Rapunzel syndrome (trichobezoar) - a case report

Clinical History:

A 4-year-old girl with complaints of abdominal pain, vomiting and upper abdominal distension for about 2 months was referred to the radiology department of the French Medical Institute for Mothers and Children (FMIC). An abdominal contrast-enhanced CT examination was performed.

Imaging Findings:

The abdominal CT examination with IV contrast material was taken by a 128 slice Siemens CT scanner. The axial and coronal contrast-enhanced slices of the abdomen showed non-enhancing mass lesion with mottled gas pattern in the stomach and proximal duodenum with resultant gastric and duodenal distension (Fig. 1a & 1b). The axial images of the upper abdomen representing non-enhanced mass contained a mottled gas pattern in the body and antrum of the stomach extending through the pylorus into the proximal duodenum (Fig. 2a). The sagittal image of the abdomen clearly demonstrated the non-enhanced mass within the lumen of the stomach which contained a linear-like gas pattern (Fig. 2b).

Discussion:

Trichobezoar is a rare medical disorder which is characterised by the existence of a hair ball mass in the stomach as well as the proximal small bowel. The disease often affects female children and adolescents whom mostly suffer from mental problems. These patients usually have a habit of hair pulling and swallowing which is called trichotillomania with resultant patchy hair loss [1].

The swallowed hairs are accumulated inside the stomach with subsequent formation of a hair ball that sometimes extends through the pyloric sphincter into the duodenum and proximal jejunum which is called Rapunzel syndrome [2].

The trichobezoar patients usually complain of nausea, vomiting, anorexia, abdominal pain, constipation and sometimes weight loss. On the other hand some patients may be completely asymptomatic [3]. In physical examination a palpable mass can be found in the epigastric area. Patchy hair loss in a psychiatric teenaged girl is the diagnosis clue for the disease. However, for definitive diagnosis imaging is required. Plain X-ray film can demonstrate dense soft tissue mass in a distended stomach, which may demonstrate peripheral calcifications [4]. Even though ultrasound is not a good modality for diagnosis of trichobezoar, an echogenic mass which contains air
shadowing may be seen inside the stomach and proximal small intestine. Barium upper GI and upper GI endoscopy examinations are usually preformed as diagnostic procedures. In the upper GI contrast studying trichobezoar is seen as a filling defect within the stomach and proximal intestine while in endoscopy the trichobezoar mass directly can be seen. CT examination is also a useful imaging tool which demonstrates the bezoar as a soft tissue mass containing a mottled gas pattern within the stomach and proximal small bowel. Besides that, a CT examination is able to point to the site of small bowel obstruction [5]. MRI is also useful to distinguish a bezoar within the stomach and small bowel which returns low signal in T1 and T2 WIs [6]. The traditional treatment for bezoars and Rapunzel syndrome is open surgery which was done in our case too. Successful laparoscopic and intraoperative endoscopic removals have also been mentioned in the literature recently [7]. Recurrence of Rapunzel syndrome may occur mainly in emotional and behavioural disordered patients, therefore alongside removal of the bezoar the mental treatment and psychological support are also considered to avoid the relapse. As a home message the physicians should consider the possibility of trichobezoar or Rapunzel syndrome in psychiatric young females with a history of abdominal pain [7].

**Differential Diagnosis List:** Rapunzel syndrome (trichobezoar), Gastrointestinal tumours with extension into the stomach like GIST, Any other bezoar type (e.g. phytobezoar)

**Final Diagnosis:** Rapunzel syndrome (trichobezoar).

**References:**


Description: Axial CT image demonstrates mass lesion with mottled gas pattern within the stomach and duodenum with evidence of stomach and duodenal distension. Origin: Radiology Department of French Medical Institute for Mothers and Children, Kabul, Afghanistan
Description: Coronal CT image shows mass lesion with some streak of air within the stomach cavity with amottled gas pattern mass within the duodenum with evidence of gastric and duodenal distension.

Origin: Radiology Department of French Medical Institute for Mothers and Children, Kabul, Afghanistan
Description: Axial contrast enhanced CT image of upper abdomen shows non enhanced mass lesion with mottled gas evidence in the body and antrum of stomach with its extension through the pyloric sphincter into the duodenum. Origin: Radiology Department of French Medical Institute for Mothers and Children in Kabul, Afghanistan
Description: Sagital contrast enhanced CT slice of abdomen demonstrates non enhanced mass lesion with containing linear like gas pattern within the body of stomach representing tricobezoar. Origin: Radiology Department of French Medical Institute for Mothers and Children in Kabul, Afghanistan