Endoscopic ultrasound-guided drainage and necrosectomy of walled-off pancreatic necrosis using a metal stent with an electrosurgery-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.)

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 gastroscopy 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, overgrowth 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).

Endoscopy_UCTN_Code_TTT_1AS_2AD

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

Domenico Galasso1, Todd H. Baron2, Fabia Attili3, Khaled Zachariah1, Guido Costamagna1, Alberto Larghi1
1 Digestive Endoscopic Unit, Catholic University, Rome, Italy
2 Division of Gastroenterology and Hepatology, University of North Carolina School of Medicine, Chapel Hill, North Carolina, USA

References
2 van Santvoort HC, Besselink MG, Bakker OJ et al. A step-up approach or open necrosectomy for necrotizing pancreatitis. NEJM 2010; 362: 1491–1502

Bibliography
DOI http://dx.doi.org/10.1055/s-0034-1391244
Endoscopy 2015; 47: E68
© Georg Thieme Verlag KG Stuttgart · New York
ISSN 0013-726X

Corresponding author
Alberto Larghi, MD, PhD
Digestive Endoscopy Unit
Catholic University
Largo A. Gemelli 8
Rome 00168
Italy
Fax: +39-06-30157220
albertolarghi@yahoo.it