

Endoscopic ultrasound-guided drainage and necrosectomy of walled-off pancreatic necrosis using a metal stent with an electrocautery-enhanced delivery system and hydrogen peroxide



Fig. 1 A novel through-the-scope, fully covered, self-expanding metal stent (FCSEMS) delivery system with an electrocautery blade at the distal tip. The Hot AXIOS system allows a cystenteric fistula to be created and the FCSEMS (bottom right) to be delivered without the need for device exchange. (Image courtesy of Xlumena Inc., Mountain View, California, USA.)



Fig. 2 Endoscopic ultrasound (EUS) image of the distal flange of the self-expanding metal stent being released under EUS guidance.

Direct endoscopic necrosectomy of walled-off pancreatic necrosis (WOPN) has recently been reported to have comparable success rates to surgery, but with lower morbidity and mortality [1,2]. The procedure is, however, time consuming and requires multiple device exchanges [3], which may increase the risk of complications.

A novel, dedicated device, the Hot AXIOS (Xlumena Inc., Mountain View, California, USA) (► Fig. 1), has recently become available. This consists of a large-diameter, fully covered self-expanding metal stent (FCSEMS) with antimigration flanges, which is mounted on a 10.8-Fr delivery system with an electrocautery blade at its distal tip.

We performed endoscopic ultrasound (EUS)-guided drainage of a WOPN (median size 17 cm, range 10–20 cm) in four patients using the Hot AXIOS to directly create a transmural fistula, enter the

cavity, and place a 15-mm×10-mm FCSEMS, which was completely deployed under real-time EUS guidance (► Fig. 2).

A standard gastroscope was then used to perform balloon dilation of the lumen of the FCSEMS up to 15 mm to allow entry into the cavity and perform direct endoscopic necrosectomy. Preliminary data have suggested that irrigation of the necrotic content of areas of WOPN with hydrogen peroxide (H₂O₂) can facilitate necrosectomy [4,5], so we injected 40–60 mL hydrogen peroxide (3%) into the cavity at the beginning and at the end of each session of direct endoscopic necrosectomy. We then used extraction nets, baskets, and forceful irrigation to clean the necrotic material (► Video 1).

The four patients underwent a median of five endoscopy sessions (range 4–6). A pneumoperitoneum occurred in one patient and was treated conservatively. The FCSEMSs were easily removed in three patients. In the remaining patient, who did not present for follow-up until 138 days after insertion of the FCSEMS, over-

Video 1

An area of walled-off pancreatic necrosis (WOPN) is drained using the Hot AXIOS delivery system under endoscopic ultrasound and endoscopic guidance only. A standard gastroscope is then inserted into the cavity of the WOPN and direct endoscopic necrosectomy is performed. Finally, the stent is removed using an endoscopic snare.

growth of normal mucosa had occurred and a decision was made to leave the stent permanently in place.

No recurrence of WOPN has been observed after a mean follow-up of 8.5 months (range 5–10 months).

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Competing interests: Dr. Alberto Larghi is a consultant for Xlumena Inc., Mountain View, California.

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