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VIDEO | ENDOSCOPY

Fragmentation of Esophageal Foreign Body With the Holmium: YAG Laser

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CASE REPORT

A 78-year-old man was admitted with hypersalivation and inability to swallow liquids after accidental foreign body ingestion. Esophagogastroduodenoscopy identified a flat and sharp-pointed chicken bone lodged in the distal esophagus (Figure 1). Initial endoscopic removal with a variety of devices (retrieval forceps, polypectomy snares, and even rigid esophagoscopy) was ineffective. An inflated wire-guided balloon dilator was also unsuccessful in retrieving the bone. Computed tomography revealed the absence of esophageal perforation, and 12 hours after admission, the patient was referred to our center.

Subsequently, esophagogastroduodenoscopy under general anesthesia with endotracheal intubation was carried out. The holmium:YAG laser with a single-use laser fiber (Flexiva 365 μm Laser Fiber; Boston Scientific Co., Natick, MA) and a standard gastroscope (GIF-HQ190, Olympus Medical Systems, Tokyo, Japan) was used to fragment the foreign body into 2 pieces (Video 1, http://links.lww.com/ACGCR/A21 and Figure 2). Pulse energy setting for the laser was 1.2 J energy and 10 Hz frequency. Thereafter, the fragmentation was completed by the use of reusable surgical scissors (FS-3L-1; Olympus Medical System), and the sharp-edged chicken bone pieces were removed using a standard-sized overtube to protect the esophageal mucosa from lacerations. Finally, endoscopic assessment of the esophagus showed a perforation of a decubitus ulcer (<10 mm) (Figure 3). After failed attempt with a standard endoscopic clip, an over-the-scope clip (Ovesco Endoscopy AG, Tübingen, Germany) with pointed

Figure 1. Endoscopic image showing a chicken bone lodged in the distal esophagus.

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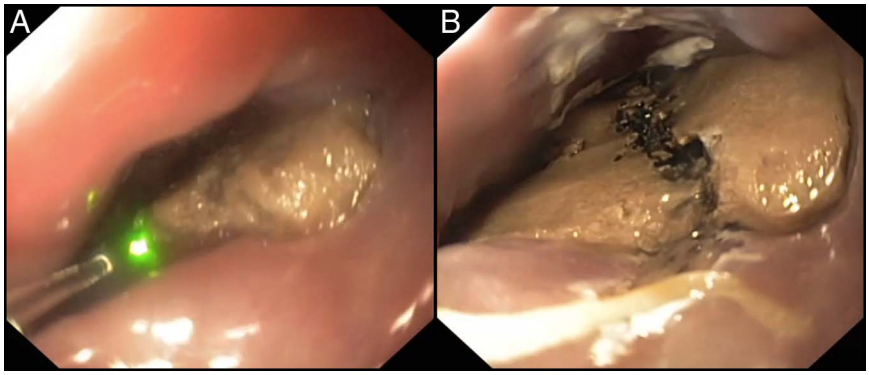

Figure 2. Endoscopy showing (A) the holmium:YAG laser (1.2 J, 10 Hz, 12 W) with a single-use laser fiber (Flexiva 365 laser fiber, Boston Scientific) and (B) the chicken bone fragmented into 2 pieces with the holmium:YAG laser.

teeth (type t) and a cap (11 mm) was deployed. Endoscopic closure of esophageal perforation was successfully achieved and confirmed by radiographic contrast dye injected into the esophagus. The patient was discharged home, asymptomatic after 7 days of hospitalization and antibiotics, without further adverse events.

Esophageal foreign bodies are frequently encountered by endoscopy units. The Holmium:YAG laser is commonly used in urology to treat different pathologies[1] and has been described in gastrointestinal endoscopic lithotripsy for the treatment of gallbladder stones.[2] Regarding foreign bodies, few cases of fragmentation within the stomach have been published,[3–5] and no information about the use of this laser to remove esophageal foreign bodies has been reported. This case demonstrates the safe and successful case report of holmium:YAG laser to fragment difficult esophageal foreign bodies (Video 1, http://links.lww.com/ACGCR/A21).

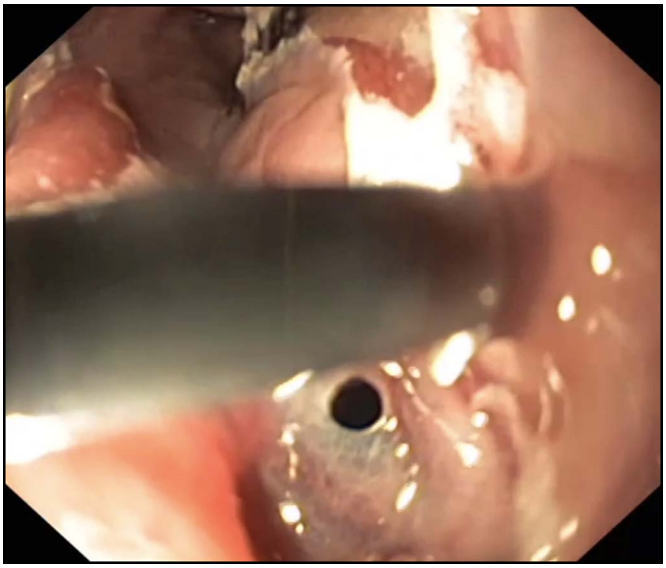

Figure 3. An esophageal perforation of a decubitus ulcer.

Video 1. Esophagogastroduodenoscopy showing fragmentation of a chicken bone using the holmium:YAG laser.

DISCLOSURES

Author contributions: C. Mangas-Sanjuan wrote the manuscript and is the article guarantor. L. Medina-Prado, S. Baile-Maxía, J. Martinez, JA Casellas, and JR Aparicio revised the manuscript for intellectual content and approved the final manuscript.

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Informed consent was obtained for this case report.

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