Successful closure of a rare tracheogastroesophageal fistula with an endoloop and endoclips

Tracheoesophageal fistula after esophagectomy is a rare complication with a high mortality rate. Conventional treatment of tracheoesophageal fistulas includes surgical re-exploration, or endoscopic and bronchoscopic techniques with stent implantation or fibrin glue application [1, 2]. Here we report the successful treatment of a tracheogastroesophageal fistula with an endoloop-aided purse-string suture.

A 51-year-old man underwent thoracoscopic esophagectomy with gastric reconstruction for esophageal carcinoma. He subsequently developed symptoms of choking, especially after intake of liquid. Right lateral pneumonia was found 3 months later on computed tomography (CT) scanning, and esophagogastroduodenoscopy (EGD) revealed a tracheogastroesophageal fistula around the esophagogastic anastomosis at the fundus of the stomach, measuring about 20 × 16 mm (▶ Fig. 1a). A diagnosis of tracheogastroesophageal fistula was made.

We decided to perform a purse-string suture using an endoloop and endoclips to close the fistula. The endoloop (HX-400U-30; Olympus Medical Co.) was placed around the fistula orifice and anchored with nine endoclips (R-C/D-26-165/195C; Micro-Tech [Nanjing] Co. Ltd.) (▶ Fig. 1b). The endoloop was then tightened to close the defect (▶ Fig. 1c). A tiny leak was still seen after completion of the purse-string suture because of high tension. Subsequently, three additional endoclips were applied to completely close the tiny leak (▶ Fig. 1d). Eventually, the fistula was successfully closed and there were no bubbles when the wound was flushed (▶ Video1). After the endoscopic closure, no further symptoms of choking occurred during his period of hospitalization. EGD 3 months later showed that the fistula had completely healed (▶ Fig. 2).

The method of purse-string suture with endoloop and endoclips has been previously reported for closure of a large Mallory–Weiss tear and a large gastric defect after complex endoscopic submucosal dissection [3, 4]. In our case, the method was proposed as a treatment option for tracheogastroesophageal fistula following esophagectomy to avoid surgical re-intervention. To our knowledge, this is the first report on the successful endoscopic closure of a tracheogastroesophageal fistula with an endoloop and endoclips.

Endoscopy_UCTN_Code_TTT_1AO_2AI

▶ Fig.1 The procedure of purse-string suture for a tracheogastroesophageal fistula. a View of the tracheal fistula located in the gastric fundus and the fistula connecting the esophagus and stomach. b An endoloop was placed around the fistula orifice and anchored with nine endoclips. c The endoloop was then tightened to close the defect. d Three more endoclips were used to close the tiny leak.

▶ Video1 The fistula was completely healed and had disappeared 3 months after the endoscopic closure.
Competing interests
None

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Acknowledgments

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DOI https://doi.org/10.1055/a-0917-6690
Published online: 2019
Endoscopy
© Georg Thieme Verlag KG
Stuttgart · New York
ISSN 0013-726X