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 esophagogastric 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.

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Competing interests
None

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Video 1 Successful closure of a rare tracheogastroesophageal fistula with endoloop and endoclips.