ORIGINAL ARTICLE

Getting out of a fishy situation: endoscopic submucosal dissection to the rescue for acute and delayed adverse events from embedded fishbone injury

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Background and Aims: Fishbone ingestion can result in deep mural injury, perforation, or extraluminal migration, posing significant diagnostic and therapeutic challenges. When the foreign body is completely embedded and not visualized endoluminally, surgical intervention is often required. We describe 2 cases demonstrating the utility of EUS-guided endoscopic submucosal dissection (ESD) for minimally invasive removal of fully embedded fishbones in acute and delayed presentations.

Methods: We report a case series of 2 patients with suspected retained fishbones who underwent CT, endoscopy, and EUS evaluation followed by ESD-assisted foreign body removal. Procedural technique, imaging findings, and clinical outcomes were reviewed.

Results: In the first case, an 84-year-old woman with persistent odynophagia had a fishbone embedded in the cervical esophageal wall, identified by CT and EUS after prior negative endoscopy. ESD enabled precise localization and successful removal with mucosal closure. In the second case, a 65-year-old man presented 11 months after ingestion with a penetrating antral fishbone and perigastric collection. EUS-guided ESD through an overlying ulcer allowed safe extraction and internal drainage. Both patients had favorable clinical outcomes without need for surgery.

Conclusions: EUS-guided ESD is an effective minimally invasive approach for removal of completely embedded upper GI foreign bodies and should be considered in complex acute and delayed presentations. (VideoGIE 2026;11:477-9.)

CASE DESCRIPTION

Foreign body ingestion is a common GI presentation, with fishbones being among the most frequently ingested objects. Although many pass spontaneously or are retrieved endoscopically, fishbones pose a higher risk of deep mural injury, perforation, and extraluminal migration due to their sharp, linear morphology. Completely embedded or extraluminal fishbones can be difficult to localize endoscopically and often require surgical intervention. We present 2 cases demonstrating the use of EUS-guided endoscopic submucosal dissection (ESD) for minimally invasive removal of fully embedded fishbones in both acute and delayed presentations.

The first case involved an 84-year-old woman who presented with persistent throat discomfort after eating fish. Prior laryngoscopy and EGD failed to identify a foreign body. After 2 weeks of persistent symptoms, she was transferred to our institution. CT of the neck revealed a 0.9-cm linear hyperdensity embedded within the anterior wall of the cervical esophagus without luminal penetration (Fig. 1A). Repeat upper endoscopy demonstrated only a subtle linear submucosal prominence (Fig. 1B). Linear EUS confirmed a linear echogenic structure within the esophageal wall (Fig. 1C). Injection of methylene blue at the site of submucosal prominence was

Abbreviation: ESD, endoscopic submucosal dissection.

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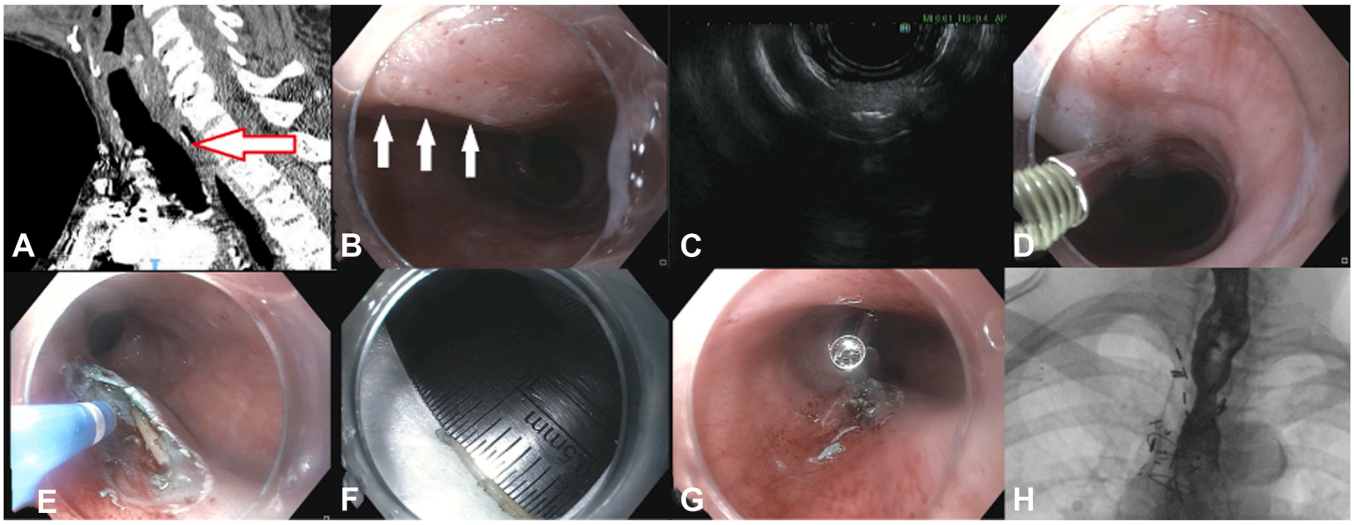


Figure 1. EUS-guided endoscopic submucosal dissection for acute esophageal fishbone injury. **A,** CT showing fishbone embedded in anterior cervical esophageal wall. **B,** Linear submucosal bulge on endoscopy. **C,** EUS showing linear foreign body. **D,** Submucosal methylene blue injection. **E,** Controlled dissection exposing fishbone. **F,** Extracted fishbone. **G,** Mucosal closure with clips. **H,** Postprocedural esophagram showing no leak. The *arrows* are pointing at the fishbone for easier visualization.

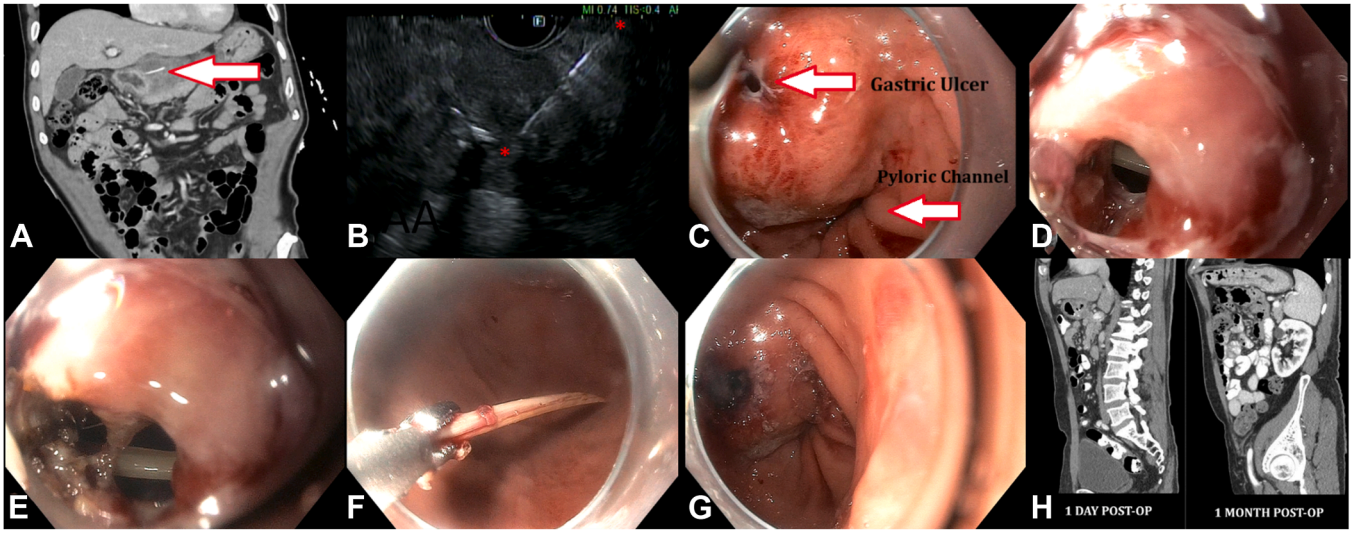


Figure 2. Endoscopic submucosal dissection for delayed gastric fishbone injury with perigastric collection. **A,** Coronal CT showing linear radio-opacity. **B,** EUS showing linear foreign body. **C,** Large antral ulcer overlying the collection. **D** and **E,** T-type knife (Erbe USA Inc, Marietta, Ga, USA) incision and submucosal dissection exposing the cavity and fibrous capsule. **F,** Retrieval of a 3-cm fishbone with alligator forceps. **G,** Cavity left open for natural drainage and autodebridement. **H,** Postoperative CT demonstrating resolution of the collection. The *red asterisk* (*) denotes the linear foreign body for improved visualization. The *arrows* are pointing at the fishbone for easier visualization.

followed by ESD to expose the embedded fishbone (Fig. 1D and E). The fishbone was removed intact (Fig. 1F), and the mucosal defect was closed with through-the-scope clips (Fig. 1G). A postprocedural esophagram showed no leak (Fig. 1H), and the patient's symptoms completely resolved. The patient underwent early graded diet advancement after a brief nothing-by-mouth period of 18 hours and was discharged on hospital day 5.

The second case involved a 65-year-old man who presented with recurrent epigastric pain 11 months after suspected fishbone ingestion. A prior endoscopy had not visualized a foreign body. He now represented with 2 days of worsening epigastric pain and vomiting, with symptoms persisting for 2 weeks before transfer. CT imaging demonstrated a 2.8-cm linear foreign body penetrating the posterior gastric antrum with an associated multiloculated perigastric collection (Fig. 2A). Linear EUS identified a linear foreign body within a fibrotic perigastric pocket (Fig. 2B). Contrast injection revealed an ill-defined cavity with unclear organization; therefore, lumen-apposing metal stent placement was deferred. Urgent EGD revealed a large cratered ulcer in the antrum overlying the suspected cavity (Fig. 2C).

Correlation with the EUS-guided needle trajectory confirmed that the access point corresponded directly to the base of the ulcer. Based on this alignment, endoscopic dissection was performed through the ulcer base using an electrosurgical knife along the anticipated tract, allowing entry into the cavity and exposure of a dense fibrous capsule surrounding the fishbone (Fig. 2D and E). The fishbone was successfully retrieved using alligator forceps (Fig. 2F). Intraoperative contrast injection revealed a contained cavity without evidence of free perforation; therefore, the defect was intentionally left open to facilitate internal drainage and acid-mediated debridement (Fig. 2G). Both intraoperative and postprocedural contrast imaging at 24 hours showed no extravasation, and follow-up CT demonstrated resolution of the perigastric collection (Fig. 2H and Video 1, available online at www.videogie.org). The patient was kept nothing by mouth for 24 hours until imaging confirmed the absence of a leak, after which the diet was safely advanced. The patient improved clinically with antibiotics, remained stable, and was discharged on hospital day 6. Given the patient's clinical stability and radiologic resolution, repeat endoscopic evaluation was deferred.

Fishbones are among the most dangerous ingested foreign bodies because of their sharp configuration and tendency to penetrate the GI wall, leading to adverse events that occur more frequently than with blunt objects.[1] Reported sequelae include esophageal and intestinal perforation, as well as extraintestinal manifestations such as vascular injury with aortic involvement, and hepatic abscess formation.[2-4] When a fishbone becomes completely embedded or migrates beyond the lumen, conventional endoscopy may fail to identify the culprit, often delaying diagnosis and prompting surgical consultation.[5] Focal mucosal bulging or edema secondary to the foreign body may provide reliable endoscopic landmarks.[6] In this setting, EUS provides critical diagnostic advantage by enabling real-time identification of radiolucent foreign bodies, defining their relationship to the GI wall, and assessing involvement of adjacent structures.[7] The present cases illustrate how EUS can guide controlled endoscopic dissection, which can be leveraged not only for localization but also for precise access and extraction, offering a safe and minimally invasive solution across both acute and chronic presentations that would otherwise be managed surgically.

DISCLOSURE

The following authors disclosed financial relationships: S. Mahadev: Consultant for Boston Scientific. D. Carr-Locke: Royalties/licensing fees from STERIS Corporation. R. Z. Sharaiha: Consultant for Boston Scientific, Olympus, Surgical Intuitive, and Cook Medical. K. Sampath: Consultant for ConMed and Lumendi. All authors disclosed no financial relationships.

REFERENCES

1. Goh BKP, Chow PKH, Quah H-M, et al. Perforation of the gastrointestinal tract secondary to ingestion of foreign bodies. World J Surg 2006;30:372-7.
2. Grayson N, Shanti H, Patel AG. Liver abscess secondary to fishbone ingestion: case report and review of the literature. J Surg Case Rep 2022;2022:rjac026.
3. Patel CB, Wademan B, Galvin SD. A life-threatening aortic complication from fishbone ingestion. ANZ J Surg 2023;93:424-5.
4. Dupont DH, Umejiego LM, Satoskar S, et al. Fishbone foreign body ingestion with gastric impaction and intestinal micro-perforation in an adult female: a case report. Cureus 2024;16:e72099.
5. Birk M, Bauerfeind P, Deprez PH, et al. Removal of foreign bodies in the upper gastrointestinal tract in adults: European Society of Gastrointestinal Endoscopy (ESGE) clinical guideline. Endoscopy 2016;48:489-96.
6. Yu J, Gao P, Lin S, et al. Endoscopic treatment for complicated gastric antral-embedded foreign bodies: reflection and retrospection. Gastroenterol Rep (Oxf) 2025;13:goaf026.
7. Qin L, Shi H, Zhang X, et al. Endoscopic removal of esophageal foreign body embedded in muscularis propria. Endoscopy 2024;56(Suppl 1):E89-90.