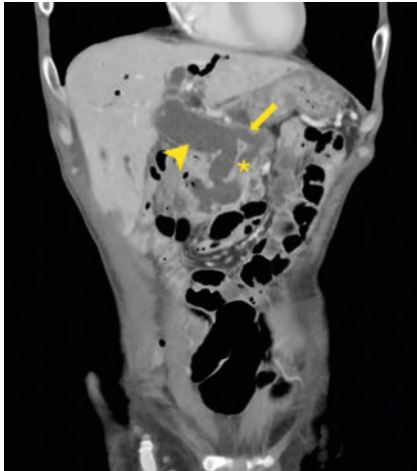
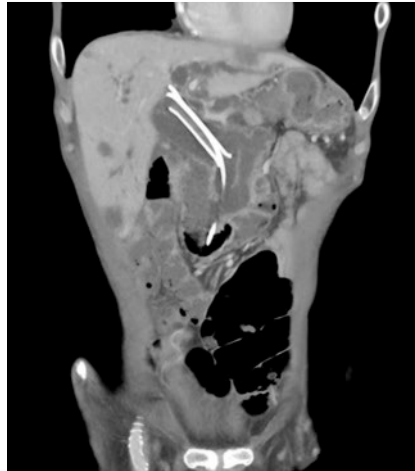


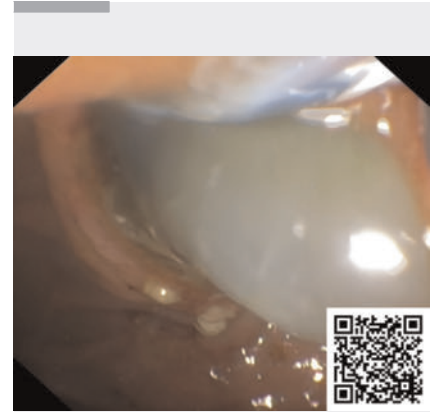
Rescue therapy for recurrent cholangitis secondary to main duct intraductal papillary mucinous neoplasm with pancreatobiliary fistula using an esophageal fully covered metal stent



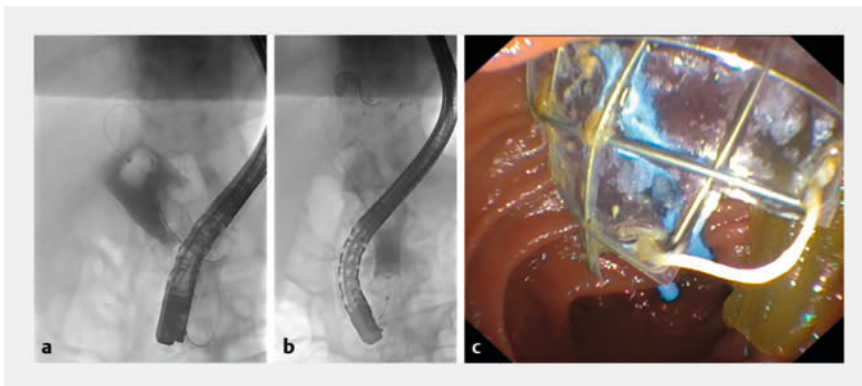
▶ Fig. 1 Main duct intraductal papillary mucinous neoplasm with pancreatobiliary fistula. Dilated common bile duct (arrowhead), dilated main pancreatic duct (asterisk), pancreatobiliary fistula (arrow).



▶ Fig. 2 Proximal migration of biliary fully covered self-expanding metal stent (FCSEMS).



▶ Video 1 Removal of migrated biliary fully covered self-expanding metal stent, extraction of large amount of mucin from a dilated common bile duct, followed by insertion of a through-the-scope esophageal fully covered self-expanding metal stent in the common bile duct.



▶ Fig. 3 a Dilated common bile duct with a 20-mm extraction balloon and excessive mucin within. b Occlusion cholangiogram after deployment of esophageal FCSEMS. c Endoscopic view of esophageal FCSEMS and biliary double-pigtail stent after placement.

Main duct intraductal papillary mucinous neoplasms (MD-IPMNs) of the pancreas may be complicated by fistula formation [1] and biliary obstruction from excessive mucin [2]. Fistulation occurs in 6.6% of patients, involving organs like the common bile duct (CBD) [3].

We present a 78-year-old man diagnosed with MD-IPMN who declined surgery and defaulted follow-up. Four years later, he

presented with cholangitis. A computed tomography (CT) scan showed a 61 × 29-mm pancreatic mass with liver metastases and a 25-mm dilated CBD with fistulation between the main pancreatic duct and the mid-CBD (▶ Fig. 1). The patient underwent endoscopic retrograde cholangiopancreatography (ERCP) and insertion of a 10 × 60-mm biliary fully covered self-expanding metal stent (FCSEMS)

(WallFlex; Boston Scientific, Marlborough, Massachusetts, USA) and a 7-Fr × 12-cm double-pigtail stent (Zimmon; Cook Medical, Bloomington, Indiana, USA) within the FCSEMS.

He had initial clinical improvement but developed recurrent cholangitis two weeks later. A repeat CT scan showed proximal migration of the biliary FCSEMS (▶ Fig. 2). The use of an 18 × 97-mm through-the-scope esophageal FCSEMS (Agile; Boston Scientific) for repeat biliary stenting was considered because of its larger diameter. Informed consent was obtained from the patient after the off-label use with procedural risks, including perforation, was explained. Repeat ERCP was performed to remove the migrated biliary FCSEMS and double-pigtail stent, followed by balloon sweeps to remove excessive mucin within the 30-mm dilated CBD (▶ Video 1). The esophageal FCSEMS was successfully deployed in the CBD to close the pancreatobiliary fistula. A 7-Fr × 12-cm double-pigtail stent was

then placed within the FCSEMS to prevent stent migration (► **Fig. 3**). The procedure lasted 45 minutes with no post-procedure complications. The patient recovered well and opted for the best supportive care.

Off-label use of esophageal FCSEMS may be considered for biliary stenting of a severely dilated CBD as smaller stents may be prone to migration.

Endoscopy_UCTN_Code_TTT_1AS_2AJ

Conflict of Interest

Damien Meng Yew Tan – Consultant for Boston Scientific, Pentax Medical, Olympus.
Christopher Jen Lock Khor – Consultant for Boston Scientific, Fujifilm, Erbe.

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Endoscopy 2025; 57: E762–E763

DOI 10.1055/a-2619-6966

ISSN 0013-726X

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