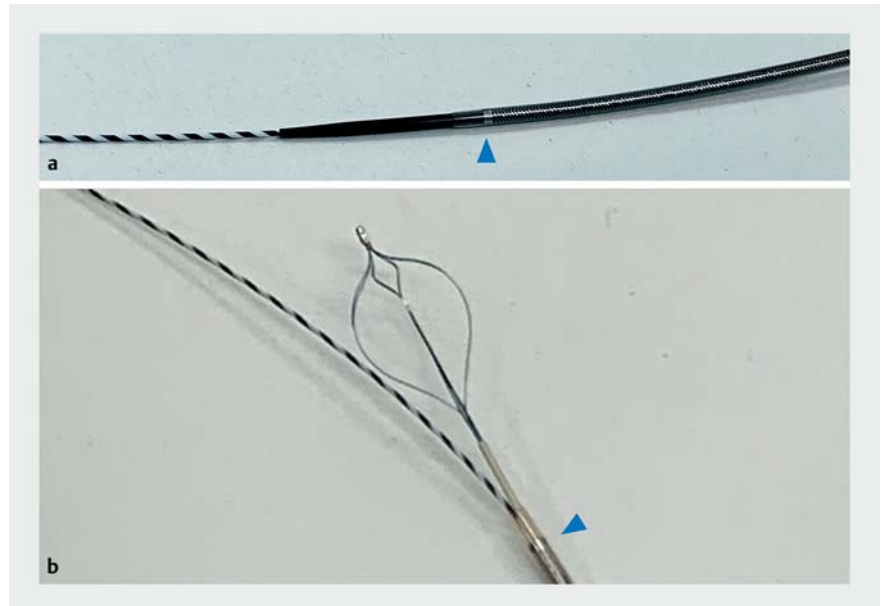


Endoscopic tapered sheath-assisted removal of a proximally migrated pancreatic stent

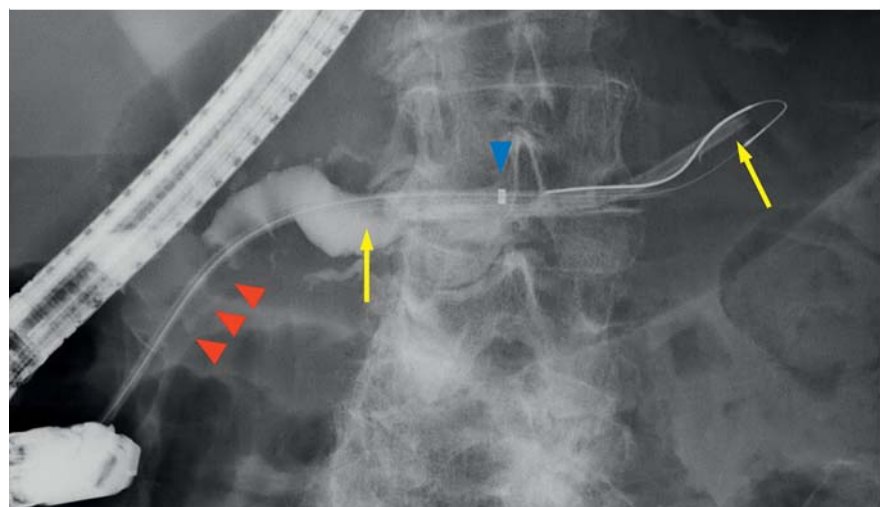
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Endoscopic pancreatic stenting is beneficial for patients with a variety of pancreatic conditions; however, proximal migration of the stent occurs occasionally and removal is technically demanding [1,2]. It is sometimes quite challenging to pass stent-removal devices such as forceps, baskets, and snares across a stricture, particularly in cases in which the migrated stent is located further away from the pancreatic duct stricture [3]. We present an impressive case in which a new endoscopic tapered sheath (EndoSheather; Piolax, Inc., Kanagawa, Japan) (► **Fig. 1**) [4] contributed successfully to the removal of a proximally migrated stent in a patient with a distal stricture. This novel device allowed the stricture to be passed and devices to be inserted easily through an indwelling outer sheath, providing a bridge to the target space even in the deep pancreatic tail.

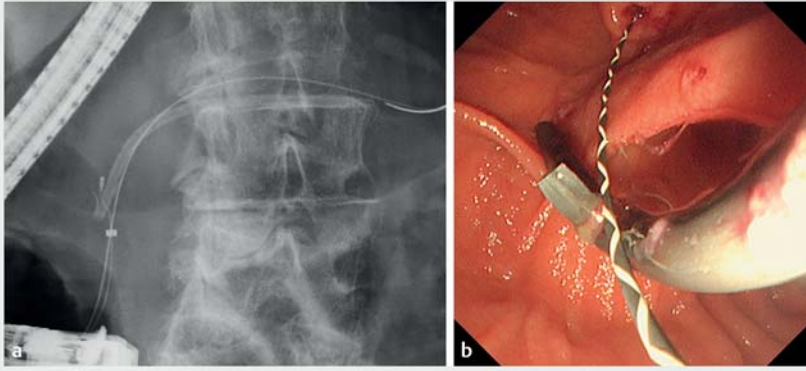
An 84-year-old woman with a pancreatic head intraductal tubulopapillary neoplasm developed abdominal pain caused by a pancreatic duct stricture. Placement of a 7 Fr plastic stent (7 cm) across the stricture improved her symptoms. However, the pancreatic stent migrated beyond the stricture (► **Fig. 2**). A conventional balloon catheter failed to remove the stent. None of the devices used to grab the migrated stent could access the proximal duct due to the severe stricture. Therefore, the new endoscopic sheath, with a tapered inner catheter tip to allow easy passage across the stricture, was inserted into the pancreatic duct over a 0.025-inch guidewire. Only the inner catheter was removed, leaving the outer sheath near the target position. Subsequently, the retrieval basket was inserted through the outer sheath to reach the migrated stent. The migrated stent was grasped with the basket and successfully dragged out to the duodenum without adverse events (► **Fig. 3**, ► **Video 1**).



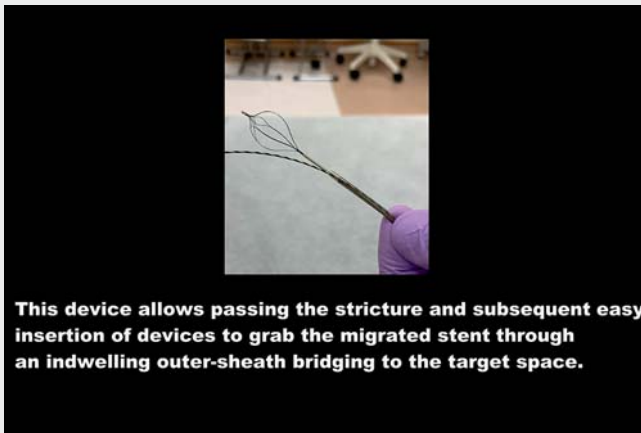
► **Fig. 1** The endoscopic tapered sheath (EndoSheather; Piolax, Inc., Kanagawa, Japan). **a** Tip calibers of the inner catheter and the outer sheath are similar. A 0.025-inch guidewire is used with the inner catheter. Outer-sheath external diameter: 7.2 Fr (2.44 mm); interior diameter: 6.2 Fr (2.06 mm). The outer-sheath tip has a radiopaque marker (blue arrowhead). **b** A retrieval basket can be inserted through the outer sheath along the 0.025-inch guidewire.



► **Fig. 2** The proximally migrated stent was located away from the stricture (red arrowheads). Yellow arrows indicate the proximal head and the distal end of the migrated stent. The new endoscopic tapered sheath was inserted deep into the pancreatic duct over a 0.025-inch guidewire. Blue arrowhead shows the radiopaque marker of the outer sheath.



► **Fig. 3** The retrieval basket reached the head of the migrated stent smoothly through the outer sheath. The migrated stent was successfully removed using the Lariat technique by grabbing the distal end of the stent. **a** Fluoroscopic image. **b** Endoscopic image.



This device allows passing the stricture and subsequent easy insertion of devices to grab the migrated stent through an indwelling outer-sheath bridging to the target space.



► **Video 1** A new endoscopic tapered sheath contributed to the successful removal of a proximally migrated stent that was located away from the stricture.

This technique may be a useful option for removing a proximally migrated pancreatic stent that is beyond the stricture or deep in the pancreatic duct.

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Competing interests

The authors declare that they have no conflict of interest.

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