VACStent: a new option for endoscopic vacuum therapy in patients with esophageal anastomotic leaks after upper gastrointestinal surgery

Esophageal anastomotic leaks remain a life-threatening postoperative complication of upper gastrointestinal surgery. In Germany, self-expandable metal stents (SEMS) and endoscopic vacuum therapy (EVT) are established endoscopic treatment options [1, 2], but no evidence points to the superiority of either of these [3]. Consequently, new approaches aim to combine both procedures [4, 5]. One available medical device that combines EVT (sealing and drainage) with SEMS treatment (sealing and food passage) is a fully covered SEMS coated with a polyurethane foam (VACStent; Möller Medical GmbH, Fulda, Germany) (Fig. 1). To our knowledge, this is the first report on using a hybrid SEMS for treating an esophageal anastomotic leak (Video 1).

A 61-year-old man with an esophageal anastomotic leak (Fig. 2) had undergone previous total gastrectomy for a signet cell carcinoma of the stomach. On the 16th postoperative day (POD), the patient was admitted to our hospital in a septic condition, having been treated unsuccessfully with an over-the-scope clip (Ovesco Endoscopy AG, Tübingen, Germany). We performed an endoscopy (POD 16) and discovered a semicircular anastomotic leak of the esophagojejunal anastomosis with an abscess cavity. We removed the clip and applied a VACStent (125 mmHg negative pressure) to treat the leak. A computed tomography scan with oral contrast (Fig. 3) confirmed sealing of the leak so that oral intake of fluids was possible. The following endoscopy (POD 18) demonstrated a healing tendency; consequently, we placed a second VACStent. After VACStent removal (POD 22), we observed a sealed leak with a small and encapsulated wound cavity (Fig. 4). A digestive swallowing test confirmed the sealing. Although the postoperative course was delayed because of pulmonary complications, the patient was discharged (POD 39) (Fig. 5) with full oral intake and no clinical signs of a residual anastomotic leak.

Endoscopy_UCTN_Code_TTT_1AO_2AI

Competing interests

None

Fig. 1 VACStent: a fully covered, self-expandable metal stent (dimension 30 × 15 × 70 mm) coated with polyurethane foam and connected to a tube (blue).

Fig. 2 View of the esophagojejunal anastomosis: jejunum (blue asterisk) and anastomotic leak area (yellow arrow).

Fig. 3 Axial computed tomography with oral contrast showed complete sealing of the leak by the VACStent (yellow arrow) with a thoracic drain (asterisk).

Fig. 4 The sealed leak of the esophagojejunal anastomosis: blind loop jejunum (black asterisk), jejunum (yellow asterisk), and granulation of the wound cavity (red asterisk).

Fig. 5 Follow-up endoscopy 17 days after VACStent explantation.
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DOI https://doi.org/10.1055/a-1047-0244
Published online: 2019
Endoscopy
© Georg Thieme Verlag KG
Stuttgart · New York
ISSN 0013-726X

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Video 1 Successful treatment of an esophageal anastomotic leak after gastrectomy with a novel hybrid stent.