Transgastric endoscopic vacuum therapy with a new open-pore film drainage device in a case of infective pancreatic necrosis

Infected pancreatic necrosis needs to be drained; nowadays this is mostly done by endoscopic means. As yet, few cases of transgastric endoscopic vacuum therapy (EVT) have been reported [1–3]. This is the first case to be reported in which a new open-pore film drainage (OFD) device was used.

A 70-year-old man became septic because of infected pancreatic necrosis. Initially the cyst was drained with endoscopic ultrasound (EUS)-guided transgastric drainage and transnasal cavity rinsing. Endoscopic debridement was performed. After a treatment period of 16 days, a cavity of 10 cm in diameter that was almost free of necrosis remained (Fig. 1).

Subsequently, drainage treatment was continued with transgastric EVT. We used a new OFD device [4–5]. The distal end of a drainage tube (Ventrol; 12 Fr × 120 cm; Covidien Argyle, Dublin, Ireland) was wrapped in a very thin open-pore double-layered drainage film (Suprasorb CNP drainage film; Lohmann & Rauscher International GmbH & Co. KG, Rengsdorf, Germany) that was secured with a suture thread (Fig. 2; Video 1). The OFD device was inserted transnasally into the stomach (Fig. 3). For the placement procedure we used a standard gastroscope. The tip of the drainage tube was grasped with a forceps and pushed forward into the retrogastric cavity under endoscopic view (Fig. 4a). The small diameter of the OFD device allowed easy transgastric placement without the need for dilation of the gastric opening (Fig. 4b; Video 1).

After application of a vacuum with an electronic vacuum device (KCI V.A.C. Freedom: KCI USA Inc., San Antonio, Texas, USA; setting: −75 mmHg, continuous, intensity 10) the cyst shrank immediately around the OFD device. Liquids were
drained in an intraluminal direction and the transmural defect was closed simultaneously. The total treatment period of EVT was 10 days, during which time oral intake of fluids and soft diet was possible. The OFD device was changed twice on days 3 and 7, with the OFD device being removed by gently pulling the tube and a thin nasal gastroscope being used for transgastric endoscopy. Even at the first OFD device change on day 3, the cavity had already reduced to a small canal and pimpled suction patterns were seen on the tissues (Fig. 5).

Follow-up endoscopies, after the 10 days of EVT had been completed, showed small amounts of secretion at the gastric opening for the next few days. A final endoscopy and EUS 60 days after the end of treatment showed complete healing with the cavity no longer visible.

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Video 1

Endoscopic view of the large retrogastric cavity; construction of the open-pore drainage (OFD) device is demonstrated; endoscopic views showing the placement of the OFD device into the cavity and the appearances after a course of endoscopic vacuum therapy (EVT) and at follow-up 60 days later.

Fig. 5 Transgastric view of the cavity after 3 days of vacuum therapy, following removal of the open-pore film drainage (OFD) device, showing a shrunken cavity consisting of a small canal with the typical pimpled pattern (pP) visible, providing evidence of effective vacuum suction.

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