Transabdominal esophago-cutaneous fistula closure with endoscopic negative pressure therapy using a thin open-pore film drain in a pull-through technique

A 77-year-old patient underwent gastrectomy for AEG III (G3, pT3, pN0). The postoperative course was complicated by insufficiency of the esophageal-jejunal anastomosis after gastrectomy. Endoscopic treatments with endoscopic negative pressure therapy (ENPT), clips, and stenting did not result in a final defect closure. A long transabdominal esophago-cutaneous fistula persisted. The patient was transferred to us 4 weeks after surgery, with the surgical drain and a stent still in place.

The stent was removed. The surgical drain was seen through the anastomotic defect, which was approximately 1 cm in diameter. With a small endoscope, a 30-cm transabdominal fistula channel was examined from the anastomotic defect to the cutaneous opening (Fig. 1). The surgical drain was removed. Using the endoscope, an open-pore film drainage (OFD) with a 25-cm open-pore film drainage element in the middle section was placed through the fistula tract from the internal defect at the esophago-jejunal anastomosis after gastrectomy to the external cutaneous fistula opening. The blue-colored surgical drain is still in situ.

The OFD used for the pull-through method. In this type of drainage, the open-pore drainage element is placed with the middle section of the drain. It consists of a very thin, open-pored double-layered film with the middle section of the drain (D). The OFD is 6 mm in diameter and the drain element was 25 cm long. The distal end of the OFD is blocked with a knot or a clamp. Vacuum is applied at the oral end (VAC).
was closed with a clamp. The oral end was led out nasally and connected to an electronic pump (ACTIV.A.C; KCI, San Antonio, Texas, USA). Continuous negative pressure of −125 mmHg was applied. Secretion through the fistula stopped immediately. Fluoroscopy confirmed adequate fistula closure (Fig. 4).

After 4 days, the OFD was exchanged for a thinner OFD (4 mm in diameter, 25 cm drainage element) again using the pull-through technique. The collapsed fistula channel was completely lined with a typical regular suction pattern along its entire length (Fig. 5).

After a total of 10 days ENPT ended. The patient was allowed to drink water. On the following day, radiological contrast examination confirmed fistula closure and patient started with a soft diet. Endoscopy showed the healed leak without stenosis during further follow-up.

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Competing interests

Gunnar Loske is consultant of Lohmann & Rauscher GmbH & Co.KG. Johannes Müller, Lilith Boon Kyung Braun, Dalia Majert, Burkhard Riefel, Martin Zeile and Christian Theodor Müller declare no conflict of interest.

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