

Nitinol guidewire fragmentation using the OTSC extractor device: an innovative approach for an ERCP complication

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To the editor,

Endoscopic retrograde cholangiopancreatography (ERCP) with metallic stenting provides an effective

An 86-year-old male was admitted with acute cholangitis. Past medical history was relevant for an unresectable pancreatic cancer with placement of a 60x10mm biliary fully covered self-expandable metal

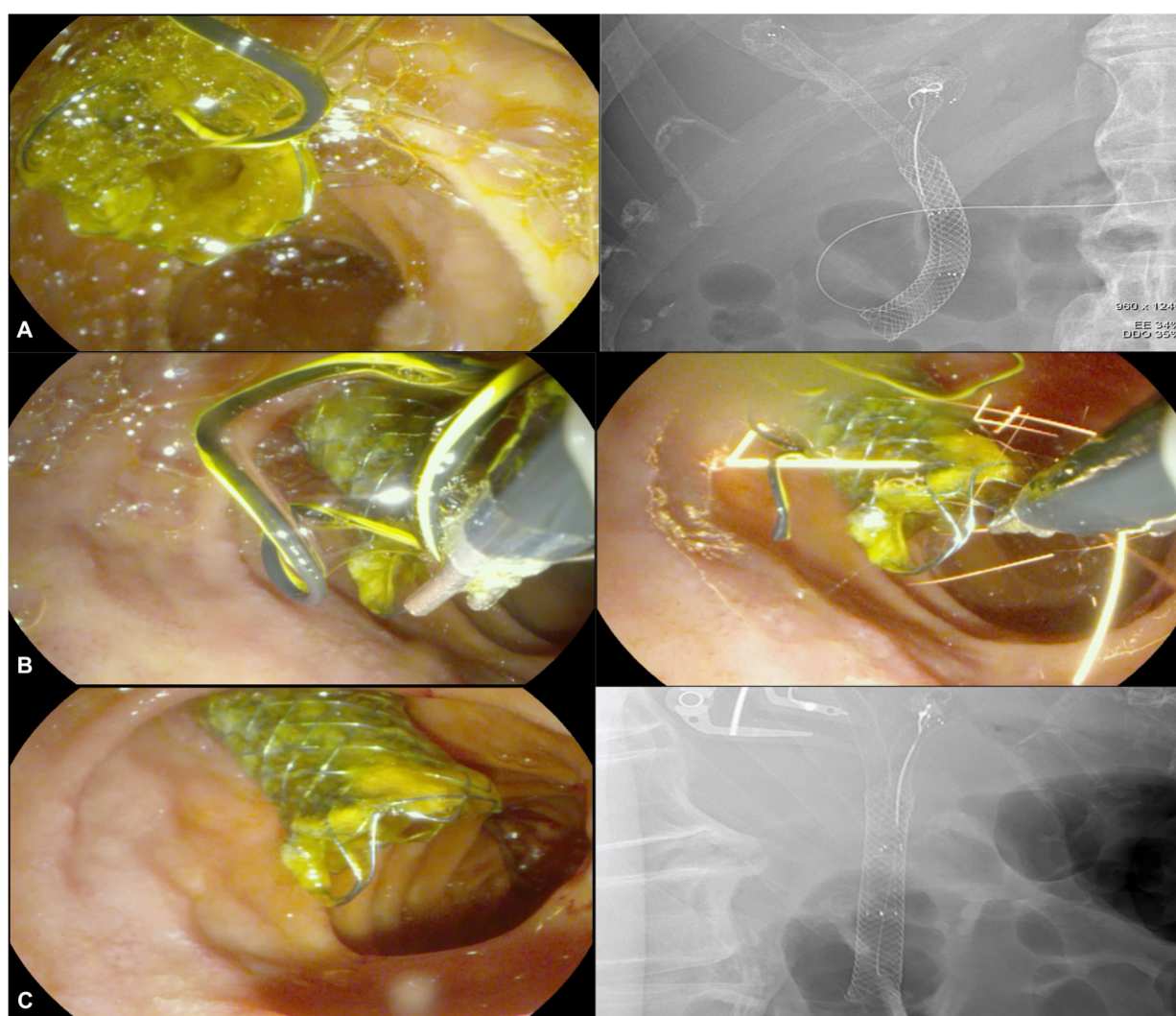


Fig. 1. — A. Stent migration with guidewire entrapment under endoscopic and fluoroscopic view. B. Guidewire fragmentation with Remove System. C. Endoscopic and fluoroscopic view after guidewire fragmentation and removal.

minimally invasive approach for palliative drainage of patients with malignant biliary obstruction and surgically unresectable disease, however, adverse events related with stent deployment may occur (1,2).

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stent (FCSEMS) one year before. The abdominal ultrasound confirmed intrahepatic biliary duct dilation. ERCP was performed showing stent occlusion with biliary sludge and tumor overgrowth involving the hepatic duct confluence. After selective cannulation of right and left hepatic ducts using hydrophilic 0.035'' nitinol guidewires, two 100x6mm non-covered self-expandable metal stents were left to achieve complete palliation. During the procedure, the right stent was correctly placed, however proximal migration when the left stent was deployed resulted in an accidentally entrapment of the guidewire in the intrahepatic ducts (Fig. 1A). Several endoscopic approaches were tried for guidewire extraction including manual traction, hot snare and argon-plasma coagulation, being unsuccessful. A nasobiliary tube was transitory placed to avoid mucosa damage and the procedure was postponed. Four days later an upper endoscopy was repeated, and the nitinol guidewire could be cutted at the level of the transpapillary FCSEMS using a duodenoscope and bipolar electrocoagulation applied through the over-the-scope-clip (OTSC) extractor system (remove System, Ovesco; Fig. 1B) and removed without complications (Fig. 1C). The proximal part of the guidewire remained in the intra-hepatic bile duct and the stent, with no contact to the duodenal wall. Both intrahepatic stents have expanded and resulted in serum bilirubin improvement. After 12-day course of antibiotics the patient was discharged.

OTSC are mostly used for hemostasis and closure of digestive wall defects. The need of OTSC removal has occasionally been reported (3,4). The remOVE System (Ovesco) was developed for endoscopic fragmentation and OTSC extraction. Applying electric current pulses via endoscopic probe onto the clip structure leads to a localized melting of the nitinol material, separating the metallic frame of the clips. The current has a maximum of 165 amperes and 100 milliseconds. The remove DC Cutter is introduced through the endoscope working

channel ($\geq 2,8\text{mm}$) to contact with the clip. Fragmentation rate of 97,3% is described (5).

To the best of our knowledge there are no published information regarding endoscopic nitinol guidewire fragmentation, and since the OTSC is made of shape-memory alloy (nitinol) similar to the guidewire, the authors highlight a safe and feasible technique in case of a trapped nitinol guidewire.

Statement of Ethics

The patient has given written informed consent for publication (including the publication of images).

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Data Availability Statement

The complete data of this study are not publicly available due to the patient's privacy but are available from the corresponding author upon reasonable request.

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