

## Endoscopic removal of an ingested toothbrush

A 17-year-old female student reported that a piece of meat she had swallowed after chewing had become impacted in the region of the hypopharynx. After unsuccessfully attempting to remove the piece of meat with her fingers, she tried to dislodge it using an adult toothbrush, which measured about 18 cm. However, both the piece of meat and the toothbrush slipped down her esophagus. The patient reported mild nausea and chest pain of short duration. Thoracic and abdominal X-rays demonstrated bristles in parallel rows in the stomach (● Fig. 1). About 10 hours later, the patient had an endoscopy under intravenous sedation with midazolam (5 mg) and fentanyl citrate (78.5 µg). It showed a toothbrush head with bristles in the gastric body, with the rest of the toothbrush impacted in the pylorus (● Fig. 2). An attempt was made to remove the toothbrush first with a foreign body forceps. The brush was dislodged from the pylorus, which facilitated its removal with a polypectomy snare without injury to the stomach or esophagus. The fingers had to be used to remove the toothbrush from the pharynx.

Ingestion of foreign bodies in adults is most often associated with mental disorders, bulimia, alcoholism, and as a way to initiate vomiting. Only a few cases of swallowed toothbrushes have been reported [1–5]. Because toothbrushes are long and rigid objects, it is difficult for them to spontaneously pass through the duodenum due to its fixed retroperitoneal position, or through the ileum, which may lead to perforation. In these cases a laparoscopic approach is an option [1,2,4]. For this reason, early diagnosis should be established and endoscopic removal should be carried out. X-rays, abdominal computed tomography (CT), and esophagogastroduodenoscopy are the main diagnostic methods. Characteristically, the bristles – in parallel rows – are observed on X-ray. Early endoscopic retrieval is usually successful and can be performed under intravenous sedation [2,3].



**Fig. 1** X-ray showing bristles of a toothbrush in parallel rows in the stomach of a 17-year-old female student.

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**Fig. 2** a Retrograde endoscopic view of the toothbrush in the stomach. b The toothbrush impacted in the pylorus. c Endoscopic view of the toothbrush, with the bristles in the gastric body.

### Bibliography

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