Novel method for retrieving a migrated plastic stent using an 11.5-Fr pusher sheath: The stent encapsulation method

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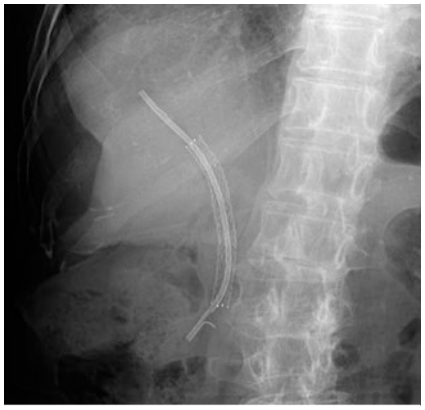
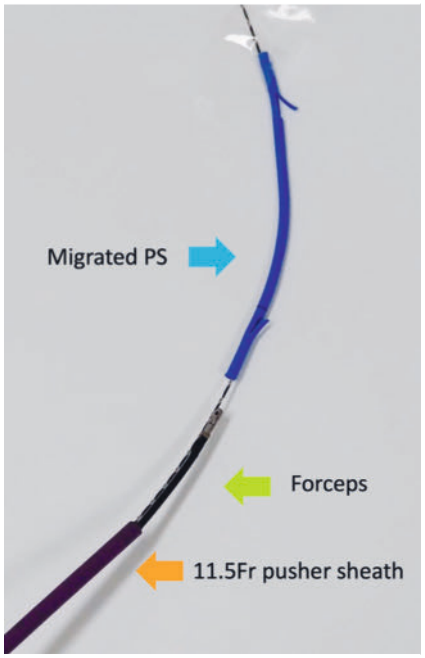
Plastic stent placement using endoscopic retrograde cholangiopancreatography (ERCP) is a widely used biliary drainage technique [1]. Migration of the plastic stent is a major adverse effect. Retrieval grasping techniques using baskets, snares, forceps, and balloon catheters have been reported [2]; however, these techniques are not always successful because of biliary stenosis and tight anchoring of plastic stent flaps [3]. Herein, we introduce a novel method for retrieving a migrated plastic stent using an 11.5-Fr pusher sheath.

A 58-year-old woman with a history of multiple endoscopic treatments, including placement of a metallic stent and a plastic stent inside the metallic stent, for distal biliary obstruction caused by malignant lymphoma, was admitted to our institution because of cholangitis (▶ **Fig. 1**). Computed tomography revealed a dilated intrahepatic bile duct, which was suspected to be related to stent occlusion. We performed endoscopic retrograde cholangiopancreatography (ERCP) and attempted to retrieve the plastic stent using forceps, a snare, and a balloon catheter; however, these attempts failed because of the tight anchoring of a flap of the plastic stent to the metallic stent and the migration of the plastic stent into the bile duct.

Therefore, we decided to try a stent encapsulation method (▶ **Video 1**). We passed a 0.025-inch guidewire through the plastic stent and advanced an 11.5-Fr pusher sheath (Oasis; Cook Medical, Bloomington, Indiana, USA) over the guidewire. Forceps (E634045; Olympus Medical Systems, Tokyo, Japan) were then inserted through the pusher sheath (▶ **Fig. 2**). The end of the plastic stent was then grasped with the forceps (▶ **Fig. 3**). The 11.5-Fr pusher sheath device was advanced into the bile duct over the forceps encasing the entire length of the plastic stent (▶ **Fig. 4**), including the flap. The plastic stent was then removed successfully through the pusher sheath. Finally, another metallic stent was deployed inside the previously placed metallic stent (▶ **Fig. 5**).

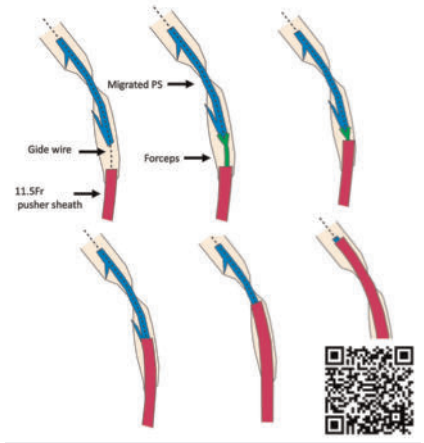


▶ **Fig. 1** X-ray of 58-year-old woman showing possibly occluded plastic stent coaxial within a metallic stent, placed for distal biliary obstruction caused by malignant lymphoma.



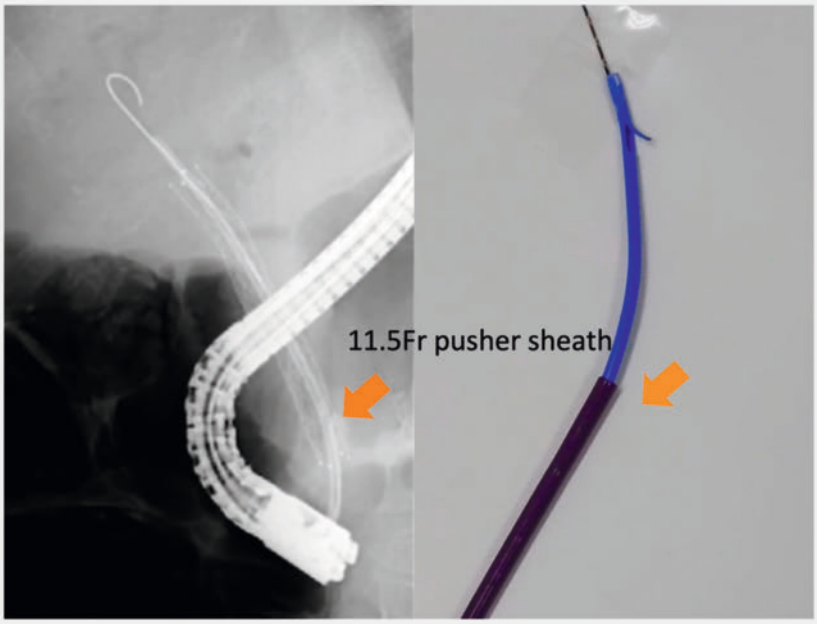
▶ **Fig. 2** Forceps are passed through an 11.5-Fr pusher sheath on the guidewire.

▶ **Fig. 3** The forceps are used to grasp the end of the migrated plastic stent.

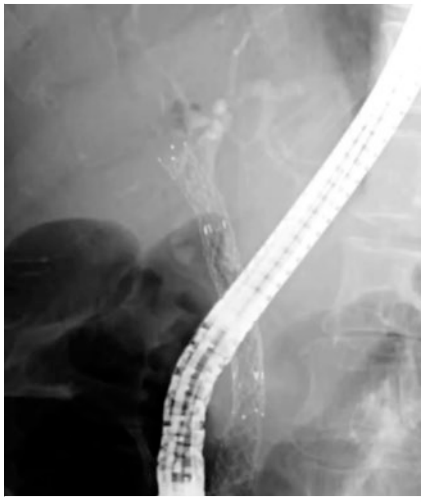


Video 1 Successful removal of a migrated and tightly stuck biliary plastic stent using a novel stent encapsulation method.

This novel method can be useful for removing a migrated plastic stent after advancement of a sheath device beyond a stricture.



▶ **Fig. 4** The 11.5-Fr pusher sheath is advanced over the forceps to encase the entire length of the migrated stent.



▶ **Fig. 5** Another metallic stent is deployed inside the previously placed metallic stent.

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Conflict of Interest

The authors declare that they have no conflict of interest.

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