

Endoscopic removal of a gastric bezoar consisting of self-expanding spray foam used for insulating window frames

A 61-year-old man ate polyurethane pieces made of self-expanding spray foam. He presented to the emergency department 3 weeks later with upper abdominal pain. Routine laboratory tests were normal. Esophagogastroduodenoscopy (EGD) revealed a bezoar (● Fig. 1 a) and three deep ulcers in the gastric corpus (● Fig. 1 b). The bezoar was approximately 8 cm in diameter, nonadherent, nonobstructive, gray, shiny and of hard consistency.

EGD was repeated twice with the patient sedated by propofol to extract the bezoar, which took a total endoscopy time of 7 hours. As all endoscopic instruments such as snares were slipping on the surface of the bezoar and lithotripsy Dormia baskets were too small, a gutter was dug around the whole circumference of the bezoar to allow it to be grasped with a polypectomy snare. To do so, a rat-tooth and alligator-jaw grasping forceps (FG-47L-1; Olympus, Tokyo, Japan) was used because it presented a large opening diameter (14.9 mm), which accelerated the process, and the rat-teeth did not slip over the surface of the bezoar (● Fig. 1 c). A 55 × 25-mm internal-diameter polypectomy snare (Sonnet; Cook Medical, Limerick, Ireland) was inserted into the gutter and firmly closed to split the bezoar (● Fig. 1 d). The process was repeated until the size of the fragments allowed atraumatic extraction (● Fig. 2).

At the end of the first EGD, particular attention was paid to not leaving fragments of a size less than 3 cm in the stomach, which could have migrated into the small bowel and caused ileus. No complications occurred and proton pump inhibitors were prescribed; the patient was doing well at 1-month follow-up.

Expanding spray foam is made of polyurethane or acrylic latex; when the spray lands on surfaces it expands and foams up, then hardens to an aerated material. As polyurethane is highly inflammable, we did not use electro-surgical devices to fragment the bezoar but *in vitro* application of argon plasma coagulation on harvested fragments had almost no effect. The ulcers were likely to have been caused by local pressure on the gastric wall, as

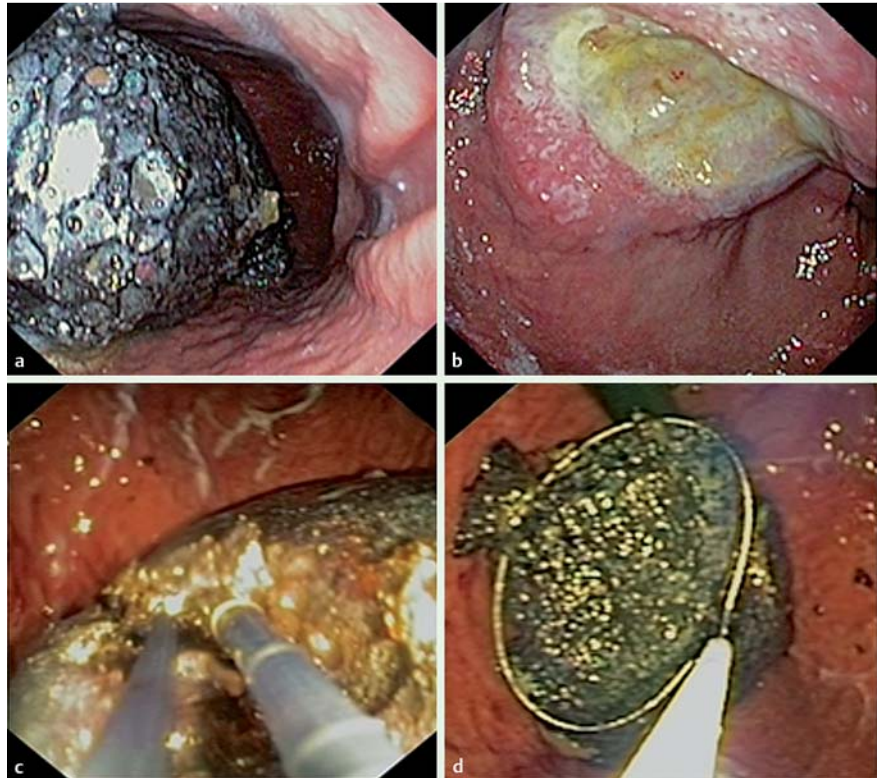


Fig. 1 Endoscopic views showing: **a** the polyurethane bezoar in the gastric corpus; **b** a deep gastric ulcer caused by the bezoar; **c** the gutter dug into the whole circumference of the bezoar to facilitate grasping it; **d** the polypectomy snare used to split the bezoar.



Fig. 2 Pieces of the polyurethane that were extracted from the stomach during the second esophagogastroduodenoscopy (EGD).

has been reported with intragastric balloons used for weight loss [1,2]. A case of polyurethane foam ingestion complicated by small bowel obstruction in a patient who underwent surgery has been reported [3]; to the best of our knowledge, this is the first case of successful endoscopic ex-

traction of a gastric bezoar made of self-expanding foam. Such bezoars are part of a new entity called plastobezoar [4].

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Competing interests: None

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