Case 3317

Eurorad

Gastric and duodenal trichobezoar

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Section: Abdominal imaging
Imaging Technique: Ultrasound
Imaging Technique: CT
Case Type: Clinical Cases
Authors: Mornjakovic A, Dizdarevic S
Patient: 12 years, female

Clinical History:

A patient presented with abdominal pain and non-bilious vomiting in the past two days.
Imaging Findings:

A patient was admitted to the Department of Pediatric Surgery complaining of abdominal pain and non-bilious vomiting in the past two days. On examination, it was found that there was a generalised tenderness in the abdomen and tympanitic resonance on percussion. There was no mass which was found to be palpable. Laboratory findings were normal except for a low blood value for ferrum. On abdominal US, the stomach showed quite a long and two broad bands of increased echogenicity with shadowing being present posteriorly, persisting in close contact and unchanged in spite of the plane of imaging (Fig. 1). On an upper GI examination, the stomach was seen to be markedly dilated with hardly noticed peristaltic movements. The lumen was noted to be full of unusual, different filling defects and entrapped air, demonstrating a large intraluminal mass extending through the stomach into the proximal part of the duodenum. This pattern was unvaried in different body positions (Fig. 2). Two days after, the axial CT section without administration of oral or intravenous contrast demonstrated the presence of an intragastric mass consisting of two large concentric rings with entrapped barium from upper GI series previously, debris and air. The rings were well connected by a broad fibrous band posteriorly. Similar pieces were found in the duodenum (Fig. 3). The trichobezoar was removed surgically from the stomach.
Discussion:

In the present case, ultrasonography, upper GI examination and CT showed the typical appearance of a trichobezoar, whereas its clinical feature was non-specific. This rare cause of gastrointestinal obstruction should not be forgotten in the management of a child, even in patients without a history of a previous psychological disturbance. In this case, after her parents had been divorced, the girl began to swallow her hair and fibers from her woolen clothes and nobody noticed her problem. However, over a period of time, the child's matted hair and trapped food particles took the shape of the stomach, leading to the development of an intraluminal mass. Young girls are the most commonly affected of all people. Phytobezoars develop most frequently following the ingestion of high-fiber vegetables and fruits. A similar appearance can also be noticed in infants as a result of curdled milk being present. The diagnosis is usually made based on plain radiographs and a barium meal test. Bezoars of all types produce filling defects in the stomach on performing a GI series. The usefulness of computed tomography has been reported in the preoperative period. The CT scan showed an ovoid intraluminal mass, and a mottled appearance was noted at the transition zone between the dilated and collapsed parts of the gastrointestinal tract. Recently, a non-invasive and non-irradiating protocol using sonography and MR imaging have been proposed in the pediatric population. Ultrasonographic diagnosis of trichobezoars may be relatively specific. A broad band of high-amplitude echoes can be seen superficially, with a complete sonic shadowing behind. Alternatively, true neoplasms of the stomach which are relatively uncommon in childhood may mimic bezoars. Polyps have been described in several of the polyposis

syndromes, including Peutz–Jegher's syndrome, Gardner's syndrome and juvenile polyps. An inflammatory fibroid polyp is a benign mass of unclear etiology and this has been reported to occur in the stomach, but may occur throughout the whole digestive tract. These polyps are able to cause abdominal pain, gastrointestinal bleeding, intestinal obstruction or intussusception. The most common malignancy involving the stomach in children is the lymphoma, usually non-Hodgkin's lymphoma. These lesions present with markedly enlarged gastric folds. A CT scan typically shows a marked thickening of the gastric wall. Patients with portal hypertension may develop gastric and duodenal varices in addition to those in the esophagus. On upper GI series, gastric varices produce serpentine filling defects not only along the lesser curvature and in the fundus, but also in the antrum or the proximal duodenum.
Differential Diagnosis List: Gastric and duodenal trichobezoar.

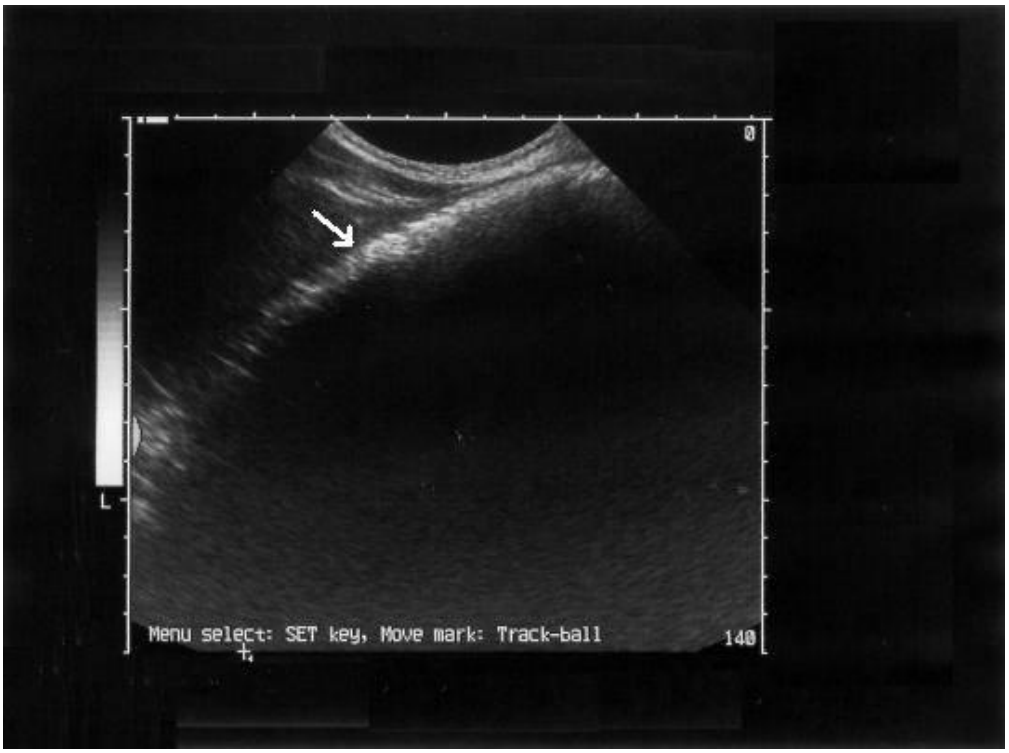
Final Diagnosis: Gastric and duodenal trichobezoar.

References:

Newman B, Girdany BR. Gastric trichobezoars–sonographic and computed tomographic appearance. Pediatr Radiol. 1990; 20(7):526-7. (PMID: 2216587)
Ben Cheikh A, Gorincour G, Dugougeat-Pilleul F, et al. Gastric trichobezoar in a adolescent presenting with anemia:ultrasound and MRI findings. J Radiol. 2004 Apr; 85(4):411-3. (PMID: 15213652)
Zissin R, Osadchy A, Gulman V, et al. CT findings in patients with small bowel obstruction due to phytobezoar. Emerg Radiol. 2004 Feb; 10(4):197-200. (PMID: 15290490)
Chongsrisawat V, Yimyeam P, Wisedopas N, et al. Unusual manifestations of gastric inflammatory fibroid polyp in a child. World J Gastroenterol. 2004 Feb; 10(3):460-2. (PMID: 14760782)

Figure 1

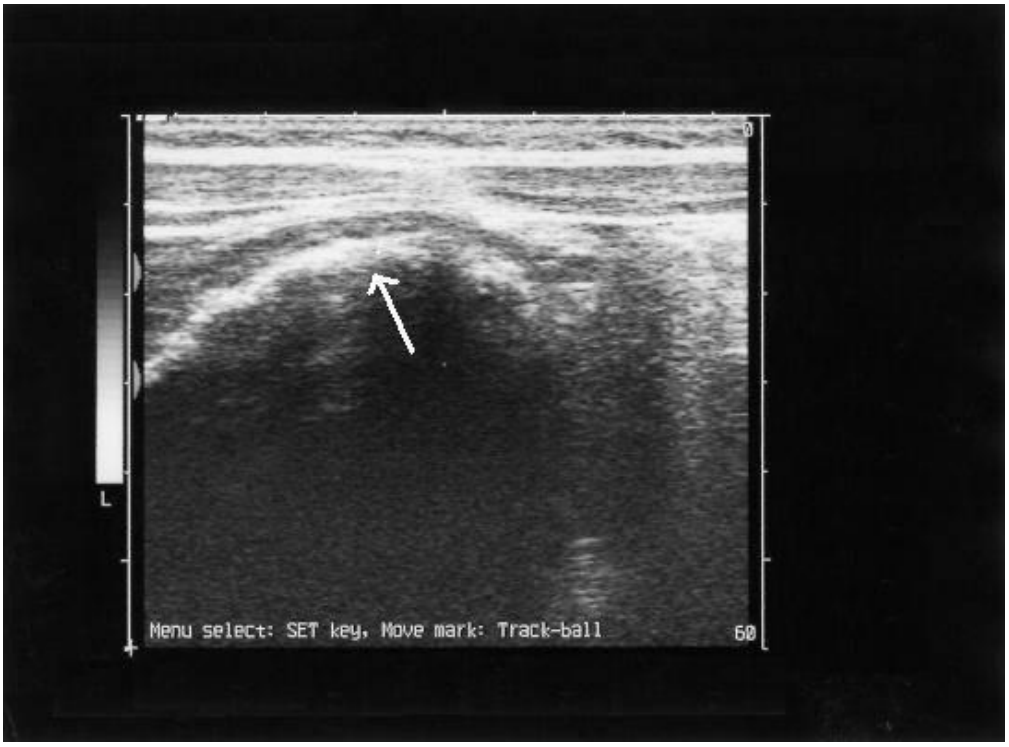
a



Description: A longitudinal sonogram of the epigastrium showing the hyperechoic long band with acoustic shadowing posteriorly (arrow) corresponding to the bezoar in the upper part of the stomach.

Origin:

b



Description: A transverse sonogram obtained with a linear probe in the region of the antrum showing the second band (arrow) corresponding to the bezoar in the antrum. **Origin:**

Figure 2

a

Description: A mono-contrast upper gastrointestinal radiograph obtained in the prone position showing markedly distended stomach with a large endoluminal mass consisting of numerous filling defects and entrapped air. **Origin:**

b

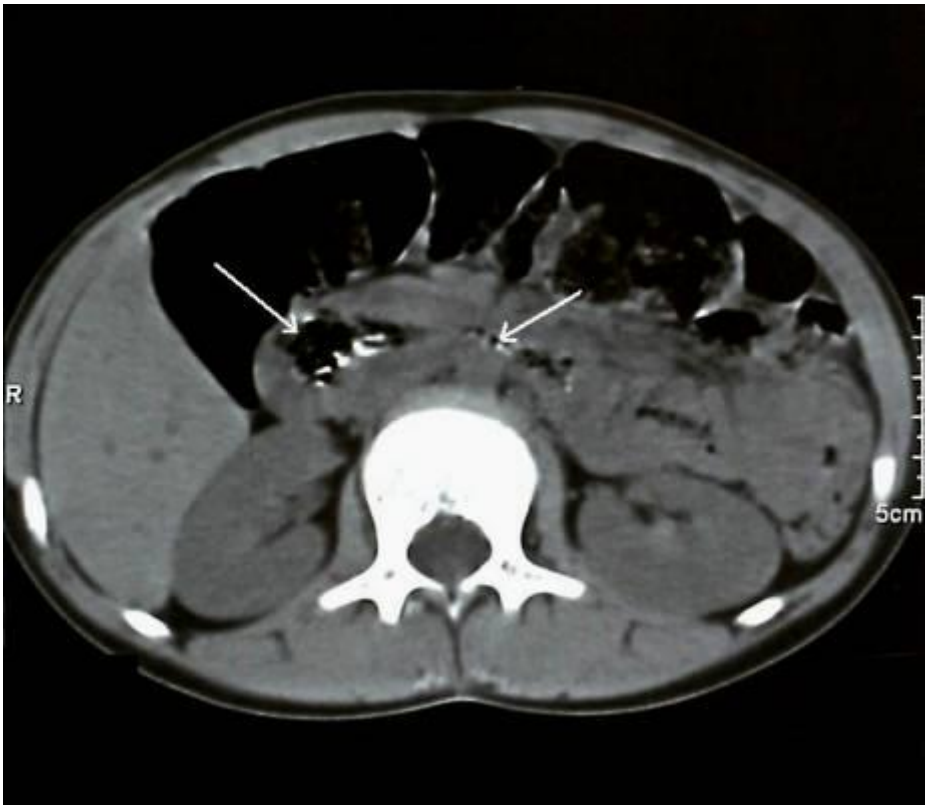
Description: A mono-contrast upper gastrointestinal radiograph obtained in the standing position showing almost the same pattern of the gastric trichobezoar. There is a little more air in the fundus.
Origin:

Figure 3

a

Description: An axial CT image through the stomach demonstrating an intragastric mass consisting of two concentric rings (long arrows) with matted hair, air and barium (upper GI series done two days before). There is a tight hair band seen between the rings (short arrow). **Origin:**

b



Description: An axial CT image through the duodenum showing the same intraluminal pattern (arrows).
Origin: