

Endoscopic closure of a 6-cm long esophageal defect with tracheoesophageal fistula

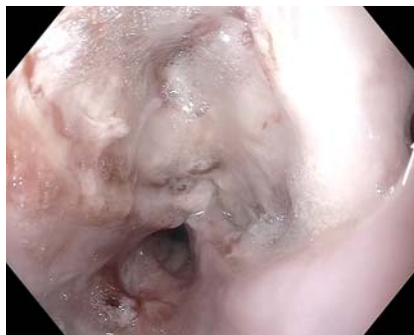
A 68-year-old man with metastatic esophageal adenocarcinoma previously treated with esophagectomy and chemoradiation presented with new-onset dysphagia and cough. A recent good response to chemotherapy resulted in shrinkage of a 7-cm mediastinal metastasis. Chest computed tomography revealed a large esophageal defect. A barium swallow confirmed the presence of a tracheoesophageal fistula (TEF). Upper endoscopy showed a 6-cm defect on the anterior esophageal wall with a clear opening into the trachea (► **Fig. 1**, ► **Video 1**).

An upper gastroscope was advanced to the esophagojejunostomy. A 0.035-inch guidewire was passed through the scope and coiled within the jejunum. The scope was withdrawn while maintaining the position of the wire and a double-channel endoscope was fitted with an endoscopic suturing device. The defect was closed using two running sutures, with an average of 5 bites per suture. Immediately after suturing, the patient's capnography improved significantly. Subsequently, a 23 mm × 12 cm fully covered self-expandable metal stent was successfully placed, with the proximal flange positioned at 2 cm above the esophageal defect and just distal to the upper esophageal sphincter (► **Fig. 2**). The esophageal stent was secured with two sutures (► **Fig. 3**). A subsequent esophagram showed no extravasation of contrast (► **Fig. 4**). The patient tolerated an oral diet and was discharged home in a good condition.

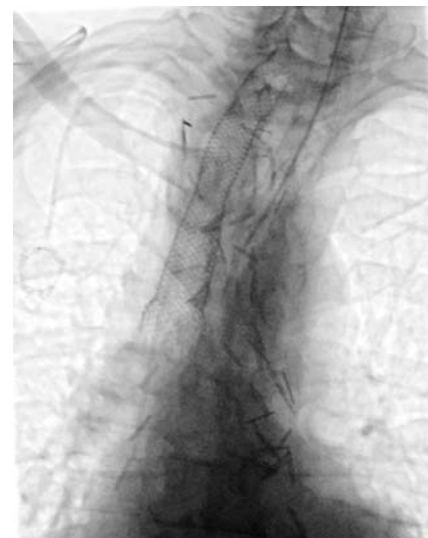
TEF is a rare yet life-threatening condition that develops in up to 5% of patients with esophageal malignancy [1]. Management is challenging, and closure often requires a multidisciplinary approach and is associated with high rates of recurrence [2]. Surgery is associated with extremely high morbidity, and endoscopic therapy has been proposed as a



► **Video 1** Successful closure of a large tracheoesophageal fistula using combined modalities of endoscopic suturing and metal stent placement.



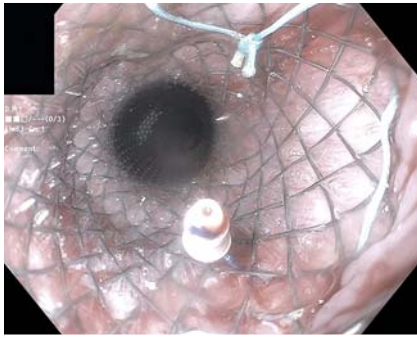
► **Fig. 1** Endoscopic view of a large esophageal defect and tracheoesophageal fistula (arrow) in the upper esophagus.



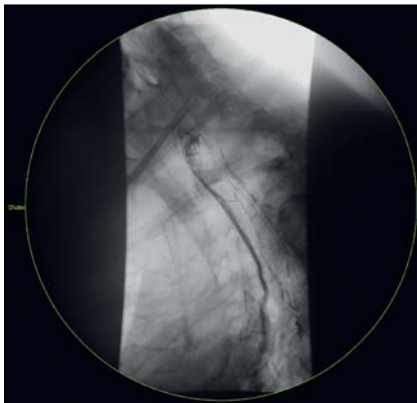
► **Fig. 2** A fully covered self-expandable metal stent was successfully deployed traversing the defect.

minimally invasive and relatively safe modality that improves the quality of life in patients with TEF [3,4]. The current case demonstrates that very large esophageal defects and fistulae can be successfully closed using a multi-modality approach of endoscopic suturing and stent placement.

Endoscopy_UCTN_Code_TTT_1AO_2AI



► **Fig. 3** The proximal flange of the stent was sutured to the esophageal wall to prevent stent migration.



► **Fig. 4** Barium swallow test showing no extravasation of contrast confirming complete closure.

Competing interests

Dr. Sharaiha is a consultant for Boston Scientific, Olympus, Apollo, and Medtronic. Dr. Carr-Locke is a consultant for Steris, Telemed, Boston Scientific, Valentx, Ergogrip, and Screwire.

The authors

Danny Issa, Qais Dawod, Marwan Azzam, Kartik Sampath, David Carr-Locke, Reem Z. Sharaiha

Division of Gastroenterology and Hepatology, New York Presbyterian Hospital/Weill Cornell Medical Center, New York, New York, United States

Corresponding author

Reem Z. Sharaiha, MD

Division of Gastroenterology and Hepatology Department of Medicine, Weill Cornell Medicine, 1305 York Avenue, 4th Floor, New York, New York 10021, United States
 Fax: +1-646-962-0110
 rzs9001@med.cornell.edu

References

- [1] Bartels HE, Stein HJ, Siewert JR. Tracheobronchial lesions following oesophagectomy: prevalence, predisposing factors and outcome. *Br J Surg* 1998; 85: 403–406
- [2] Ramai D, Bivona A, Latson W et al. Endoscopic management of tracheoesophageal fistulas. *Ann Gastroenterol* 2019; 32: 24–29
- [3] Kovesi T, Rubin S. Long-term complications of congenital esophageal atresia and/or tracheoesophageal fistula. *Chest* 2004; 126: 915–925
- [4] Balazs A, Kupcsulik PK, Galambos Z. Esophagorespiratory fistulas of tumorous origin. Non-operative management of 264 cases in a 20-year period. *Eur J Cardiothorac Surg* 2008; 34: 1103–1107

Bibliography

DOI <https://doi.org/10.1055/a-0885-9494>
 Published online: 23.5.2019
Endoscopy 2019; 51: E286–E287
 © Georg Thieme Verlag KG
 Stuttgart · New York
 ISSN 0013-726X

ENDOSCOPY E-VIDEOS

<https://eref.thieme.de/e-videos>



Endoscopy E-Videos is a free access online section, reporting on interesting cases and new techniques in gastroenterological endoscopy. All papers include a high quality video and all contributions are freely accessible online.

This section has its own submission website at <https://mc.manuscriptcentral.com/e-videos>