

Letter

Endoscopy-Guided Treatment for Esophageal Foreign Bodies in Two Cases

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Academic Editor: Kassem Sharif

Submitted: 28 March 2026 Revised: 12 June 2026 Accepted: 23 June 2026 Published: 15 October 2026

1. Introduction

Unlike other segments of the gastrointestinal tract, the esophagus has three physiological constrictions, lacks a serosal layer, and lies in proximity to major arterial vessels. Thus, some sharp and relatively large foreign bodies may be embedded in or perforate the esophageal wall, and even involve the adjacent arteries, thereby posing a risk of life-threatening bleeding [1]. Among adults, the most common foreign bodies swallowed accidentally in the esophagus are bones [2,3]. Dental prostheses, including retainers, dentures, and orthodontic wires, are also encountered in adult and adolescent populations [4,5]. While the majority of foreign bodies pass through the gastrointestinal tract spontaneously, 10–20% require endoscopic intervention, and approximately 1% necessitate surgery [4]. Herein, we report two cases of esophageal foreign bodies. The first involved a common chicken bone, but its large size posed technical challenges during the endoscopic intervention. The second involved a fragment of an orthodontic retainer, a relatively rare foreign body with sharp edges. Notably, in the second case, the foreign body had perforated the esophageal wall and was located near the aortic arch and descending aorta, representing an extremely high-risk clinical situation. In both cases, foreign bodies were successfully removed endoscopically, providing practical guidance for clinicians and endoscopists.

2. Case 1

A 60-year-old female was admitted to our department due to swallowing a chicken bone one day ago. Before admission, she performed an upper gastrointestinal endoscopy under local anaesthesia, showing that the bone was embedded in the esophageal wall at the entrance and occupied most of the esophageal lumen (Fig. 1A). Considering the potential risk of further endoscopic procedures at that time, she underwent chest computed tomography (CT) scans, which did not show esophageal perforation (Fig. 2). Thus, endoscopic intervention under intravenous anaesthesia was performed. After removing the chicken bone with foreign body forceps (Fig. 1B), two ulcers remained in op-

posite positions (Fig. 1C). The size of this bone was approximately 3 × 1.5 cm (Fig. 1D). Following the endoscopic procedure, the patient was discharged. She was advised to maintain a liquid diet for one week and to seek immediate medical attention if any discomfort occurred.

3. Case 2

A 17-year-old female accidentally swallowed a fragment of an orthodontic retainer and then developed retrosternal pain and a foreign-body sensation in the esophagus for two days. Thus, she was admitted to our department and underwent upper gastrointestinal endoscopy, which showed that a fragment of an orthodontic retainer had perforated the upper esophageal wall with oozing of bleeding. The orthodontic retainer was located near the aortic arch and descending aorta on chest CT scans (Fig. 3). Endoscopic intervention was performed under intravenous anaesthesia. Foreign body forceps and a snare were used successively to remove the fragment of an orthodontic retainer (Fig. 4A). Its size was approximately 3.7 × 1.5 cm (Fig. 4B). A longitudinal deep mucosal defect remained and was closed using metal clips (Fig. 4C). No adverse response occurred after endoscopy. After a 5-day fast without any apparent discomfort, the patient was gradually transitioned to a liquid diet. During hospitalization, the patient received antibiotics, mucosal protective agents, and nutritional support. She remained asymptomatic on a liquid diet for 4 consecutive days and was subsequently discharged. After discharge, no discomfort was reported, and no follow-up gastroscopy was performed.

4. Discussion

The two cases presented involved foreign bodies that had been embedded in or perforated the esophageal wall, and were successfully managed endoscopically without surgical intervention. This highlights the importance of endoscopic techniques in managing high-risk esophageal foreign bodies. In case 1, despite the chicken bone being embedded in the esophageal wall and occupying most of the esophageal lumen, CT scans did not show definitive perforation. This suggested that negative CT findings can-



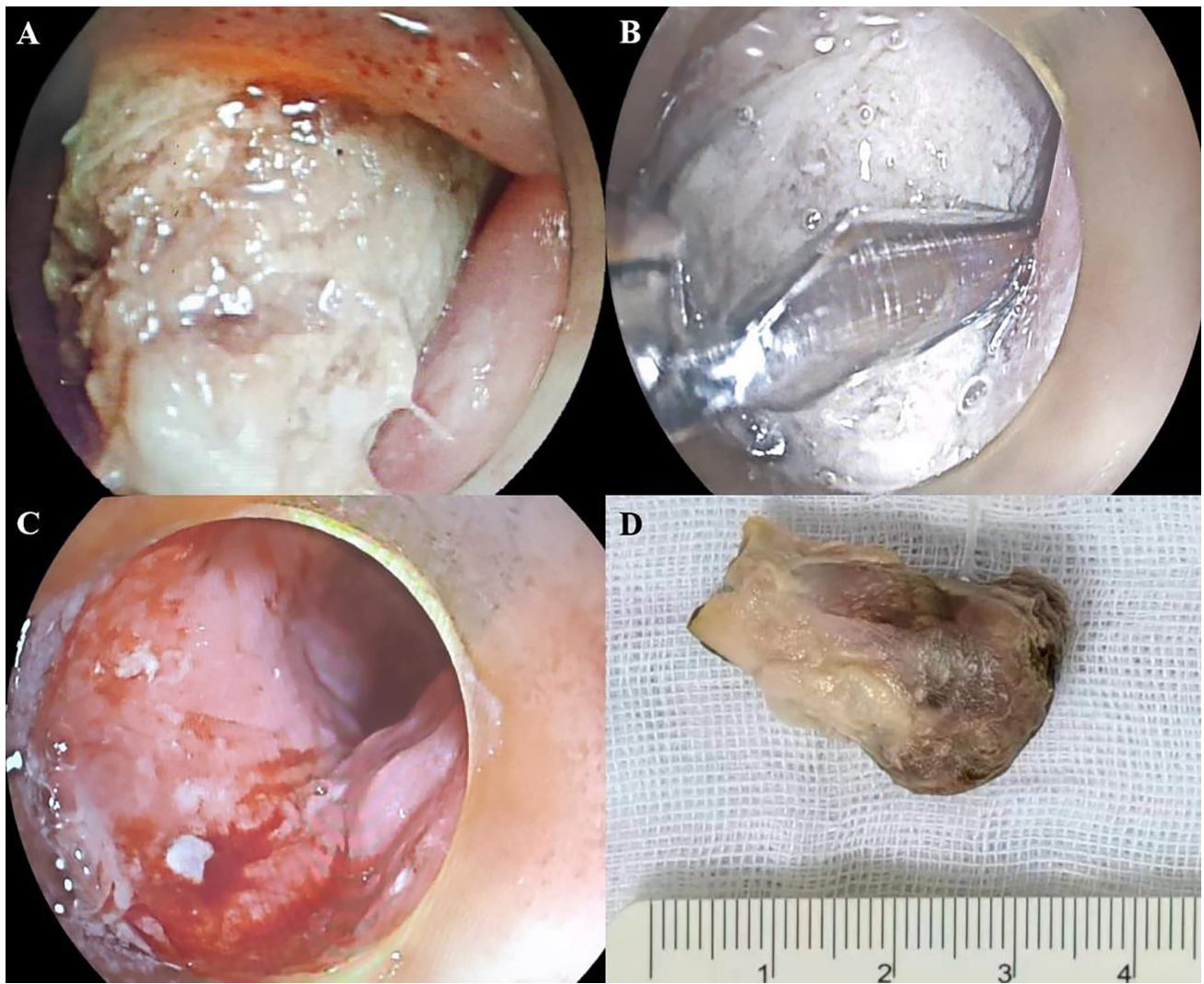


Fig. 1. Endoscopic procedures in the first case. The chicken bone was embedded in the esophageal wall (A), and then removed (B). Deep mucosal defects on both sides were observed (C). The size of this bone was approximately 3×1.5 cm (D).

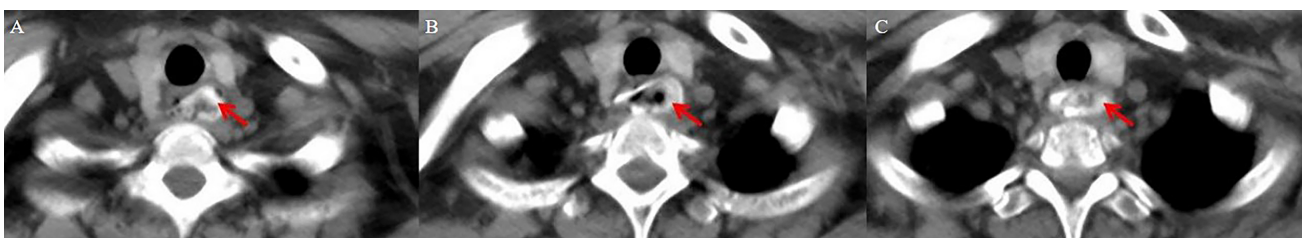


Fig. 2. Chest computed tomography scans in the first case. In the affected esophageal area of the impacted chicken bone (red arrows), there was no obvious free gas, fluid accumulation, or definite esophageal perforation near the aortic arch (A), upper segment of ascending aorta (B), and middle and lower segments of ascending aorta (C).

not completely rule out deep esophageal wall injury. If patients continue to have symptoms, such as odynophagia and retrosternal discomfort, prompt endoscopic assessment is warranted regardless of imaging results [6]. In case 2, the orthodontic retainer fragment was located near the aortic arch and descending aorta, which poses a potential risk of life-threatening vascular injury during removal. Preop-

erative CT imaging was crucial for defining this anatomical relationship, allowing the endoscopists to plan a careful extraction using foreign body forceps and a snare. After removal, the longitudinal deep mucosal defect was closed with metal clips, which prevented delayed bleeding or perforation. However, in our cases, post-procedural imaging and endoscopy were not performed to confirm complete

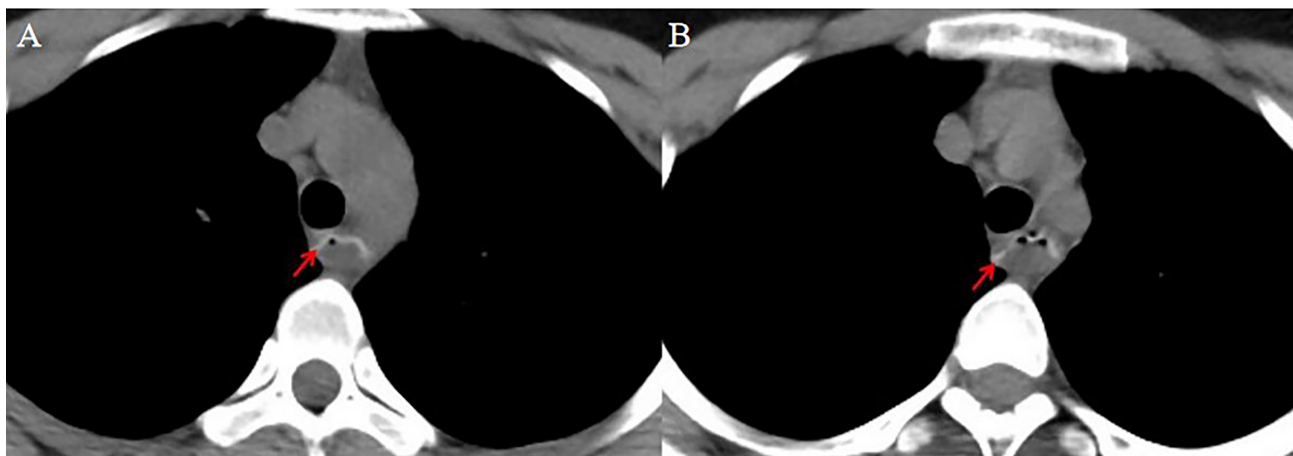


Fig. 3. Chest computed tomography scans in the second case. The fragment of an orthodontic retainer was located near the aortic arch (A) and descending aorta (B) (red arrows).



Fig. 4. Endoscopic procedures in the second case. Foreign body forceps and a snare were used to remove the fragment of an orthodontic retainer (A). Its size was approximately 3.7×1.5 cm (B). A longitudinal deep mucosal defect was closed using metal clips (C).

healing of the ulcer sites. Thus, complete healing of the ulcer sites and the absence of delayed complications could not be objectively confirmed.

5. Conclusion

In conclusion, these two cases suggest that endoscopic intervention should be considered as a safe and effective option in selected patients with esophageal foreign bodies embedded in or perforating the esophageal wall, even when CT findings are negative for perforation or the foreign body is located in close proximity to major vessels. Timely endoscopic intervention, careful pre-procedural imaging assessment, and appropriate closure of post-extraction defects are critical to achieving favorable clinical outcomes.

Key Points

- Large or sharp esophageal foreign bodies may become embedded in or penetrate the esophageal wall, creating risks of perforation, bleeding, or injury to adjacent major vessels.
- Two cases of esophageal foreign bodies, one involving a chicken bone and the other an orthodontic retainer

fragment, were successfully managed by endoscopic removal.

- In patients who are unable to pass foreign bodies spontaneously, timely endoscopic intervention should be considered to reduce the risk of perforation and severe infection, as well as the need for surgery.

Availability of Data and Materials

The data that support the findings of this study are available from the corresponding author upon reasonable request.

Author Contributions

Conception and supervision of this work: XSQ; Clinical and endoscopic treatment and follow-up of these cases: XDS, JF, HL, ZJG, and XSQ. Discussion of these case reports and literature review: CG, QQL, XDS, HL, JF, ZJG, DYZ, and XSQ. Writing the study protocol: CG. Revising the study protocol: CG. Writing the original draft: CG, QQL, and XSQ. Resources: XDS, JF, HL, ZJG, and XSQ. All authors contributed to revising the manuscript critically for important intellectual content. All authors read and ap-

proved the final manuscript. All authors have participated sufficiently in the work and agreed to be accountable for all aspects of the work.

Ethics Approval and Consent to Participate

This study was conducted in accordance with the Declaration of Helsinki. The protocols of the two cases were approved by the Medical Ethics Committee of the General Hospital of Northern Theater Command (Approval No.: [Y (2026) 70] and [Y (2026) 71]). This report is a retrospective case study based solely on clinical data derived from the patient's routine medical records generated during previous diagnostic and therapeutic care. No additional interventions, examinations, follow-ups, or collection of new biological specimens were involved. The Ethics Committee granted a waiver of informed consent for the two cases.

Acknowledgment

Not applicable.

Funding

This research received no external funding.

Conflicts of Interest

Given his role as an Editorial Board Member, Xingshun Qi had no involvement in the peer-review of this article and has no access to information regarding its peer-

review. Full responsibility for the editorial process for this article was delegated to Kassem Sharif. The other authors declare no conflicts of interest.

References

- [1] Chirica M, Kelly MD, Siboni S, Aiolfi A, Riva CG, Asti E, et al. Esophageal emergencies: WSES guidelines. *World Journal of Emergency Surgery: WJES*. 2019; 14: 26. <https://doi.org/10.1186/s13017-019-0245-2>
- [2] Shrestha A, Gurung RB, Sharma P, Shrestha R, Shrestha P. Endoscopic Management of Foreign Body Impaction in the Upper Gastrointestinal Tract in a Tertiary Care Centre of Nepal. *Kathmandu University Medical Journal (KUMJ)*. 2020; 18: 139–143.
- [3] Zhong Q, Jiang R, Zheng X, Xu G, Fan X, Xu Y, et al. Esophageal foreign body ingestion in adults on weekdays and holidays: A retrospective study of 1058 patients. *Medicine*. 2017; 96: e8409. <https://doi.org/10.1097/MD.00000000000008409>
- [4] Limpas Kamiya KJ, Hosoe N, Takabayashi K, Hayashi Y, Sun X, Miyanaga R, et al. Endoscopic removal of foreign bodies: A retrospective study in Japan. *World Journal of Gastrointestinal Endoscopy*. 2020; 12: 33–41. <https://doi.org/10.4253/wjge.v12.i1.33>
- [5] Grandmougin D, Dan P, Ferraro F, Maureira JP. Insidious pericardial journey of an orthodontic metallic retainer wire. *Interdisciplinary Cardiovascular and Thoracic Surgery*. 2024; 39: ivae201. <https://doi.org/10.1093/icvts/ivae201>
- [6] Mughal Z, Charlton AR, Dwivedi R, Natesh B. Impacted denture in the oesophagus: review of the literature and its management. *BMJ Case Reports*. 2019; 12: e229655. <https://doi.org/10.1136/bcr-2019-229655>