non-specific abdominal symptoms such as bloating, nausea or vomiting when located in the stomach, dysphagia, odynophagia or retrosternal pain when located in the esophagus. Sometimes, they may present with sign and symptoms of partial or complete intestinal obstruction.

Vomiting is common problem in neurologically impaired children and commonly associated with gastroesophageal reflux (40-60%), oromotor dysfunction (25-30%) or reflux-related esophageal stenosis (3-5%) or urinary tract infection.<sup>3</sup> Neurologically impaired children are at increased risk of gastric bezoars due to altered gastrointestinal motility and ineffective chewing.<sup>1,4</sup> Herein, we report a neurologically impaired child presented with non-bilious vomiting and weight lost for 2 months; and found a huge phytobezoar in endoscopic examination. Additionally, she had two gastric polyps.

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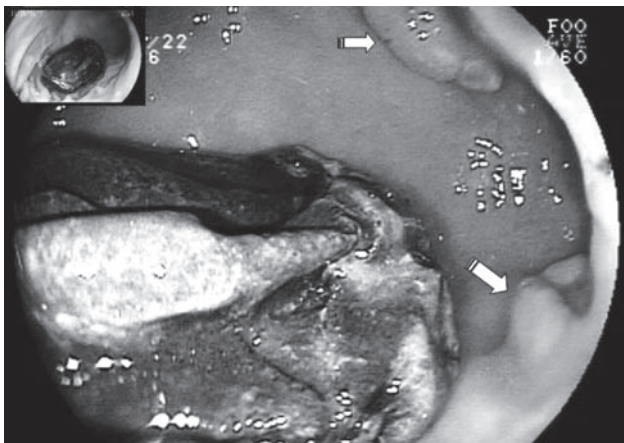
## Case Report

A 16-year-old old girl was admitted to our unit for non-bilious vomiting for 2 months. It was common especially after feeding (up to 10 times/day) and including undigested feeding material. She was followed by paediatric neurology

unit for microcephaly, severe mental motor retardation and epilepsy (generalised tonic-clonic) until birth and used antiepileptic drugs. She had constipation and feeding problems for the last 1 year and hospitalised for pneumonia two times in the last 6 months. She had no any emotional or behavioural problems that need any psychiatric involvement. She is only fed by enteral nutrition (Fortini Multi Fibre® 3 times/day) and denied solid foods. On physical examination, she had malnutrition (weight and height were below 3p, Z scores were -3.1 SD and -4.1 SD; respectively), microcephaly, short hair and contractures in the lower extremities. Other part of the physical examination including cardiac and lung exams were normal. Laboratory examination revealed only mild microcytic anaemia. Liver function tests, electrolytes, renal function tests and urine analysis were all normal.

An upper gastrointestinal endoscopy was performed for the suspected gastroesophageal reflux, esophagitis and/or stenosis. Endoscopy revealed a huge 5 x 4 cm foreign mass in metallic appearance and two polypoid masses in the peri-pyloric area of the antrum (Figure 1). The mass was extracted successfully with a fold angular basket by its short edge. It was composed of sclerous cloth pieces. Histological examination of the biopsy obtained from the polyps in the pre-pyloric region of the stomach revealed the polyps to be inflammatory in nature.

After endoscopy, the parent gave a history of putting fabric cloth between her teeth while she was compressing in order to prevent to bite her tongue and lip. Additionally, the mother said that she had occasionally seen the child chewing a piece of her diapers and eating it. The parents were informed about the cause of gastric bezoar, and the patient followed in outpatient clinic. On the follow-up; the



**Figure 1** Endoscopic appearance of the phytobezoar; white arrows show polyps in the antral region.

symptoms of the patient was improved without any recurrence and begin to weight gain.

## Discussion

The word bezoar is a word derived from the Arabic "bazahr" or "badzehr" which means an antidote or counter-poison.<sup>5</sup> The origin of most bezoars is thought to be due to delayed gastric emptying as a result of vagotomy, antral resection, gastroparesis, gastric outlet obstruction, or altered gastrointestinal motility.<sup>1</sup> However, in a Japanese study, no evidence of delayed gastric emptying was observed.<sup>6</sup> Phytobezoar formation has also been reported to form in an adolescent with achalasia and hypertrophic pyloric stenosis and in one patient each having intestinal pseudo-obstruction and scleroderma, and in one patient with absent teeth.<sup>7-9</sup> A bezoar composed of digested hair (trichobezoar) is called as Rapunzel syndrome and is more common in the paediatric population (primarily in girls). It is more common in adult patients with psychiatric disorders, trichotillomania and trichophagia.<sup>10</sup> Ingestion of large amounts of indigestible solids may also precipitate bezoar formation. It is generally combined with gastrointestinal stasis.<sup>11</sup> In our patient, altered gastrointestinal motility in addition to ingestion of indigestible cotton pieces leads the phytobezoar ("cotton" bezoar) formation.

Reported complications of bezoars include chronic vomiting, ulcers, perforation, gastric outlet obstruction, and intestinal obstruction. These problems presumably develop on a mechanical basis.<sup>1</sup> Due to high rate of morbidity and mortality of these complications, early diagnosis and treatment of the bezoars are essential. Surgery is frequently resorted to for the removal of bezoars, especially the larger ones. However, laparoscopic removal and endoscopic extraction of bezoars have also been successful. Use of lithotripter, laser ignited mini-explosives, mono-polar diathermy knife and electrohydraulic lithotripsy have been successful in removing the bezoars of varying aetiologies.<sup>12</sup> Dissolution with enzymatic therapy consisting of proteolytic or cellulose enzymes, gastric lavage or dietary modifications has been used especially in phytobezoars secondary to non-digestible foods (fruits and vegetables) and lactobezoars.<sup>1</sup> In our patient, we removed the bezoar by endoscopic extraction successfully, but it was difficult to pass the upper esophagus due to microcephaly and micrognathia. Additionally, the metallic appearance of the bezoar concerns us for esophageal perforation, because of this we extracted by its short edge.

The inflammatory gastric polyps, in the prepyloric region of the stomach, probably occurred because of chronic irritation of the gastric mucosa by the bezoar. Additionally, these polyps may have caused further stasis in the stomach by deforming the pyloric opening and impeding the flow of the gastric contents. Bates et al<sup>13</sup> reported the patients with gastric bezoars and gastric polyposis, and they claimed that polyposis results from chronic abrasion of the gastric mucosa leading to a secondary inflammatory and a hyperplastic response with polyp formation. Additionally, they suggest that inflammatory polyposis may be associated with gastric ulcers, iron deficiency anaemia and hypoalbuminaemia.

In conclusion, vomiting is a common problem in neurologically impaired children and mainly associated with oromotor dysfunction and gastroesophageal reflux. Bezoar formation must keep in mind in these children in the early period in order to prevent the complications.

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