To-and-fro balloon technique for deployment of a lumen-apposing metal stent in highly solid walled-off necrosis of the pancreas

Lumen-apposing metal stents (LAMSs) have revolutionized endoscopic treatment of walled-off necrosis (WON) by allowing for effective drainage and subsequent endoscopic necrosectomy [1, 2]. However, it may be technically challenging to deploy a LAMS for a WON with little fluid content [3], which potentially inhibits insertion of the delivery and expansion of the distal stent flange [4].

A 38-year-old woman was referred to our department for endoscopic management of an infected WON due to biliary pancreatitis (Fig. 1). Although endoscopic ultrasound (EUS)-guided drainage was performed in the previous hospital, the infection did not subside owing to incomplete drainage; therefore, we decided to place a LAMS with a cautery-enhanced delivery system (HOT AXIOS; Boston Scientific Japan, Tokyo, Japan). EUS revealed a WON with few fluid components (Fig. 2a), and we decided to perform a wire-guided placement of the LAMS. We punctured the WON with a 19-gauge needle (EZshot3; Olympus Medical, Tokyo, Japan) via the transgastric approach and inserted the stent delivery over a 0.025-inch guidewire (VisiGlide2; Olympus). Owing to the limited space due to the highly solid cavity, the delivery could not be advanced (Fig. 2b). Therefore, we withdrew the delivery and inserted an 8-mm balloon dilator (REN; Kaneka Medical, Tokyo, Japan) into the WON cavity. We attempted to open up enough space for the LAMS by moving the dilated balloon to and fro (Fig. 3a). We successfully deployed the LAMS with adequate expansion of the flanges (Fig. 3b). On the second day of the procedure, radiograph delineated full expansion of the flanges. After subsequent sessions of endoscopic necrosectomy via the LAMS, complete resolution of the WON was achieved.

Inadequate expansion of the LAMS flanges may result in adverse events including stent migration and bleeding [5]. The to-and-fro balloon technique presented here (Video 1) would further expand the indications of the LAMS for a symptomatic WON.

**Competing interests**

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The authors

Tatsuya Sato1*, Tomotaka Saito1*, Yousuke Nakai1,2*, Mitsuhiro Fujishiro1
1 Department of Gastroenterology, Graduate School of Medicine, The University of Tokyo, Tokyo, Japan
2 Department of Endoscopy and Endoscopic Surgery, The University of Tokyo Hospital, Tokyo, Japan

Corresponding author

Yousuke Nakai, MD
Department of Endoscopy and Endoscopic Surgery, The University of Tokyo Hospital, 7-3-1 Hongo, Bunkyo-ku, Tokyo 113-8655, Japan
Fax: +81-3-3814-0021
ynakai-tky@umin.ac.jp

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Video 1 The to-and-fro balloon technique for deployment of a lumen-apposing metal stent in a highly solid walled-off necrosis.

* These authors are members of the WONDERFUL (WON and peripancreatic fluid collection) study group in Japan.