



Case Report

A Large Gastric Trichobezoar in a Teenage Girl : A Case Report

M Hafizur Rahman¹, M Saiful Islam², A S M Zakir Hossain³, M Anisur Rahman⁴,
M Sharif Chowdhury⁴, A H M Tohurul Islam⁵, M Khalilur Rahman⁶

Abstract

Bezoars are retained concretions of foreign materials or indigestible organic substances in the digestive tract resulting of their ingestion and accumulation, involving mainly the gastric lumen. The incidence of gastric bezoars is very low and they are of varied composition. We report a case of gastric trichobezoar in a 13- year old young girl who presented with intermittent pain in her epigastrium with dyspepsia. Her parents gave the history of intermittent ingestion of hairs since 06 years of age. The patient was relatively healthy with no history of psychiatric disorder or gastric surgery. She was investigated with ultrasound of abdomen, barium meal study and computed tomography followed by endoscopy which revealed gastric trichobezoar. The patient underwent gastrotomy which revealed a large trichobezoar confirming our radiological diagnosis. The mode of presentation and appearance on various imaging modalities like ultrasound, barium meal and computed tomography are discussed.

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Introduction

The word bezoar is derived from the Arabic “badzehr” or from the Persian “padzahr”, and both meaning counterpoison or antidote¹. The first description of a post-mortem human bezoar was given by Swain in 1854 .Hindus used bezoars in the twelfth century BC for rejuvenating the old, neutralizing snake venom and other poisons, treating vertigo, epilepsy, melancholia and even plague. Today, the term bezoar refers to swallowed conglomerate masses of foreign materials or indigestible organic substance are found in the gastrointestinal tract of man and other animals. Most bezoars reside in the stomach, but they may encountered elsewhere.

Bezoars are classified according to their composition, which may include phytobezoars (fruit and vegetable fibers), trichobezoars (hair), pharmacobezoars (ingested medication), lactobezoars (undigested milk curd) and lithobezoars (stones)². Out of all these phytobezoars are more common while trichobezoar are rare³. There are several pathological condition in which gastric bezoars occur, since they are not common in healthy people, these includes previous gastric surgery, systemic pathology that causes delayed gastric emptying such as diabetes mellitus, mixed connective tissue disorders and hypothyroidism. Phytobezoars are generally found in patient with gastric surgery. Lactobezoars are exclusively found in infant. Eighty percent

¹ Associate Professor & Head, Department of Radiology and Imaging, Rajshahi Medical College, Rajshahi.

² Associate Professor, Department of Radiology and Imaging, Rajshahi Medical College, Rajshahi.

³ Assistant Professor, Department of Radiology and Imaging, NIDCH, Dhaka.

⁴ Assistant Professor, Department of Radiology & Imaging, Rajshahi Medical College, Rajshahi.

⁵ Senior Consultant, Department of Radiology & Imaging, Rajshahi Medical College, Rajshahi.

⁶ Associate Professor, Department of Medicine, Rajshahi Medical College, Rajshahi.

trichobezoar occur in girls before the age of 30 years, the peak incidence is found in second decade. Trichobezoars are formed by swallowed hair and occur often in patient with some psychiatric ailment. Gastric bezoars are usually asymptomatic, although nonspecific symptoms may appear. They may present with upper abdominal pain, nausea, vomiting, anorexia, weight loss, feeling of gastric fullness, epigastric lump, sign of gastrointestinal obstruction even perforation⁴.

The present report describes the case of a young girl, 13-year old present with an epigastric pain and dyspepsia who was submitted to clinical and imaging investigations and subsequent surgical management. Here we present a case of this condition and the usefulness of ultrasound, barium meal and computed tomography in proving this condition.

Case report

A young girl 13-year old presented to her general practitioner with intermittent epigastric pain in association with dyspeptic symptoms. Her parents gave the history of intermittent ingestion of hairs since 06 years of age. She had no history of psychological and psychiatric disorder or history of gastric surgery. The patient was referred to the Department of Radiology and Imaging for ultrasonographic examination of abdomen. During ultrasonography on physical examination a large palpable non tender, non reducible and non compressible lump was found in her epigastric region. Ultrasound of her abdomen revealed a mass showing broad band high amplitude echoes along the anterior wall with sharp posterior acoustic shadowing which was diagnosed as a suspected case of gastric bezoar (Fig-1). She was hence to barium meal study of stomach which showed a heterogeneous aerated filling defect within the contrast filled lumen (Fig-2). In view of this finding she had a contrast enhanced CT scan of the abdomen with oral contrast which demonstrates free floating well defined hypodense heterogeneous aerated mass with concentric peripheral contrast enhancement in the lumen of the distended stomach and on this basis of characteristic image gastric trichobezoar was diagnosed (Fig-3). Later endoscopic examination of the stomach was performed which revealed a large hair ball within the stomach but failed to remove it as it was too large.

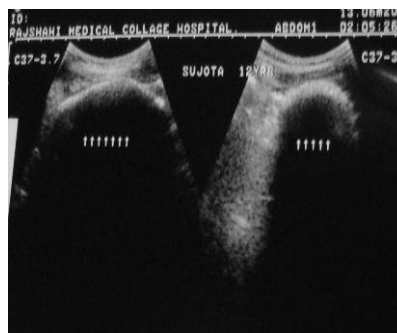


Fig-1: Ultrasonographic image of gastric trichobezoar showing arc of high amplitude echo casting sharp posterior acoustic shadow



Fig-2: Ba meal X-Ray of gastric bezoar revealing aerated filling defect within the contrast filled lumen

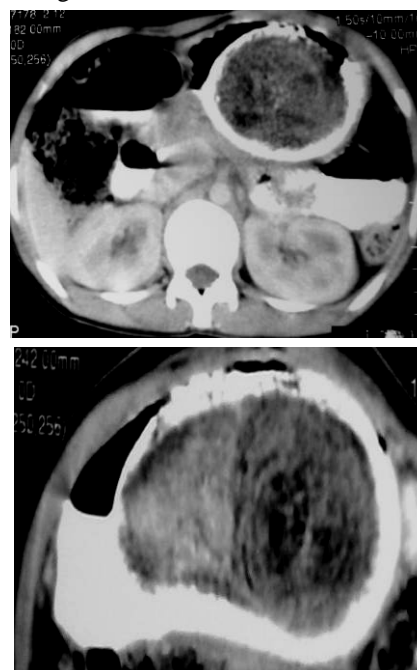


Fig-3: Contrast enhanced CT images of gastric trichobezoar showing hypodense heterogeneous aerated mass within the gastric lumen outlined by orally administered contrast medium.

Discussion

Bezoars are the foreign material that accumulates in the gastrointestinal tract because of large particle size, indigestibility, gastric outlet obstruction or gastric stasis. Phytobezoars are the most common and consist of undigested cellulose, lignin, hemi-cellulose and fruit tannins derived from fruits and vegetables matter. They are most common in patient with previous history of gastric operation and are detected in up to 20% of patient who have undergone antrectomy⁵.

Trichobezoars are less common than phytobezoars and most commonly found either in childhood or among teenage girl with psychological disorder such as trichotillomania or trichophagia⁶. In the classic review by Debakey and Oschner⁷ 80% of trichobezoars were found in patients younger than 30 years of age. Our patient had a history of ingestion of hair in childhood but certainly had no psychological, emotional or behavioral problems either as a child or as a teenager. Among the mechanism of trichobezoar formation Debakey and Oschner⁷ proposed that trichobezoars developed from the ingestion of hair, carpet and clothing gets trapped within the gastric mucosal folds and become enmeshed. Delayed gastric emptying in post vagotomy patient may contribute to the formation of bezoars. Gastric acid denatures hair protein and blackens the bezoars regardless of intrinsic color⁸. Rarely the trichobezoar may extend into the small intestine as a tail lead to Rapunzel syndrome or may get broken in the intestine to cause intestinal obstruction, ulceration, bleeding and perforation⁴.

The common complaints include epigastric pain, nausea, and bloating, early satiety and weight loss. In the absence of gastric outlet obstruction almost all patient have relatively benign presentation as was the case in our patient. On clinical examination of our patient a large epigastric lump was found. Imaging tests are valuable for the diagnosis of bezoars. A plain abdominal radiograph has low specificity because it shows only a heterogeneous epigastric mass. The contrast examination of upper GIT indicated for the differentiation of abdominal masses is more

valuable and specific, shows an intraluminal mobile heterogeneous and aerated gastric mass.

Both ultrasonography and CT are reliable methods of diagnosing gastrointestinal bezoars. Ultrasonography is the primary modality for the evaluation of an upper abdominal mass demonstrates a superficially located broad band of high amplitude echoes along the anterior wall of the mass with sharp, clean posterior acoustic shadowing. The sharp, clean margins of acoustic shadow rule out the possibility of gas and food which produce dirty shadowing^{9, 10, 11}. CT is the more accurate imaging test and acquires quite a characteristic bezoars image's demonstrates bezoars showing heterogeneous aerated mass with concentric peripheral contrast enhancement within the stomach especially in the patient of orally administered contrast medium⁹. The definitive diagnosis of trichobezoars is also established by endoscopic examination of upper GIT.

Conclusion

Gastric trichobezoar is a very rare disease and most common in children and teenage girls and usually result from an underlying behavioral disorder. It is very difficult to explain the cause of trichobezoars in such patients without a known psychiatric history but we believe behavioral disturbances are linked with this. The diagnosis of a gastric trichobezoar in a healthy patient requires a high index of suspicion, as it can present with non specific symptomatology. The characteristic appearance of trichobezoars on ultrasound, GI barium studies and computed tomography helps us in diagnosing the same. Ultrasonography is the primary imaging modality that can produce image in which a bezoar can be confused with other conditions but CT scan vividly demonstrates the trichobezoar as an intraluminal mass containing a mottled air pattern within the stomach especially in the presence of orally administered contrast medium and CT is more effective in revealing concomitant gastric and intestinal bezoars. Early detection and removal of trichobezoars is mandatory because of the risk of potentially life threatening complication such as intestinal obstruction, gastric bleeding and perforation.

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All correspondence to
M Hafizur Rahman
Associate Professor & Head
Department of Radiology and Imaging
Rajshahi Medical College, Rajshahi, Bangladesh