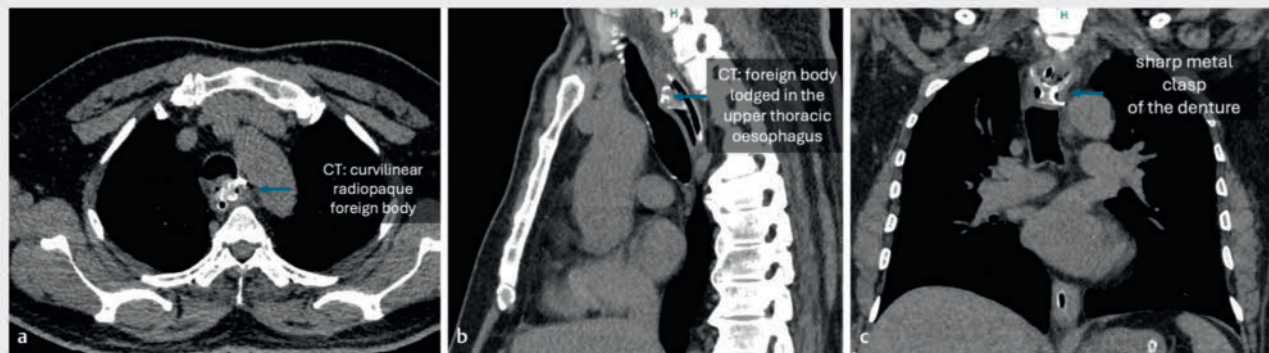
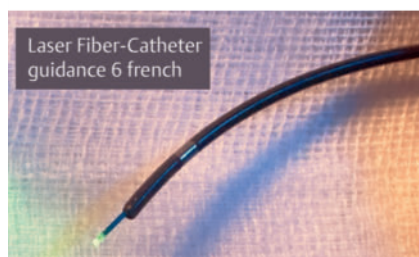


Laser-guided rescue: endoscopic removal of complex esophageal foreign bodies

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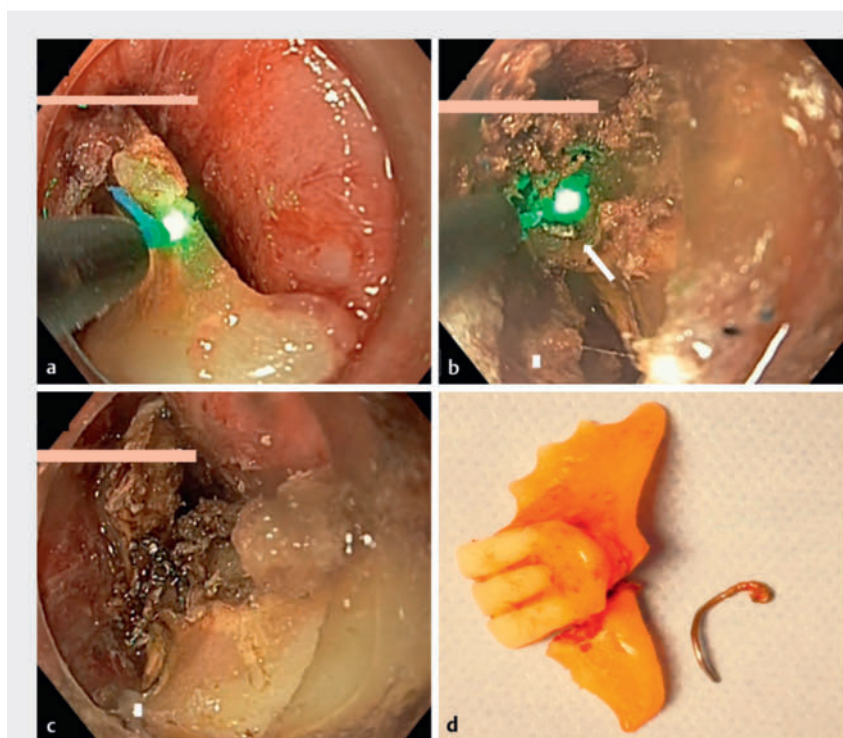
► **Fig. 1** Computed tomography images. **a–c** A well-defined curvilinear radiopaque density measuring 3.2×6.2 cm was noted in the upper thoracic esophagus at the level of the D3 vertebral body with associated short segment circumferential wall thickening (9 mm).



► **Fig. 2** Laser fiber (LightTrail Reusable 365 µm; Boston Scientific, Galway, Ireland) was preloaded onto a catheter (One Action Stent Introduction System [OASIS] internal catheter, 6 Fr, 203 cm; Cook Medical, Bloomington, Indiana, USA).

About 10%–20% of esophageal foreign bodies require intervention [1]. Dentures are particularly difficult to remove due to their size, sharp edges, and metal parts [2]. While endoscopy is often effective, some cases need surgery [3]. We report two cases of successful laser-assisted removal of impacted foreign bodies.

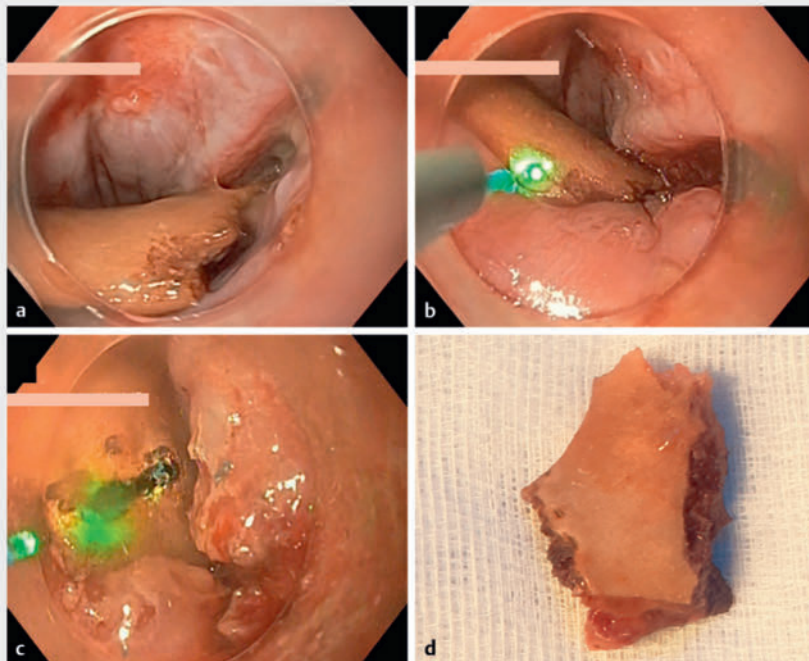
Case 1. A 35-year-old man with alcohol use disorder accidentally swallowed his denture. After failed removal attempts elsewhere, he was referred to our center. Computed tomography (CT) showed a radiopaque object at the D3 level (► **Fig. 1**). Endoscopy confirmed an impacted three-tooth denture with a sharp



► **Fig. 3** Case 1. **a** Laser-guided fragmentation of the denture. **b** Sectioning of the metallic wire. **c** Denture after complete fragmentation. **d** Retrieved denture fragments after removal.

metallic edge, deeply embedded in the esophageal wall, with a contained perforation. Given the failure of convention-

al techniques, the patient was intubated and endoscopy-guided laser lithotripsy was used for fragmentation.



► **Fig. 4** Case 2. **a** Impacted chicken bone. **b, c** Laser-guided fragmentation of the bone in the upper esophagus. **d** Retrieved bone fragment after removal.

Laser fiber (LightTrail Reusable 365 μ m; Boston Scientific, Galway, Ireland) was preloaded onto a catheter (One Action Stent Introduction System [OASIS] internal catheter, 6 Fr; Cook Medical, Bloomington, Indiana, USA), compatible with the 2.8-mm channel (► **Fig. 2**). The laser source was a 360-nm Lumenis VersaPulse holmium laser (Boston Scientific, Marlborough, Massachusetts, USA), with settings of 9.6W, Frequency 8 Hz, Energy 1200mj. This allowed precise disintegration. The narrowest section of the denture was cut (► **Fig. 3**), along with the metallic wire and acrylic resin. The entire procedure was completed in 15 minutes without collateral damage. The fragments were extracted with a snare (► **Video 1**). The decubitus ulcer-induced perforation was closed using the loop-and-clip technique.

Case 2. A 67-year-old patient presented with dysphagia after eating chicken. CT revealed a foreign body in the upper esophagus. As in the previous case, retrieval failed. The bone was fragmented using the same laser technique without complications (► **Fig. 4**).

Post-procedure assessments showed no leakage. Patients received prophylactic antibiotics, started oral intake the next day, and were discharged after 3 days, without complications.

Laser-assisted fragmentation is a safe and effective alternative for managing complex esophageal foreign bodies [4, 5], reducing surgery and enabling endoscopic closure in cases of perforation.

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Conflict of Interest

The authors declare that they have no conflict of interest.

The authors

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► **Video 1** Laser-assisted endoscopic fragmentation enabled successful removal of impacted esophageal foreign bodies and facilitated endoscopic closure, offering a safe alternative to surgery in complex cases.

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