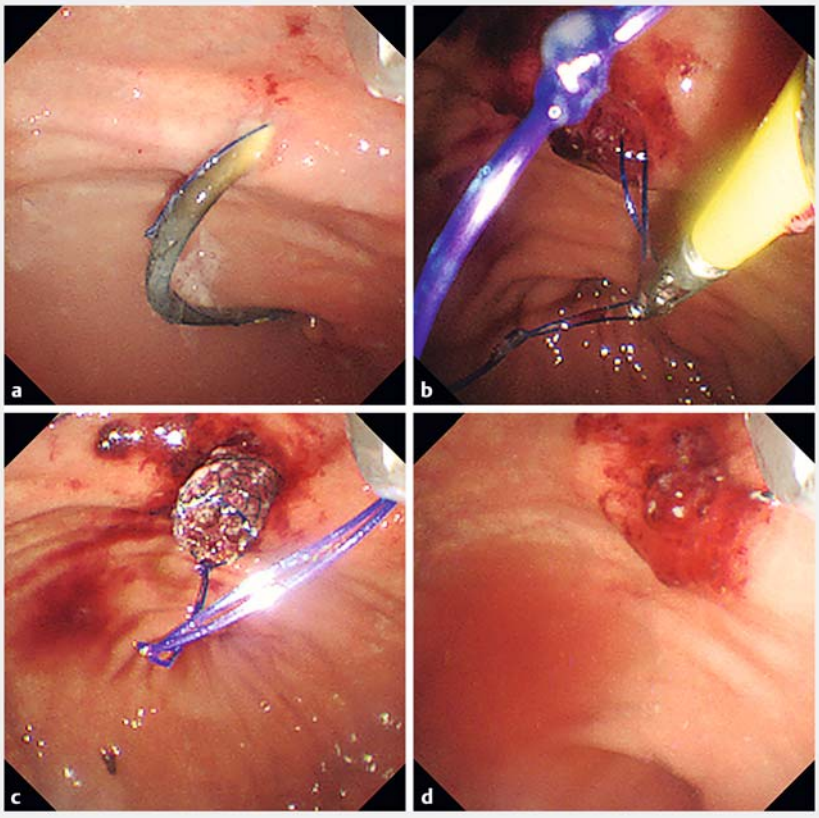
Removing a metal stent using a string following endoscopic ultrasound-guided antegrade placement for pancreaticojejunostomy stricture

Temporary stent placement is effective for symptomatic pancreaticojejunostomy stricture (PJS). An endoscopic ultrasound (EUS)-guided approach is a useful salvage technique when balloon enteroscopy-assisted endoscopic retrograde cholangiopancreatography (ERCP) is unsuccessful [1 – 4]. However, plastic stents are sometimes not sufficient to improve the stricture. Although covered self-expandable metal stents (CSEMS) may be useful for severe strictures, their removal after EUS-guided antegrade placement is challenging. Here, we report a successful case of removal of antegrade-placed CSEMS using a string via EUS-guided pancreaticogastrostomy.

A man in his 70 s developed acute recurrent pancreatitis due to PJS. As balloon enteroscopy-assisted ERCP failed, EUS-guided antegrade placement of a CSEMS with string (BONASTENT M-Intraductal; Standard Sci Tech Inc., Seoul, Korea) [5] across the PJS, and plastic stent placement from the pancreatic duct to the stomach, were performed; the string was released into the stomach across the fistula.

At endoscopy 3 months later, a side-viewing scope was inserted to remove the stents (▶ **Fig. 1 a**). First, a guidewire was inserted into the pancreatic duct alongside the previously placed plastic stent and string. The stent was removed by grasping it with forceps through the scope, and the fistula was dilated using a dilation balloon. After removing the guidewire, the string was grasped with forceps and pulled toward the stomach (▶ **Fig. 1 b**). Subsequently, the proximal edge of the CSEMS was seen in the stomach (▶ **Fig. 1 c**). After reinsertion of the guidewire into the pancreatic duct across the CSEMS, the CSEMS was removed over the guidewire through the working channel by grasping it with a snare (▶ **Fig. 1 d**, ▶ **Video 1**). Finally, antegrade cleaning of the pancreatic duct using a retrieval balloon was performed, and complete resolution of the PJS was confirmed with pancreatogram. There were no adverse events, and no recurrence during follow-up.



▶ **Fig. 1** Endoscopic images. **a** A plastic stent and string in the stomach from the fistula. **b** After removal of the plastic stent, the string was grasped by forceps and pulled toward the stomach. **c** Subsequently, the proximal edge of the metal stent was seen in the stomach. **d** The metal stent was successfully removed by grasping it with a snare, with no adverse events.

CSEMS with a string can be removed simply through EUS-guided pancreaticogastrostomy. Antegrade placement and removal of it can be useful option for the treatment of PJS.

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Competing interests

None

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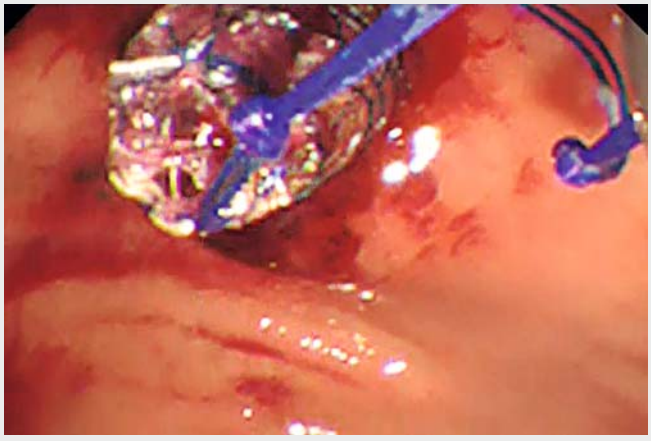

Video 1 At 3 months after endoscopic ultrasound-guided antegrade stent placement, we removed the stents. A covered self-expandable metal stent, which was placed for the pancreaticojejunostomy stricture, was successfully removed using a long string, without any adverse events.

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