

Novel ERCP technique using a pushing catheter as a “mini-overtube” to remove a migrated metal stent from the bile duct

The use of fully-covered self-expanding metal stents (FCSEMSs) for benign and malignant biliary diseases is well established [1]. Whereas migration out of the bile duct is not uncommon, inward migration is rare and much more difficult to manage [2]. We report on a new technique to remove an internally migrated FCSEMS.

A 51-year-old woman with Caroli's disease, sclerosing cholangitis, and severe hepatolithiasis had been undergoing repeated endoscopic retrograde cholangiopancreatographies (ERCPs) with stone extraction and stenting to palliate her condition while awaiting liver transplantation (Fig. 1 a). Because of the presence of huge bile duct stones, an FCSEMS (Boston Scientific, Natick, Massachusetts, USA) was inserted into the bile duct, with resulting regression of her cholestasis. On follow-up ERCP, however, the stent had

migrated completely into the bile duct. Removal of the stent was impossible using standard devices such as baskets, balloons, snares, and standard forceps. Furthermore, insertion of a rat-tooth forceps into the bile duct was impossible because of the small ampullary orifice and the stiffness of the shaft of the forceps.

A solution to the problem was therefore sought. A pushing catheter (Cook Medical, Winston-Salem, North Carolina, USA) was inserted into the bile duct, and this served as a “mini-overtube” for the rat-tooth forceps to advance freely deep into the bile duct. The following steps describe the technique.

First, a guidewire (Metro; Cook Medical) was advanced through the stent using the U-wire or flipped-wire technique (Fig. 1 b). Second, a pushing tube from a 10-Fr plastic stent device was advanced over the wire and into the bile duct

(Fig. 1 c). Third, the wire was removed and the rat-tooth forceps was fed through the pushing tube (Fig. 1 d). The presence of the pushing catheter, acting as a mini-overtube, allowed for adequate positioning of the rat-tooth forceps at the distal edge of the stent, which was successfully grasped (Fig. 1 e, f) and removed (Fig. 1 g, h).

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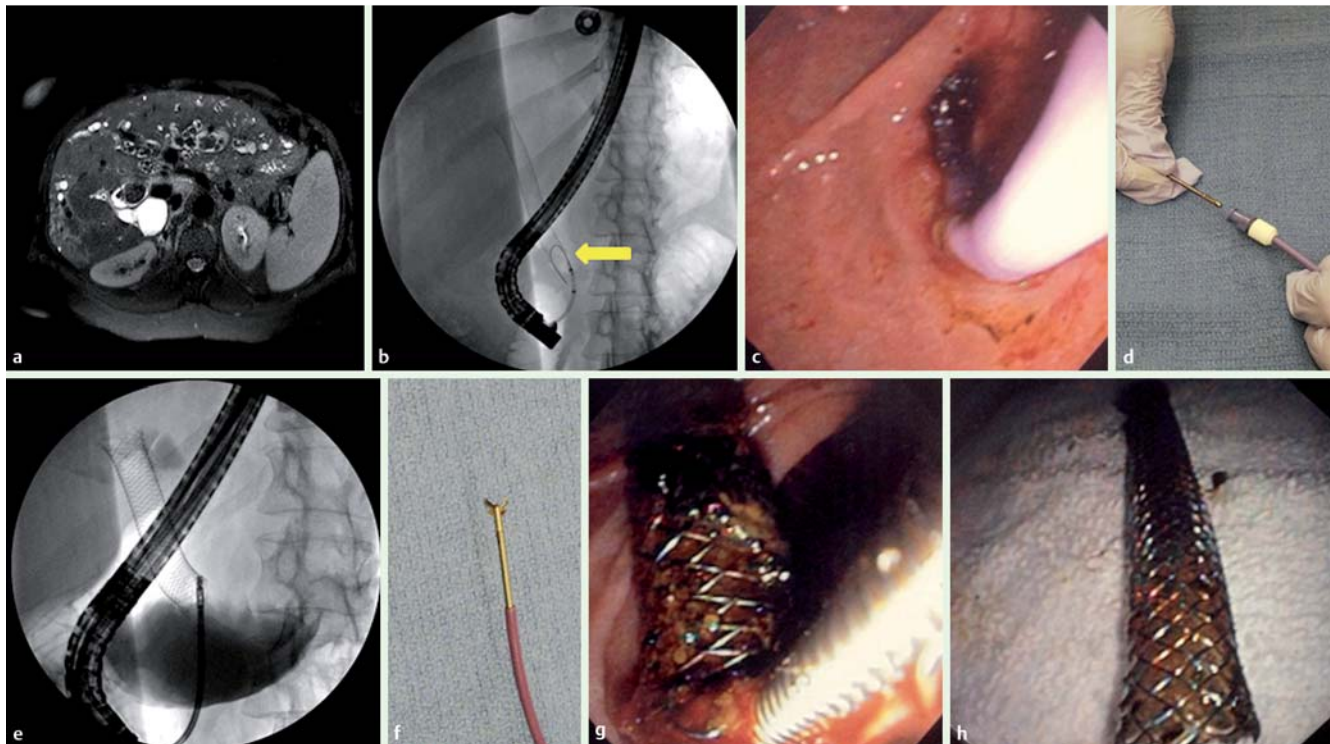


Fig. 1 a Magnetic resonance imaging (MRI) showing Caroli's disease, sclerosing cholangitis, and severe hepatolithiasis. b A guidewire was advanced through the stent using the U-wire or flipped-wire technique. c A pushing tube from a 10-Fr plastic stent device was advanced over the wire and into the bile duct. d The wire was removed and the rat-tooth forceps was fed through the pushing tube. e The presence of the pushing catheter (“mini-overtube”) allowed for adequate positioning of the rat-tooth forceps at the distal edge of the stent, which was successfully grasped. f The rat-tooth forceps is seen exiting the pushing catheter, which served as a “mini-overtube”. g The rat-tooth forceps tightly grasped the end of the stent, which was then removed. h The stent was removed without being fractured.

References

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