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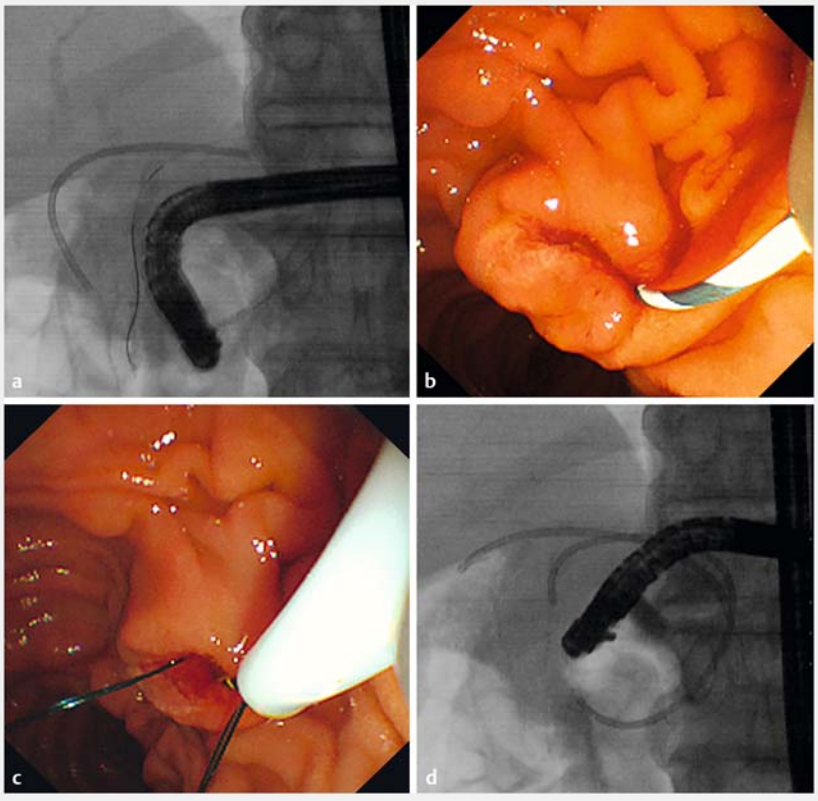
The novel basket catheter for retrieval of a migrated biliary inside stent

Many techniques have been reported for endoscopic retrieval of migrated biliary stents [1–4]. However, available devices such as forceps and snares are not suitable to grasp the migrated nylon thread attached to the biliary inside stent. The novel basket catheter (RASEN; Kaneka Medical, Osaka, Japan) with an 8-wire spiral structure is rotatable and effective in removing small biliary stones (▶ **Fig. 1**). We describe the technical tips for retrieval of a migrated inside-stent using the RASEN basket catheter.

A 69-year-old man with unresectable cholangiocarcinoma was admitted to our hospital owing to obstructive jaundice. At first, the inside stent was inserted in the anterior segmental branch for treatment of obstructive jaundice. However, he underwent endoscopic retrograde cholangiopancreatography 7 days later for additional biliary stent insertion in the posterior segmental branch owing to insufficient improvement in his jaundice symptoms. Although the posterior segmental branch was easily contrasted, the bile duct stricture was severe and required dilation using a thin balloon catheter (6-mm REN; Kaneka Medical).

When insertion of the second biliary stent was attempted, the first stent migrated to the anterior segmental branch, and not only the distal end of the stent but also the nylon thread attached to the inside stent were not visible on the endoscopic image (▶ **Fig. 2 a, b**). We attempted to retrieve the migrated inside stent using the RASEN basket catheter. We inserted and opened the basket in the common bile duct and pulled it while slowly rotating it. Subsequently, we could easily grasp the nylon thread (▶ **Fig. 2 c**) and gently pull it. After returning the stent position without breaking the nylon thread, we released it in the duodenum. Finally, the second stent was inserted into the posterior segment branch without migration of the first stent (▶ **Fig. 2 d,** ▶ **Video 1**). The RASEN basket

▶ **Fig. 1** Novel RASEN basket catheter. The tip of the basket has a dense structure. The basket is very effective for removing small biliary stones.



▶ **Fig. 2** The biliary inside stent is migrated into the anterior segmental branch. **a** Fluoroscopic findings. **b** Endoscopic findings. **c** The nylon thread attached to the biliary inside stent is successfully caught using the RASEN basket catheter. **d** After the procedure, the two biliary stents are placed in fluoroscopic view.

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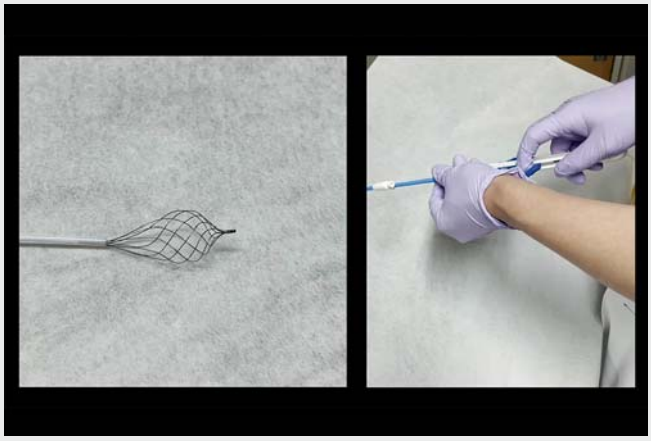

Video 1 A migrated biliary inside stent was successfully removed using a novel basket catheter.

catheter might be useful for retrieval of a migrated biliary inside stent.

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Competing interests

The authors declare that they have no conflict of interest.

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