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The Trichobezoar Enigma: Untangling The Intricacies Of Rapunzel Syndrome

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Abstract

Rapunzel Syndrome is a rare manifestation of trichobezoar, characterized by the presence of hair strands extending beyond the stomach and into the duodenum. Trichobezoars typically develop in individuals with a history of trichotillomania, a compulsive behavioral disorder involving hair-pulling, combined with trichophagia, the ingestion of hair. While trichobezoars predominantly form within the stomach, their occurrence in the jejunum is infrequent. This condition is more commonly observed in adolescent females.

The formation of bezoars within the gastrointestinal tract is typically attributed to anatomical changes. However, in cases where no such anatomical abnormalities are present, psychiatric disorders like trichotillomania can lead to the development of trichobezoars in the stomach. In this case, a 14-year-old patient is diagnosed with trichotillomania. The patient was admitted to the hospital due to complaints of nausea, vomiting, abdominal pain, constipation, and weight loss. Upon examination, a substantial trichobezoar was discovered, completely filling the stomach, duodenum, and extending into the mid-portion of the jejunum, resulting in subacute obstruction.

Keywords

Trichobezoar, Rapunzel Syndrome, Trichotilloma, Abdominal pain, Hair, Stomach

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CLINICAL HISTORY:

A 15-year-old female patient was admitted to the hospital, presenting with persistent abdominal pain, nausea, vomiting, and constipation. She had been experiencing abdominal discomfort for the past seven months, with the symptoms of nausea, vomiting, and constipation becoming more pronounced over the last month.

During the physical examination, tenderness in the epigastric region was noted.

INVESTIGATIONS:

Laboratory tests revealed only a mild elevation in serum amylase levels, with no other significant pathological findings.

Subsequent Upper GI Endoscopy unveiled a trichobezoar, a mass formed by hair, completely filling the entire stomach. Interestingly, during the post-procedure interview, the patient denied any deliberate hair consumption.



Figure 1



Figure 2 -
Trichobezoars



Figure 3 – Trichobezoar found in stomach



Figure 3 – Trichobezoar found in jejunum

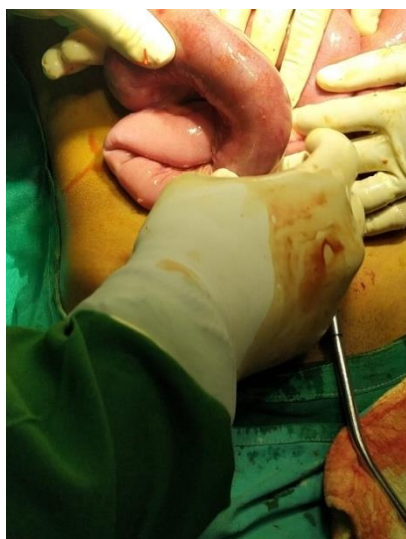


Figure 5

FINAL DIAGNOSIS:

Trichobezoar

Surgical intervention was deemed necessary. The operation involved the removal of a 30*10 cm trichobezoar, which was extracted intact through a 10 cm gastrotomy incision made on the anterior surface of the gastric corpus. Further exploration of the small intestine revealed another trichobezoar, located approximately 20 cm from the Duodeno-jejunal junction. This secondary bezoar had caused partial obstruction and dilatation of the proximal loop of the jejunum. An enterotomy was performed to remove this obstruction, and the procedure concluded without any postoperative complications. The patient's recovery was uneventful, and she was discharged from the hospital in stable condition

DISCUSSION:

Undigested foreign material are aggregated by the gastric fluid in the stomach. The “bezoar” was derived from Arabic word “badzehr” whose means “antidote”. Ancient people believed that bezoar from animals had medicinal properties, currently bezoars are known to be harmful and should be removed. The first reported trichobezoar was described in 16 years old boy by Baudamant in 1779. “Rapunzel” is a fairy tale in the collection by Brothers Grimm. The heroine in the story had very long blond hair. The first case of Repunzel Syndrome was published by Vaughan et al in 1968.

The trichobezoars, which are formed by indigestible hair or bristles, due to their keratinous structures, can be located throughout the entire intestinal tract, and generally in the stomach.[1] The trichobezoars are often encountered in young women and are frequently associated with an underlying psychiatric disorder. Usually they cannot be detected in the early stages. They are detected as hard masses in the epigastric region, bringing malignancy to mind. They can cause nonspecific symptoms such as epigastric pain, heartburn, and weight loss, and also can lead to ulceration, perforation, obstruction, and pancreatitis.[5]

Previous gastric surgery, gastroparesis, diabetes mellitus, reduction of gastric acid secretion, and prolonged gastric emptying are the factors that increase susceptibility to the formation of bezoars. Sometimes excess intake of indigestible substances alone can also cause the formation of a bezoar.[6]

The treatment of bezoars consists of the removal of these indigestible masses. Although noninvasive techniques such as medical treatment and enzymatic dissolution have been attempted, the reported success rates were low.[7,8] Endoscopic methods failed because of the difficulties in a majority of the cases of removal of large bezoars.[9,10,11] During the endoscopic removal, complications were seen such as pressure ulcers, esophagitis, and esophageal perforation.[12,13]

Although there are successful results in the treatment of bezoars with the laparoscopic approach, the long duration of the operation compared to laparotomy is not desirable. The advantages of the laparoscopic approach are better cosmetic results, less post-operative complications and a short hospital stay.[14] Laparotomy, on the other hand, is an important treatment option due to its advantages such as shorter duration of operation, simplicity of the procedure, low complication rate, possibility of exploration of satellite lesions in the gastrointestinal tract, and successful results. Laparotomy should be the treatment of choice for large gastrointestinal tract bezoars, whereas laparoscopic and endoscopic procedures should be preferred for smaller ones.

CONCLUSION:

Trichobezoars, composed of indigestible hair or bristles, often manifest in young women with underlying psychiatric conditions. They can cause various complications, including ulceration, obstruction, and pancreatitis. Risk factors include previous gastric surgery, gastroparesis, and diabetes. Treatment options range from noninvasive methods with limited success to laparotomy, which offers advantages in managing large bezoars. The choice of treatment depends on the size and location of the bezoar.

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