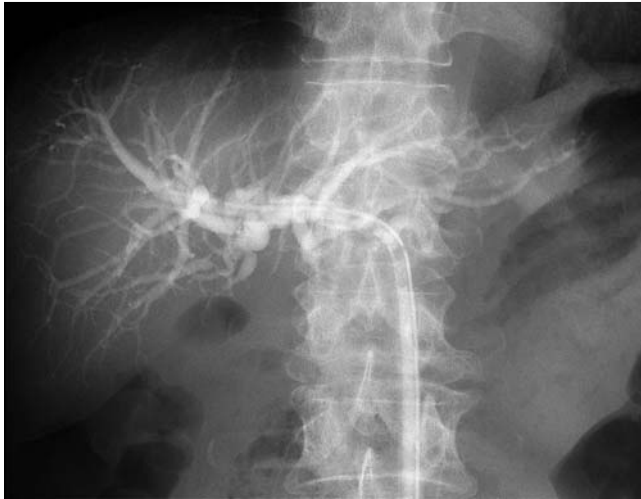
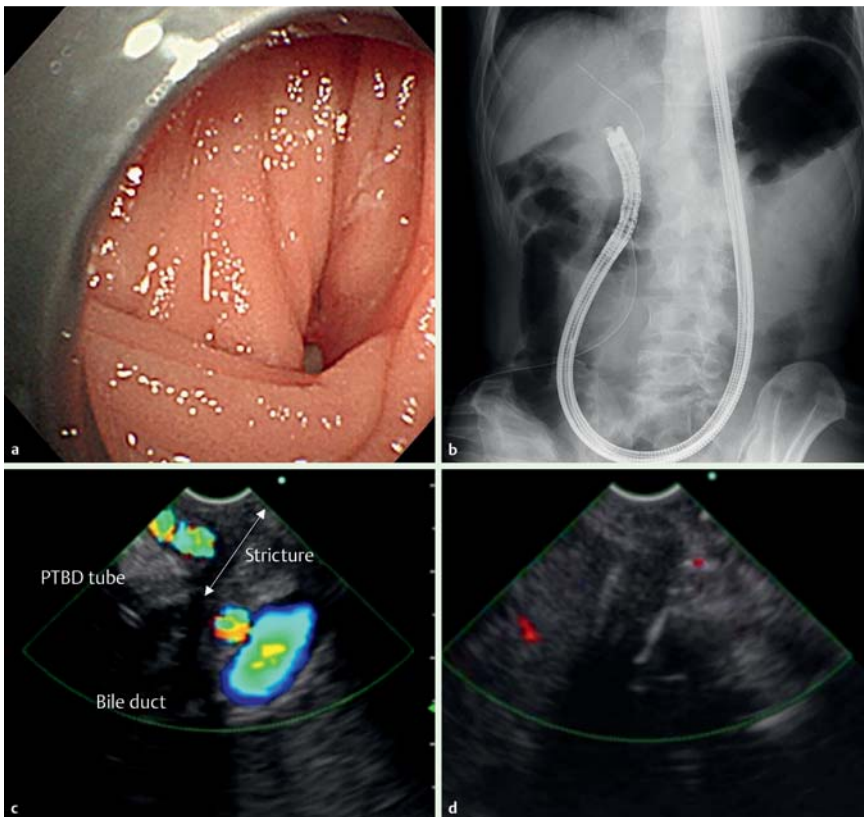


## Endoscopic ultrasound-guided choledochojejunostomy with a forward-viewing echoendoscope for severe benign bilioenteric stricture in a patient with Child's resection



**Fig. 1** A cholangiogram obtained during percutaneous trans-hepatic biliary drainage in a patient with an anastomotic stricture after choledochojejunostomy shows that the anastomotic site is completely occluded.



**Fig. 2** **a** The hepaticojejunal anastomosis. There is no evidence of bile leakage. **b** A forward-viewing echoendoscope reaches the hepaticojejunal anastomosis. **c** A 10-mm stricture, the bile duct, and the percutaneous biliary drainage (PTBD) tube as viewed from the anastomotic site. **d** The bile duct is punctured with a 19-gauge needle.

Anastomotic strictures occurring after choledochojejunostomy have generally been treated by a percutaneous approach. A recent study reported that good outcomes were obtained after balloon enteroscope-assisted endoscopic retrograde cholangiopancreatography [1]. A number of procedures have been reported to be useful, including endoscopic ultrasound (EUS)-guided hepaticojejunostomy combined with antegrade stent placement [2], EUS-guided trans-hepatic antegrade balloon dilation [3], and EUS-guided choledochojejunostomy [4].

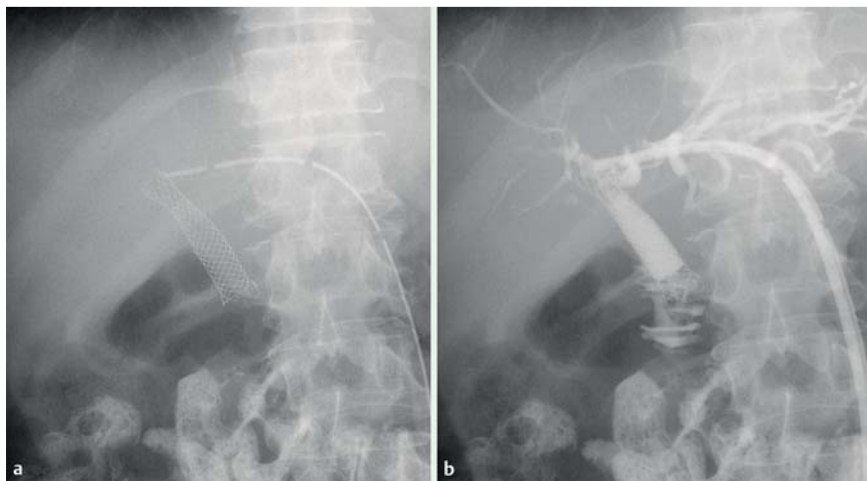
We describe our experience with a patient in whom we directly inserted a forward-viewing echoendoscope (TGF-UC260J; Olympus, Tokyo, Japan) [5], which punctured the bile duct at a hepaticojejunal anastomotic site. We then successfully placed a metal stent in retrograde fashion. The patient was a 74-year-old man with pancreatic cancer who had undergone pylorus-preserving pancreaticoduodenectomy and a modified Child's resection. However, a stricture developed 11 months after surgery. Retrograde stent placement with a single-balloon enteroscope and antegrade stent placement with a percutaneous cholangioscope failed because a guidewire could not pass through the stricture. A cholangiogram obtained during percutaneous trans-hepatic biliary drainage (PTBD) showed that the anastomotic site was completely occluded (Fig. 1).

A forward-viewing echoendoscope reached the hepaticojejunal anastomosis in 17 minutes. The bile duct was confirmed through an anastomotic stricture measuring about 10mm and was punctured with a 19-gauge needle (Fig. 2). A guidewire was then placed (Video 1). Subsequently, the anastomotic site was dilated with a 6-Fr diathermic dilator, and a 4-cm partially covered metal stent was placed in 35 minutes (Video 2). There were no procedural complications. The left and right bile ducts were confirmed to be free of occlusion on PTBD cholangiography (Fig. 3). The patient was discharged 2 days after treatment.

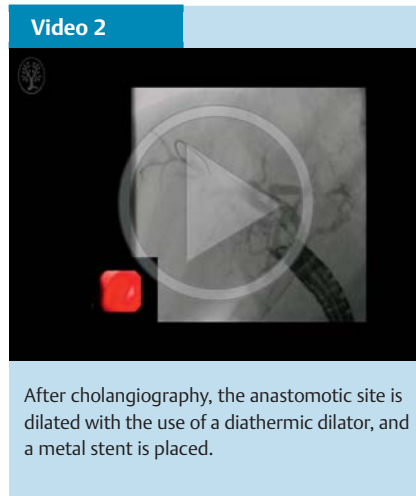
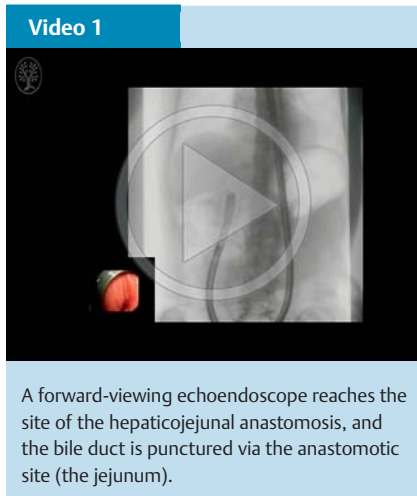
Our results confirm that EUS-guided choledochojejunostomy performed with a forward-viewing echoendoscope is a new treatment option for patients with severe bilioenteric strictures.

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**Competing interests:** None



**Fig. 3** The endoscopic ultrasound-guided choledochojejunostomy on the next day. **a** Dilatation of the metal stent is confirmed. **b** The right and left bile ducts are confirmed to be free of occlusion.



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