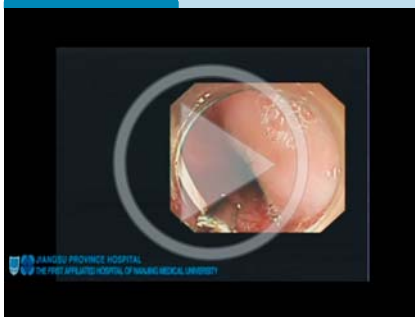


Endoscopic retrieval followed by compression hemostasis using a Sengstaken–Blakemore tube to manage a foreign body with suspected aortic injury



Fig. 1 Contrast-enhanced computed tomography scan of a 44-year-old woman with a fishbone stuck in her esophagus. The fishbone had pierced the esophageal wall and was close to the descending aorta (arrow).

Video 1



Endoscopic retrieval of a fishbone followed by compression hemostasis using a Sengstaken–Blakemore tube. Postoperative care and examinations are also presented.

A 44-year-old woman presented with unremitting chest pain after a fish meal. A fishbone had been stuck in her esophagus overnight. A local endoscopist had tried to remove it but had failed. Contrast-enhanced computed tomography (▶ **Fig. 1**) confirmed that there was a high density line shadow in the esophagus just below the tracheal bifurcation. The fishbone had pierced the esophageal wall and was close to the descending aortic adventitia, and possible aortic injury was strongly suspected. Standard cardiovascular surgery was planned, but was refused by the woman and her relatives because of the potentially massive surgical trauma.



Fig. 2 Endoscopic image of the tip of the fishbone.



Fig. 4 Esophageal compression hemostasis using an inflated gastric balloon.



Fig. 3 A 2.2 cm long fishbone retrieved endoscopically from the esophageal wall.

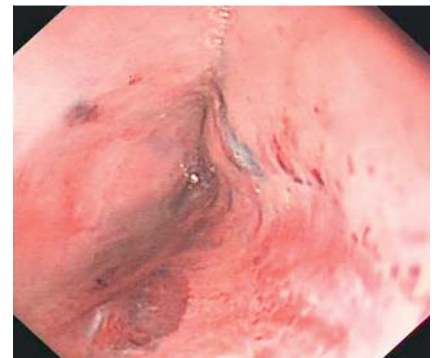


Fig. 5 Mild mucosal erosion 20 h postoperatively after endoscopic retrieval of a fishbone followed by compression hemostasis using a Sengstaken–Blakemore tube.



Fig. 6 Computed tomography showed no hemorrhage or undesired complications 7 days postoperatively after endoscopic retrieval of a fishbone followed by compression hemostasis using a Sengstaken–Blakemore tube.

With written informed consent, an innovative endoscopic strategy involving multidisciplinary cooperation was successfully employed (▶ **Video 1**). Using endoscopic imaging, only the tip of the fishbone could be observed, 28 cm from the incisors (▶ **Fig. 2**). Grasping forceps were introduced and the 2.2-cm-

long fishbone was successfully retrieved (▶ **Fig. 3**). Then fresh blood immediately spurting out. After flushing with normal saline, a Sengstaken–Blakemore tube (SBT) was immediately inserted. The gastric balloon was placed accurately over the mucosal wound, inflated with 100 mL of gas, and adjusted for local compression

hemostasis (● Fig. 4). The SBT was deflated under endoscopy 20 h postoperatively. Only mild mucosal erosion was observed and there was no active bleeding (● Fig. 5). The patient's postoperative course was uneventful (● Fig. 6).

Endoscopic management is necessary in only 10%–20% of foreign-body cases, while fewer than 1% require a standard surgical procedure [1]. For patients with suspected injury of the descending aorta or life-threatening esophagus–aorta fistula, surgical management is commonly recommended. In previous reports, an SBT has been used to control the arterial hemorrhage before unavoidable surgery [2,3]. In our patient, the inflating gastric balloon was not used as a preoperative intervention, but was effectively applied for local compression hemostasis immediately after an endoscopic procedure. Tailored adjustment of compression and its duration was important for successful treatment. This combined strategy is minimally invasive, feasible, and safe, and could provide an alternative approach to surgical treatment for patients at high risk. Further research is necessary to weigh the clinical benefits against the potential complications of this strategy.

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Competing interests: None

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