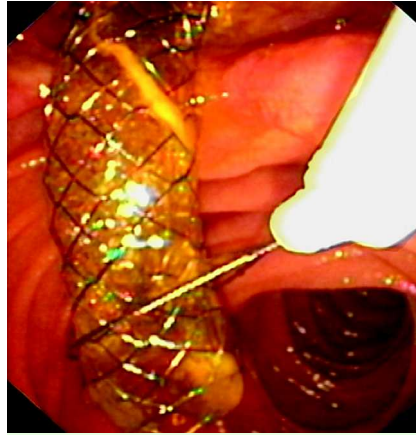


## A safe technique for removing a malpositioned covered biliary self-expandable metal stent



**Fig. 1** Malpositioned covered self-expandable metal stent (SEMS) protruding into the duodenum.



**Fig. 2** Polypectomy snare grasping the distal end of the malpositioned SEMS.



**Fig. 3** SEMS being pulled inside the pushing catheter.



**Fig. 4** Appearance after removal of the malpositioned stent and insertion of a second uncovered SEMS.

Self-expandable metal stents (SEMS) represent the preferred palliative management of malignant biliary strictures [1]. They are relatively easy to insert and provide immediate drainage of the biliary tract. Removal of a SEMS, sometimes considered necessary because of occlusion or malposition, can be technically challenging [2]. In this report, we present a safe and easy method of removing a malpositioned biliary SEMS.

A 62-year old woman presented with jaundice due to pancreatic cancer with liver metastases. As she was unfit for surgery, an uncovered 80-mm SEMS (Biliary Wallstent; Boston Scientific, Galway, Ireland) was inserted in the common bile

duct. Four months later, the patient presented with cholangitis. Endoscopic retrograde cholangiopancreatography (ERCP) was performed, and suggested tumor overgrowth within the SEMS. A second, 100-mm covered SEMS (Shim-Hanaro; MI Tech, Seoul, Korea) was inserted through the previously placed SEMS. Unfortunately, the covered SEMS was poorly positioned, with a large part of the stent protruding into the duodenum (► Fig. 1). A polypectomy snare (1.5 × 3 cm; Wilson-Cook Medical, Winston Salem, North Carolina, USA) was advanced through a regular 10-Fr pushing catheter (Cook Ireland, Limerick, Ireland), inserted through the accessory channel, and the duodenal

end of the covered SEMS was grasped (► Fig. 2). By gentle pulling on the polypectomy snare, the SEMS slowly collapsed and could be withdrawn inside the pushing catheter (► Fig. 3 and ► Video 1), which was subsequently withdrawn through the duodenoscope. Finally, an 80-mm uncovered SEMS (Wallstent) was placed within the originally inserted SEMS, this time in a good position (► Fig. 4).

Several techniques have been described for removing a biliary SEMS. Our technique for removing a malpositioned SEMS has not been described before, is relatively easy, and carries no risk of scope damage or intestinal perforation, since the wire filaments at the distal end of the SEMS are covered within the pushing catheter.

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### Video 1

Extraction of a covered biliary self-expandable metal stent, using a polypectomy snare and a pushing catheter.