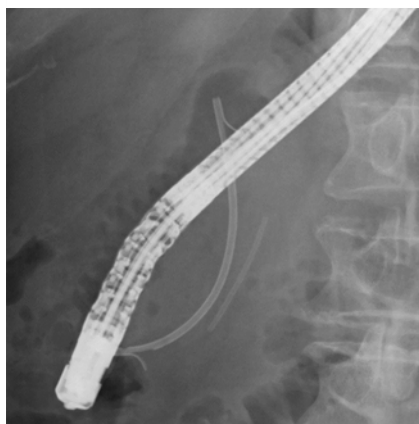


The “zipline” technique for endoscopic removal of a migrated pancreatic stent



► **Fig. 1** Fluoroscopy shows a pancreatic plastic stent totally migrated into the pancreatic duct.

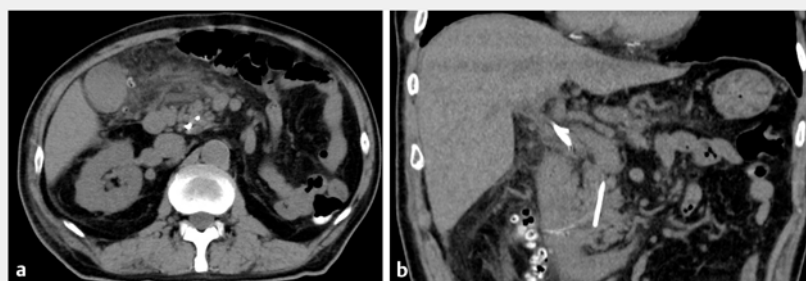


► **Fig. 3** Fluoroscopic image shows the biopsy forceps grasping the migrated stent using the “zipline” technique.



► **Fig. 4** Biopsy forceps with looped nylon thread over the guidewire.

Prophylactic placement of a pancreatic stent can reduce post-endoscopic retrograde cholangiopancreatography (ERCP) pancreatitis (PEP), but it entails the risk



► **Fig. 2** Computed tomography indicates **a** severe acute pancreatitis; **b** pancreatic stent migration.



► **Video 1** A pancreatic stent that had totally migrated into the pancreatic duct was successfully removed using the “zipline” technique.

of several adverse events including stent migration [1]. Endoscopic removal of a migrated stent is technically challenging because limited devices are available for use in the small and tortuous pancreatic duct [2]. Here, we present a case in which the “zipline” technique enabled successful removal of a pancreatic stent that had totally migrated into the pancreatic duct.

An 82-year-old man with a history of distal pancreatectomy underwent biliary stent placement for a biliary stricture due to eosinophilic cholangitis. During

the initial ERCP session, a 5-Fr straight-type pancreatic stent was placed prophylactically. However, severe PEP occurred when the stent migrated into the pancreatic duct (► **Fig. 1**, ► **Fig. 2**). After the patient was referred to our department, we first attempted to remove the migrated stent with biopsy forceps 2 alongside the guidewire, but this failed. Additional attempts with over-the-wire devices such as a snare and a tapered balloon catheter were unsuccessful even though the guidewire was inserted through the migrated stent. Finally, the “zipline”

technique using a hand-made wire-guided biopsy forceps (Radial Jaw 4 pediatric; Boston Scientific) provided success in removing the stent (► **Fig. 3**, ► **Video 1**), and the PEP subsided thereafter.

Since the Radial Jaw forceps has two small holes on both jaw cups, it can be used as a wire-guided forceps when a looped nylon thread is attached to a cup (► **Fig. 4**). With this wire-guided forceps, the “zip-line” technique has enabled targeted biliary biopsy and removal of a migrated biliary stent [3,4]. Among the various techniques for endoscopic removal of migrated stents [5], the “zipline” technique is an inexpensive, easy-to-use method which can be widely utilized since it requires no special device other than one nylon thread. Thus, it can be an option for endoscopic removal of a migrated pancreatic duct stent once the guidewire has been successfully inserted into the migrated stent.

Endoscopy_UCTN_Code_TTT_1AR_2AI

Competing interests

M. Fujishiro has received lecture honoraria from Olympus Co., and Fujifilm Co. and research grants from Olympus Co. and Fujifilm Co. outside the work reported in this article.

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References

- [1] Mazaki T, Masuda H, Takayama T et al. Prophylactic pancreatic stent placement and post-ERCP pancreatitis: a systematic review and meta-analysis. *Endoscopy* 2010; 42: 842–853
- [2] James TW, Baron TH. Removal of a proximally migrated 5-Fr pancreatic stent with a 5-4-3-Fr catheter using a wedge technique. *Endoscopy* 2020; 52: E267–E268
- [3] Hamada T, Takahara N, Nakai Y et al. The “zipline” technique for endoscopic transpapillary biliary biopsy. *Endoscopy* 2020; 52: 236–237
- [4] Sasaki T, Takeda T, Sasahira N et al. Removal of a biliary self-expandable metal stent using the zipline technique for pancreatic cancer with duodenal stricture. *Dig Endosc* 2022; 34: e26–e27
- [5] Matsumoto K, Katanuma A, Maguchi H. Endoscopic removal technique of migrated pancreatic plastic stents. *J Hepatobiliary Pancreat Sci* 2014; 21: E34–E40

Bibliography

Endoscopy 2023; 55: E299–E300

DOI 10.1055/a-1978-7843

ISSN 0013-726X

published online 13.12.2022

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