

Closure of a persistent esophagopleural fistula using an over-the-scope clipping device

Esophagopleural fistula (EPF) is considered to be a rare condition, usually occurring after pneumonectomy. When it does occur, it is accompanied by significant morbidity and the associated mortality is high [1].

We describe the case of a 44-year-old man with chronic active hepatitis B complicated by cirrhosis. While awaiting orthotopic liver transplantation, the patient had an esophageal variceal hemorrhage and underwent several sessions of variceal sclerotherapy. Orthotopic liver transplantation 2 months after the sclerotherapy treatment was successful, but a further 2 months later the patient developed a refractory empyema with continuous pleural drainage. Pulmonary malignancy and infectious causes were ruled out by percutaneous drainage with cytologic evaluation and culture of the pleural effusion. Cultures and polymerase chain reaction assay for tuberculosis in the pleural fluid were also negative. Chest CT suggested the presence of an EPF (● Fig. 1). Upper endoscopy was performed for further evaluation and revealed a 5-mm fistula orifice in the mid-esophagus. The esophageal mucosa surrounding the fistula appeared scarred and fibrotic.

After consultation with the transplant surgical service, we performed upper endoscopy and used a single 10-mm over-the-scope clip (OTSC; Ovesco Endoscopy AG, Tübingen, Germany) to close the fistula (● Fig. 2). The clip was of the “atraumatic type” with blunt teeth (● Fig. 3). The fistula was closed with complete cessation of pleural drainage. Insertion of a removable esophageal stent was not considered due to the expected high risk of stent migration, and 2 weeks after the OTSC placement, the pleural drainage recurred. Chest radiography showed no evidence of the presence of a clip in the mid-esophagus, so a second therapeutic upper endoscopy was performed and an Ovesco 10-mm “spiked-teeth” clip was placed, successfully and permanently closing the EPF (● Fig. 4), with resolution of the empyema. Barium esophagogram 3 months later was normal without any evidence of clip or extravasation of contrast. The patient continues to do well now, 5 months after closure of the fistula.

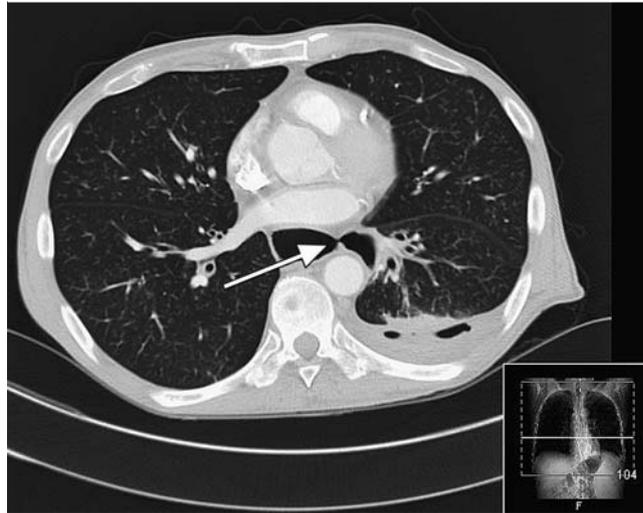


Fig. 1 Computed tomogram showing esophagopleural fistula in a 44-year-old man.

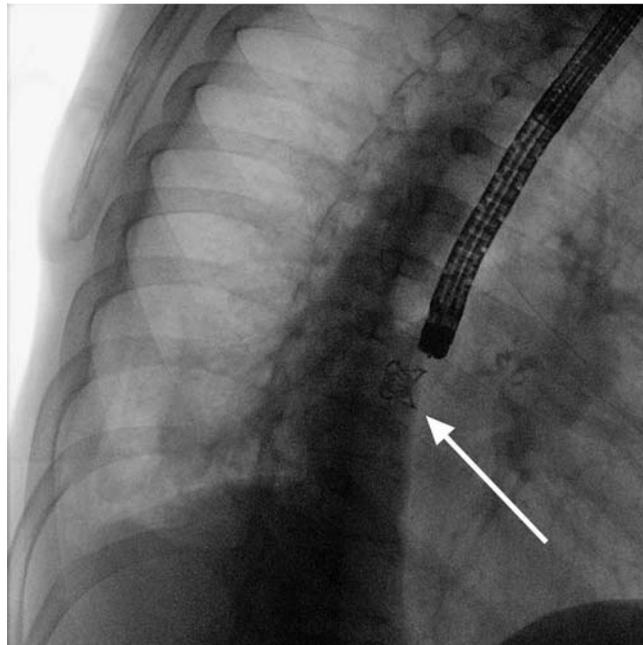


Fig. 2 Over-the-scope deployment of a clip.



Fig. 3 “Atraumatic” type of over-the-scope clip, with blunt teeth.



Fig. 4 Barium esophagogram shows no signs of leakage after placement of a spiked-teeth clip (arrow).

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EPF is considered to be a rare but often fatal complication. The vast majority of EPFs develop after pneumonectomy. To the best of our knowledge, only three cases of post-sclerotherapy EPF have been reported; all were pediatric cases in which the EPF was treated surgically [2–4]. Small pleural effusions have been reported in up to 50% of patients who have undergone esophageal variceal sclerotherapy [5]. As perforation with fistula formation is a consequence of chemical transmural necrosis rather than mechanical injury, the manifestation of EPF is often delayed.

Only a single report has described endoscopic management of EPF, and in that case the endoscopic management was

limited primarily to insertion of an esophageal stent and endoscopic suturing [6]. We believe this to be the first reported case of EPF treated endoscopically by use of an over-the-scope clipping device. The first clip was of the blunt-teeth type so the margins of the fistula could not be grasped tightly. The second clip was of the spiked-jaws type, providing an improved ability to grasp the fibrotic esophageal mucosa. In the future, use of a large over-the-scope clipping device should be considered in cases of persistent EPF.

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Competing interests: None