

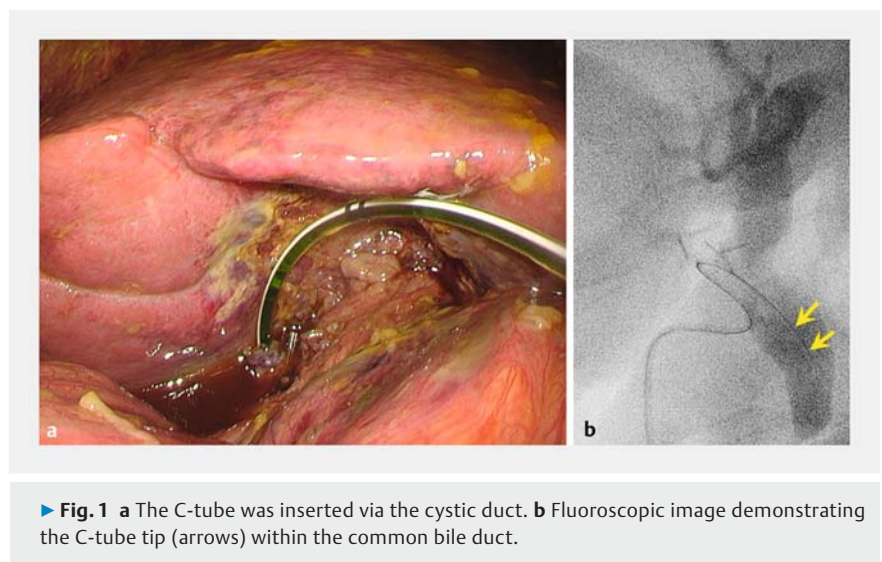
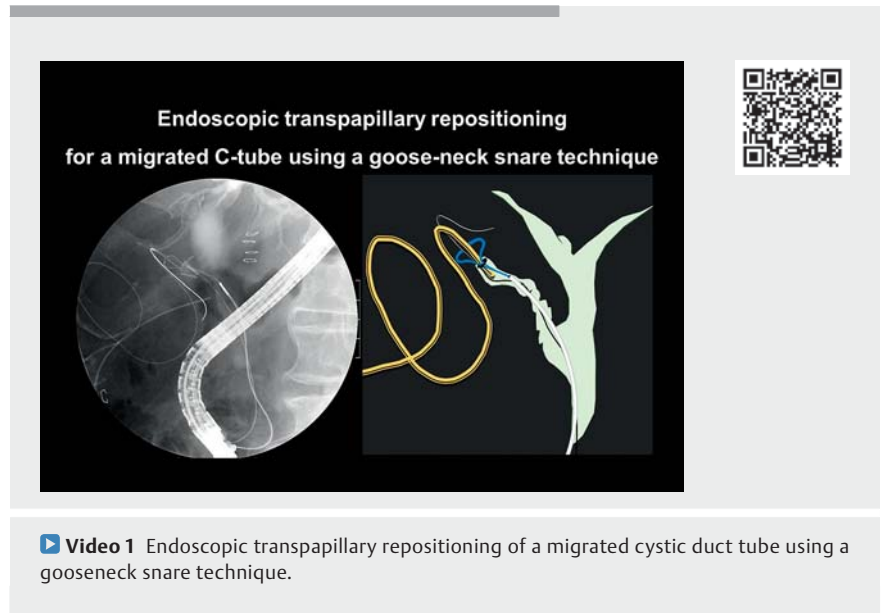
Endoscopic transpapillary repositioning of a migrated cystic duct tube using a gooseneck snare technique

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A cystic duct tube (C-tube) may be inserted via the cystic duct into the common bile duct (CBD) during cholecystectomy for postoperative percutaneous biliary drainage [1–5]. Postoperative C-tube migration has been reported in 6.6% cases [2]. Herein, we describe successful endoscopic repositioning of a migrated C-tube (► **Video 1**).

A 71-year-old man with acute cholecystitis underwent emergency cholecystectomy at our institution. Intraoperative cholangiography showed dilatation of the CBD proximal to the duodenal papilla, indicating biliary obstruction. Therefore, a 6-Fr C-tube was then inserted into the CBD and fixed to the cystic duct using an elastic thread (► **Fig. 1**). On postoperative day 4, fluoroscopy demonstrated migration of the C-tube toward the extra-biliary tract resulting in leakage of contrast medium into the abdominal cavity (► **Fig. 2**). Although percutaneous repositioning of the C-tube failed, contrast was observed within the cystic duct and CBD indicating that the C-tube tip was retained within the cystic duct. We therefore attempted endoscopic transpapillary repositioning of the C-tube.

An ampullary tumor was observed on endoscopy (► **Fig. 3**). After deep cannulation, a 0.025-inch guidewire was advanced into the cystic duct and placed parallel to the migrated C-tube (► **Fig. 4**). A 15-mm snare (SnareMaster, Olympus Medical Systems, Tokyo, Japan) with the base bent over into a gooseneck configuration was then passed over the guidewire (► **Fig. 5a**). The snare was used to grasp and pull the C-tube down toward the CBD allowing successful repositioning (► **Fig. 5b–e**). Finally, a plastic stent was placed in the CBD. Following further examination, the patient was subsequently diagnosed with ampullary adenocarcinoma and underwent pancreaticoduodenectomy. No adverse events, including bile leakage, were observed.

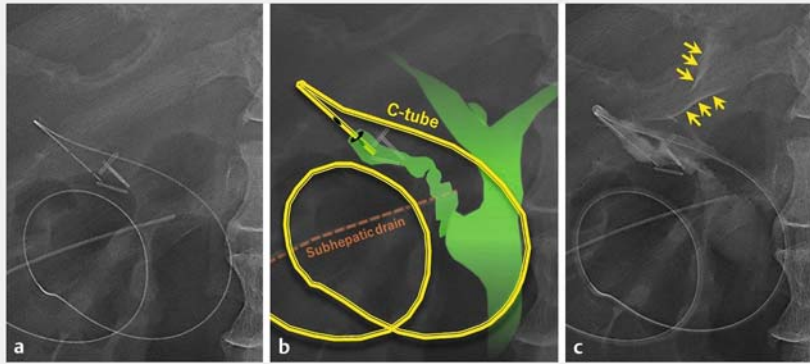


To our knowledge, this is the first report of successful endoscopic repositioning of a migrated C-tube. Endoscopic transpapillary repositioning using a gooseneck snare may represent an option for salvage therapy when percutaneous repositioning of a migrated biliary drainage tube is unsuccessful.

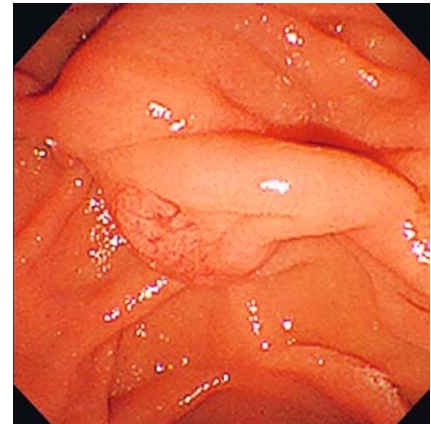
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► **Fig. 2** Imaging on postoperative day 4 demonstrating the C-tube tip was retained within the cystic duct. **a** Fluoroscopic image. **b** Schema of the fluoroscopic image. **c** C-tube cholangiography demonstrating leakage of contrast medium into the abdominal cavity (arrows). Contrast was observed within the cystic duct and common bile duct indicating the C-tube tip was retained within the cystic duct.



► **Fig. 3** Endoscopic image of the previously unseen ampullary tumor.



► **Fig. 4** ERCP imaging. **a** Cannulation of the cystic duct. **b** Placement of the guidewire parallel to the C-tube.

Competing interests

The authors declare that they have no conflict of interest.

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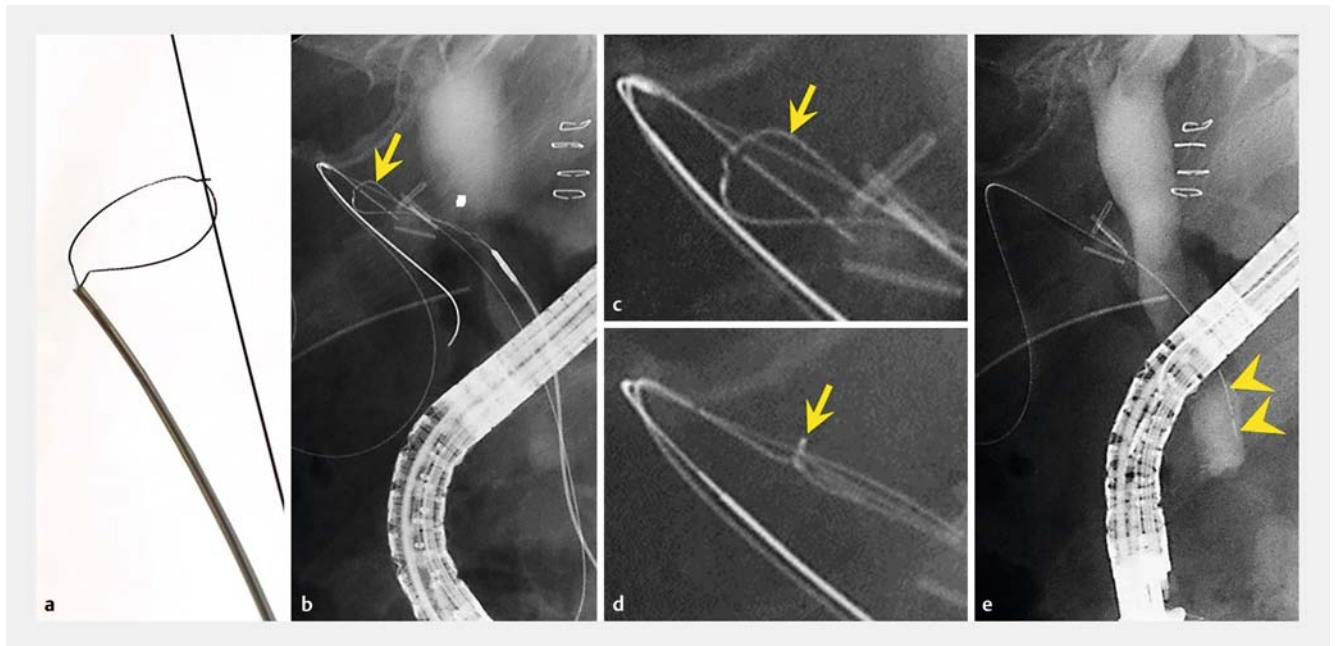
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► **Fig. 5** Endoscopic transpapillary repositioning of the migrated C-tube using a gooseneck snare. **a** The base of the snare was bent vertically into a gooseneck configuration and passed over the guidewire. **b, c** Snare opening (arrow) adjacent to the C-tube. **d** Snare closure (arrow) to grasp the C-tube. **e** The snare was withdrawn through the common bile duct along with the C-tube resulting in successful repositioning (arrowheads).

References

- [1] Kitano S, Bandoh T, Yoshida T et al. Laparoscopic C-tube drainage via cystic duct following common bile duct exploration. *J Hepatobiliary Pancreat Surg* 1995; 2: 146–149
- [2] Fujimura M, Hirano M, Sato I et al. The C tube in biliary surgery—its development and clinical application (in Japanese with English abstract). *Nihon Geka Hokan* 2000; 68: 85–122
- [3] Panaro F, Glaise A, Miggino M et al. Rubber transcystic drainage reduces the post-removal biliary complications in liver transplantation: a matched case-control study. *Langenbecks Arch Surg* 2013; 398: 169–176
- [4] Nanashima A, Abo T, Shibuya A et al. Does the placement of a cystic duct tube after a hepatic resection help reduce the incidence of post-operative bile leak? *HPB (Oxford)* 2013; 15: 517–522
- [5] Maulat C, Regimbeau JM, Buc E et al. Prevention of biliary fistula after partial hepatectomy by transcystic biliary drainage: randomized clinical trial. *Br J Surg* 2020; 107: 824–831

Bibliography

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