

Trauma endoscopy: endoscopic closure of an esophageal perforation caused by knife stabbing



► **Fig. 1** Emergency computed tomography scan showing free air at the level of the larynx.

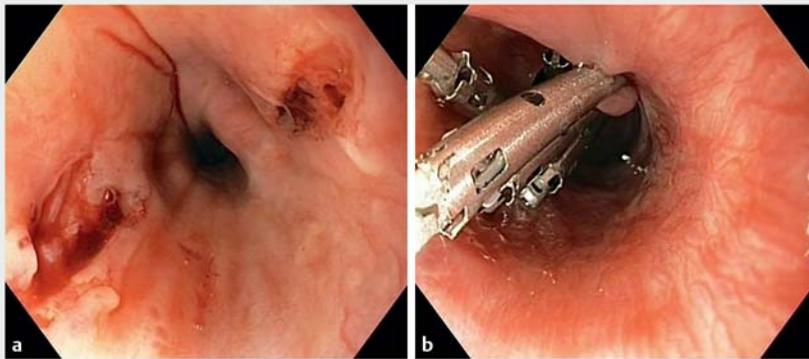
A young woman was admitted to the emergency room after being assaulted with a knife, resulting in a deep cervical wound. On examination, she had subcutaneous emphysema in the neck and air leakage from her trachea. Because of a compromised airway, she underwent endotracheal intubation. Computed tomography angiography (CTA) revealed a

tracheal perforation, but no clear esophageal defect (► **Fig. 1**).

At surgical exploration, the trachea appeared to be perforated on both the anterior and posterior walls. The trachea was surgically repaired and a right-sided tension pneumothorax was treated with a chest tube. Because of the injury to the posterior wall of the trachea, there was a suspicion of esophageal perforation, which was not visible during surgical exploration. To explore the esophagus further, an additional surgical exposure would have been needed and therefore a diagnostic gastroscopy was performed during surgery.

Gastroscopy showed both longitudinal entry and exit wounds in the proximal esophagus (► **Fig. 2a**). It was decided that endoscopic closure should be feasible and subsequently, both perforations were closed using a total of six standard through-the-scope clips (Resolution 360 Clip Take Control; Boston Scientific, Marlborough, Massachusetts, USA) (► **Fig. 2b**; ► **Video 1**). Next day, a barium swallow was performed, which showed no leakage of contrast (► **Fig. 3**). After further recovery, the patient was discharged in good clinical condition. At follow-up after 3 months, the patient had made a good recovery and a repeat barium swallow showed no leakage of contrast, with two clips still in place.

To our knowledge, this is the first case describing endoscopic closure of a stab wound. Endoscopic closures are frequently performed for iatrogenic perforations or perforations caused by foreign objects. Over-the-scope clips, through-the-scope clips, and covered self-expandable metal stents are frequently used. These developments have resulted in a change in the treatment paradigm from major surgery to endoscopic closure and conservative treatment [1,2].

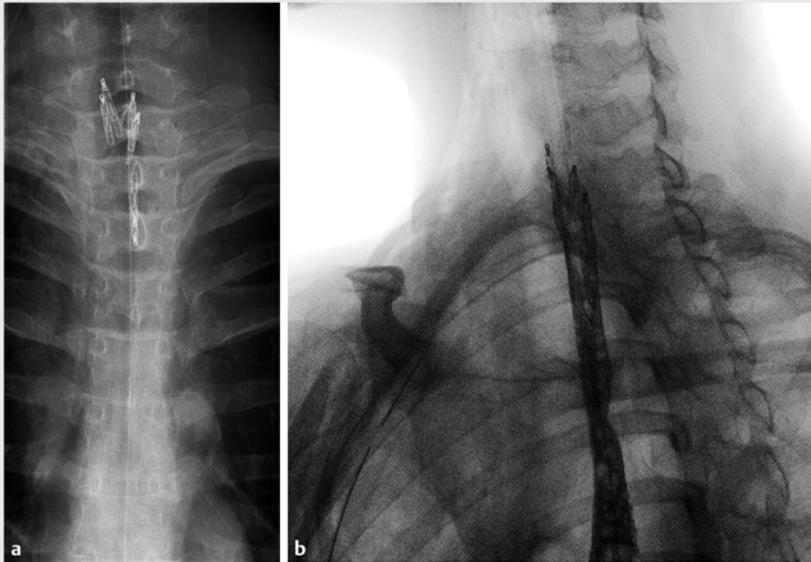


► **Fig. 2** Endoscopic views showing: **a** both the entry and exit wounds; **b** the two wounds after endoscopic closure with six clips.



► **Video 1** Endoscopic closure of a traumatic esophageal perforation caused by knife stabbing. First the exit wound is closed with two through-the-scope clips, then the contralateral entry wound is closed by four clips.

Endoscopy_UCTN_Code_TTT_1AO_2AI



► **Fig. 3** Radiological images showing: **a** the six endoscopic clips in position 1 day after closure; **b** the passage of oral contrast without leakage.

References

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- [2] Sudarshan M, Elharram M, Spicer J et al. Management of esophageal perforation in the endoscopic era: Is operative repair still relevant? *Surgery* 2016; 160: 1104–1110

Bibliography

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Competing interests

None

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