Rapunzel syndrome resulting in gastric perforation

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ABSTRACT

We report the case of an 18-year-old female patient with no past medical history who presented to the emergency department with acute abdominal pain and vomiting on the background of a long history of ingesting hair (trichophagia). Computed tomography revealed pneumoperitoneum and free fluid in keeping with visceral perforation. In addition, a large hair bolus was seen extending in contiguity from the stomach to the jejunum. A laparotomy was performed, revealing an anterior gastric perforation secondary to a 120cm long trichobezoar, which had formed a cast of the entire stomach, duodenum and proximal jejunum. The bezoar was removed and an omental patch repair to the anterior ulcer was performed. The patient made an excellent postoperative recovery and was discharged home with psychiatric follow-up review.

KEYWORDS

Trichotillomania – Trichophagia – Gastric perforation – Rapunzel syndrome – Bezoar

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A bezoar is a collection of undigested material in the gastrointestinal tract. Trichobezoars are made up of hair and are seen commonly in young females with trichotillomania (pulling out their hair) or trichophagia (eating their hair). The hair most often stays in the stomach but can sometimes extend through the stomach pylorus into the duodenum and jejunum, a phenomenon called Rapunzel syndrome.¹ We present the case of a young woman who presented with a trichobezoar that caused a gastric perforation.

Case history

An 18-year-old female patient with a 3-year history of trichophagia had been referred to the gastroenterologists via her general practitioner owing to nausea, vomiting and weight loss. An oesophagogastroduodenoscopy was performed with findings of a large trichobezoar in the stomach. Negotiation past the hairball and endoscopic removal of the hair proved impossible. An urgent surgical referral had been made but she presented acutely to the emergency department with acute abdominal pain and vomiting.

Initial resuscitation was commenced, and computed tomography (CT) of the abdomen and pelvis was performed. This revealed the trichobezoar as well as some pneumoperitoneum and free intra-abdominal fluid (Fig 1).

The patient was taken to the emergency operating theatre for a laparotomy. There was evidence of purulent free fluid, fibrin and an anterior gastric perforation, from which there were several hairs protruding. The trichobezoar was removed, having formed a cast of the entire stomach and

duodenum (Fig 2). The cast measured approximately 120cm in length (Fig 3).

A double layer gastric repair was performed and a nasogastric tube was placed. The anterior gastric perforation was repaired using an omental patch. The patient made an unremarkable postoperative recovery and was discharged home on the seventh postoperative day. She was engaged with the psychiatrists on discharge and agreed to give up eating her hair.

Discussion

A bezoar is a mass of undigested material in the gastrointestinal tract. Bezoars commonly consist of hair (trichobezoar), as in our case, but can also be composed of vegetable fibres (phytobezoars) or stones (lithobezoars). These conditions occur mainly in psychiatric patients and the incidence is thought to be 0.4–1% of the general population.²

The gastric trichobezoar forms following persistent ingestion of hair. Owing to a combination of the hair being indigestible and being retained in the stomach, a mass of hair can form. This often takes the shape of the stomach and sometimes the duodenum or even beyond (Rapunzel syndrome), as was the case with our patient.³

Symptoms include vomiting, haematemesis and weight loss. Malabsorption commonly occurs, resulting in iron deficiency and megaloblastic anaemia. The condition is also frequently reported to occur with patchy alopecia.⁴ Complications include intestinal obstruction, perforation, gastrointestinal bleeding, intussusception, pancreatitis and cholangitis.⁵

Figure 1 Transverse computed tomography showing pneumoperitoneum and the trichobezoar in the stomach

Figure 3 The removed trichobezoar measuring ~120cm in length

Figure 2 The trichobezoar forming a cast of the stomach and duodenum

Conclusions

The management of a gastric trichobezoar involves removing the trichobezoar and then preventing recurrence by addressing the underlying psychological cause. The treatment of the trichobezoar depends on the size of the mass and also on the presence of complications. Large trichobezoars would be impossible to remove endoscopically, not only because of the sheer volume of hair but also owing to the density of the mass. Surgery is clearly indicated in the presence of perforation, as with our patient.

Management of the underlying trichotillomania is likely to be more challenging in the long term. Psychiatric intervention should be emphasised to prevent a relapse.

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