Case Report

Real Steak Knives of Cincinnati: Repeated Foreign Body Ingestion With Novel Endoscopic Removal

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Repeated ingestion of foreign objects presents a multidisciplinary endoscopic dilemma. We report a 32-year-old female patient with history of multiple previous foreign body ingestions requiring several past exploratory laparotomies, who presents with a knife blade in the esophagus. We present a novel method of using a rigid cervical esophagoscope with a salivary bypass tube. The tip of the knife was isolated into the cervical esophagoscope, and the salivary bypass tube advanced off the cervical esophagoscope over the knife, shielding the serrated edge during removal preventing laceration to the esophagus.

Key Words: Larynx, endoscope, rigid, foreign body, knife, sharp, overtube.

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INTRODUCTION

When confronted with an esophageal foreign body, endoscopic removal saves morbidity and time in the operating room. With potentially dangerous objects, time is of the essence depending on determination of risk of aspiration/perforation, with a maximum limit of 24 hours being the rule.1

We present a novel approach for removing a serrated steak knife from the esophagus via rigid endoscopy while preventing iatrogenic damage upon removal using a salivary bypass tube. Flexible overtubes have been used for removal of sharp objects presenting in the esophagus or gastroesophageal junction (GEJ).2,3 This method limits gastrointestinal mucosa from trauma, aspiration risk, and extends the depth at which endoscopic removal of foreign bodies is possible. Although designed for pharyngeal stenting, salivary bypass tubes can easily fit over rigid cervical endoscopes like the flexible overtubes fit over flexible endoscopes.

In the patient presented here, the foreign body was swallowed blunt end first, further increasing difficulty of safe removal. Advancing points have a higher chance of puncturing and must be protected on retrograde retrieval.4 Previous reviews indicate that open surgical removal should be considered when endoscopic retrieval is impossible, or if the object is advancing with a pointed end.5

CASE REPORT

The patient was a 32-year-old female with history of borderline personality disorder and compulsive behavior. She had numerous previous foreign body ingestions, including various knives, forks, spoons, and assorted other objects. In total at our institution, this patient required 44 endoscopic removals and three open exploratory laparotomies.

She presented, this instance, with chest pain and was found to have a serrated knife on plain abdominal radiography (Fig. 1A). The decision was made to attempt endoscopic removal with both gastroenterology and otolaryngology. Initial attempts at retrieval with flexible endoscopy under general anesthesia failed because the knife tip was embedded in the distal esophageal mucosa and the concern that removal would cause further trauma (Fig. 1B). The decision was made to try rigid esophagoscopy.

Before inserting the rigid cervical esophagoscope, the esophagoscope was place through the lumen of a salivary bypass tube (Fig. 1C,D,E). Esophagoscopy was then performed, and the tip of the knife was isolated in the lumen of the esophagoscope, noting the tip of the knife to be at 30 cm, just proximal to the GEJ. The tip was grasped by alligator forceps and was slowly removed in concert with the cervical esophagoscope. The preloaded salivary bypass tube was advanced over the serrated edge of the knife, shielding the edge upon removal from the esophagus into the oral cavity. After removal, there were only superficial lacerations to the esophageal mucosal, and a postoperative esophagram was normal.

The patient was discharged from the hospital to follow-up with psychiatry. Unfortunately, this method was required to be used in the same patient on two more incidences that month.
DISCUSSION
Out of her 46 procedures for various foreign body removal, this novel approach prevented at least three open surgeries and decreased recovery time. Complications from retrieval of sharp objects include laceration and perforation, ranging from 15% to 35%.6,7 This approach allows for safe removal of sharp-pointed or serrated objects, and may be useful for objects not amenable to flexible endoscopic removal due to challenging angles or concern for damage with traction of the object.

CONCLUSION
We report a 32-year-old woman who ingested three serrated knives, which were successfully removed using a novel method of a cervical esophagoscope and salivary bypass tube. This technique uses an implant readily available in many operating rooms to perform safe object removal and prevent complications.

BIBLIOGRAPHY