Endoscopic management of an esophagopleural fistula resulting from a gunshot wound

Fig. 1 Gastrografin esophagogram 6 days after surgery to the neck for a gunshot wound showing no evidence of an esophageal leak.

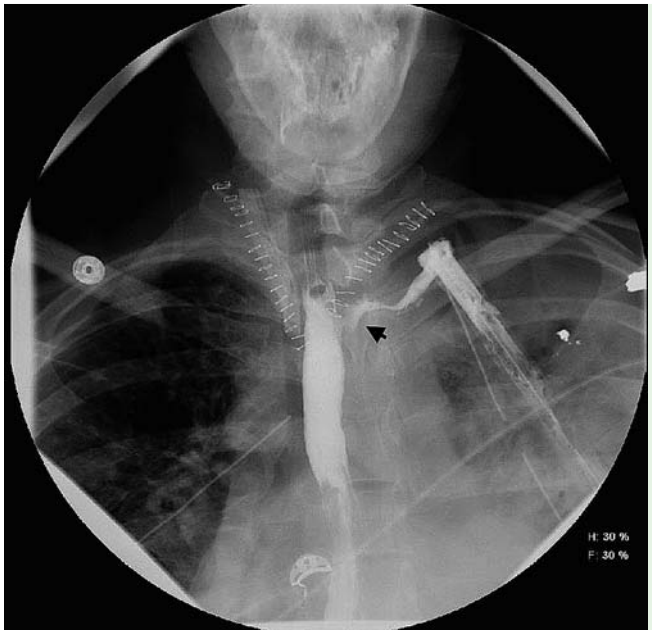

Fig. 2 Barium swallow performed the following day showing a well formed fistulous track from the esophagus to the left pleural space (arrow).

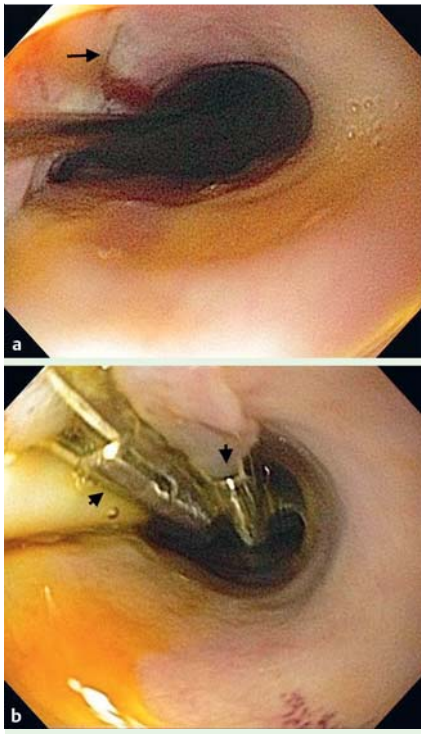

Fig. 3 Views during esophagoscopy showing: **a** the opening of the esophageal fistula (arrow); **b** endoclips placed to close the esophageal fistula (arrows).

A 36-year-old man presented to the emergency department with a gunshot injury to his neck. He was intubated and taken to the operating room. As his neck was being dissected, an air leak in the trachea, indicative of a direct injury from the gunshot wound, was detected. This was repaired successfully. No damage to the esophagus was seen during an intraoperative esophagoscopy.

A Gastrografin esophagogram was done on the sixth postoperative day, before the patient recommenced oral intake, and did not show any esophageal leak (**Fig. 1**). However, within 1 day of his restarting oral intake, the patient developed a new onset leukocytosis. A barium swallow on the seventh postoperative day showed an esophageal fistula draining into the left pleural space (**Fig. 2**). This fistulous track was not seen on the preoperative esophagoscopy and it most likely developed postoperatively.

The fistulous track was well formed but it was considered to be very likely to close with nonoperative management. Therefore, an upper gastrointestinal endoscopy was performed which showed an 8-mm esophageal fistula, 17 cm from the incisors, that was seen as soon as the upper esophageal sphincter was traversed with the endoscope (**Fig. 3a**). The fistula was closed using three endoscopic Hemoclips (Wilson-Cook Medical Inc., Winston-Salem, North Carolina, USA) (**Fig. 3b**). A follow-up barium swallow 3 days later showed complete closure of the esophagopleural fistula (**Fig. 4**). The patient tolerated his oral diet well and he was discharged 12 days after the endoscopic closure.

This case illustrates some unique clinical features. First, the fistula formation was thought to be secondary to thermal injury to the esophagus from the bullet frag-

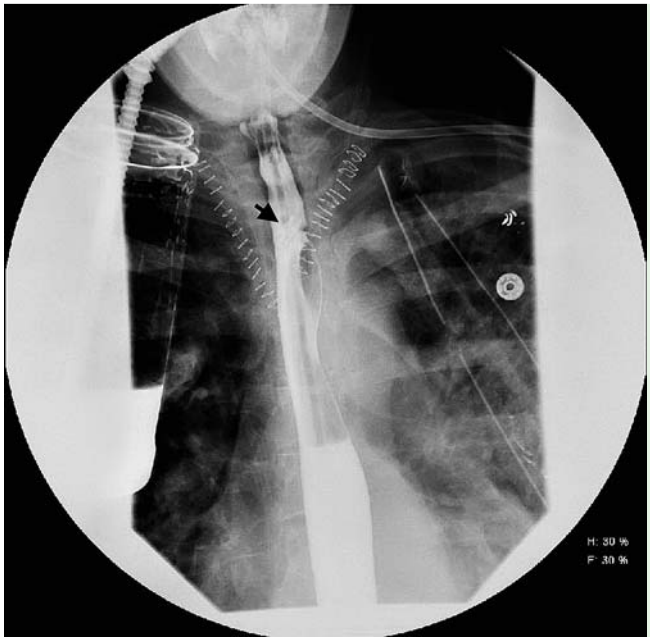

Fig. 4 Barium swallow 3 days after the endoscopic closure of the fistula showing no esophageal leak and the endoclips visible within the esophageal lumen (arrow).

ments. The Gastrografin study failed to demonstrate the presence of the fistulous track, although Gastrografin studies are associated with a false-negative rate of up to 22% for the detection of traumatic esophageal fistulas [1]. Finally, the fistula size was small, which therefore permitted closure with endoclips. In conclusion, esophageal fistulas can form late after a traumatic injury in the surrounding area and endoscopic closure of such fistulas is possible in carefully selected patients using commonly available endoclips.

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Competing interests: None

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