

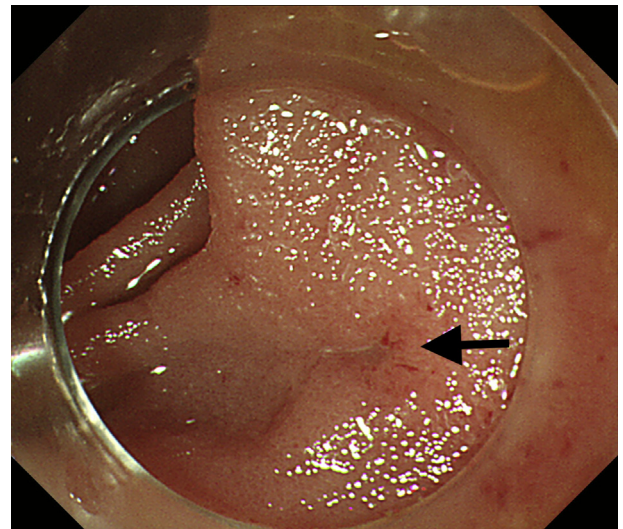


## Successful EUS-guided retrograde pancreatic duct stent placement for refractory pancreaticojejunostomy stricture after pancreaticoduodenectomy with a forward-viewing echoendoscope

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A 62-year-old man underwent pancreaticoduodenectomy with modified Child reconstruction for a duct-type intraductal papillary mucinous neoplasm localized at the pancreatic head. One year later, he was admitted because of pancreatitis associated with pancreaticojejunostomy stricture (PJS). We performed ERCP with a small-caliber colonoscope, successfully identified the anastomosis, and cannulated the pancreatic duct. Then, we dilated the PJS using a balloon catheter and deployed a 5F plastic stent. However, 2 months after ERCP, the patient experienced upper-abdominal discomfort, and laboratory test results showed elevated serum pancreatic enzymes.

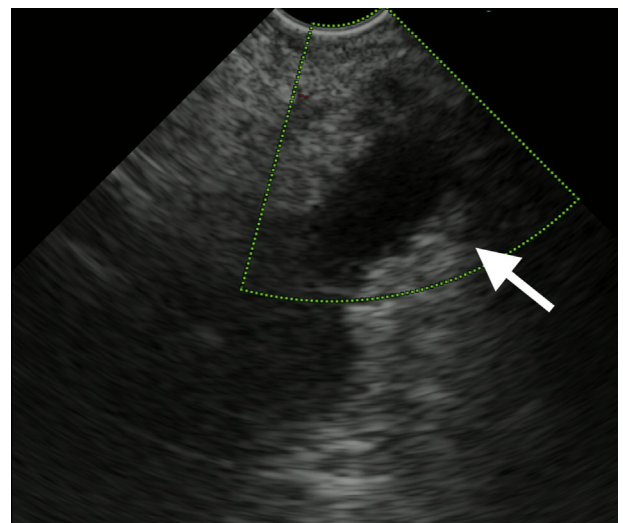
CT revealed swelling of the residual pancreas with dilatation of the pancreatic duct, suggestive of pancreatitis caused by relapse of the PJS (Fig. 1). Although we attempted reintervention for the PJS and could identify the anastomosis site (Fig. 2), we were unable to cannulate the pancreatic duct. Therefore, we attempted EUS-guided retrograde stent placement using a forward-viewing (FV) echoendoscope (TGF-UC260J; Olympus,



**Figure 2.** Endoscopic image of the pancreaticojejunostomy stricture (arrow).

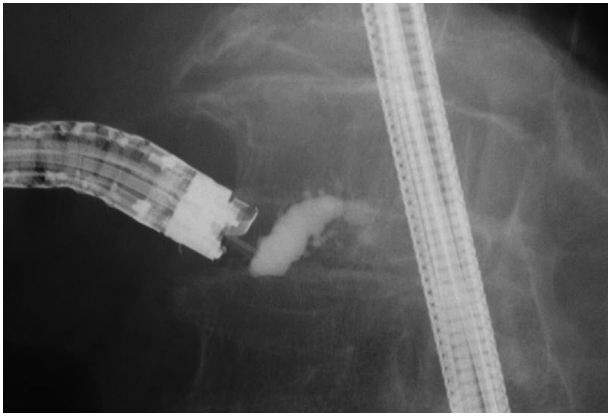


**Figure 1.** Contrast-enhanced CT image showing swelling of the residual pancreas with dilatation of the pancreatic duct (arrow).

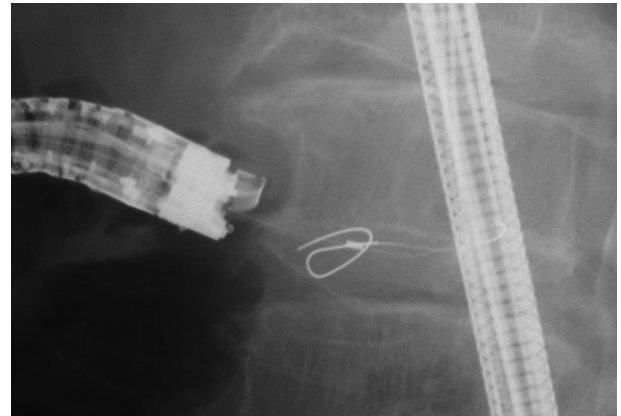


**Figure 3.** EUS image showing dilatation of the pancreatic duct (arrow).

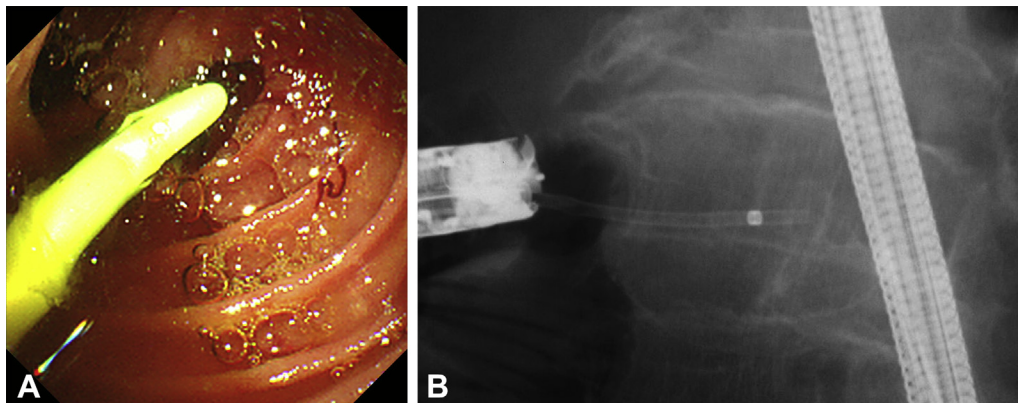
Written transcript of the video audio is available online at [www.VideoGIE.org](http://www.VideoGIE.org).



**Figure 4.** Puncture of the pancreatic duct with a 19-gauge needle, and injection of contrast medium.



**Figure 5.** Insertion of a 0.025-inch guidewire into the pancreatic duct, and performance of stepwise dilatation with a tapered catheter and a dilator.



**Figure 6.** Placement of a plastic stent across the puncture site. **A,** Endoscopic view. **B,** Fluoroscopic image.

Tokyo, Japan) (Video 1, available online at [www.VideoGIE.org](http://www.VideoGIE.org)). We were able to advance the echoendoscope to the anastomosis site and identify the pancreatic duct on EUS (Fig. 3). We punctured the pancreatic duct with a 19-gauge needle (EZ Shot 3 Plus, Olympus) and performed pancreatography with injection of contrast medium (Fig. 4). Next, we inserted a 0.025-inch guidewire (VisiGlide 2, Olympus) into the pancreatic duct through the needle.

We dilated the puncture site in a stepwise fashion with a 4F tapered catheter (PR-110Q, Olympus) and a dilation catheter (ES Dilator; Zeon Medical, Tokyo, Japan) (Fig. 5). Finally, we deployed a 7F plastic stent (Advanix Pancreatic Stent, NaviFlex RX Pancreatic Delivery System; Boston Scientific, Natick, Mass) across the puncture site (Fig. 6). No adverse events related to the procedure were noted. At 5 months after treatment, the patient remained symptom free, and CT showed no sign of recurrence.

In this case, we successfully performed EUS-guided retrograde pancreatic stent placement for refractory PJS using an FV echoendoscope. Despite the advances in

endoscopic techniques and devices, the endoscopic treatment of PJS remains technically challenging because of the length of the afferent limb, difficulties in detecting small anastomotic sites, and difficulties in cannulating the pancreatic duct through severe strictures.

Recently, EUS-guided pancreatic duct drainage (EUS-PDD) has been developed and reported to be superior to enteroscopy-assisted ERCP.<sup>1,2</sup> However, EUS-PDD, which includes a rendezvous technique and antegrade stent placement through a pancreaticogastrostomy, is a transgastric technique, is performed through the abdominal cavity, and carries the risk of pancreatic juice leakage. In fact, adverse events are more commonly associated with EUS-PDD than with enteroscopy-assisted ERCP.<sup>2</sup>

To our knowledge, only 2 other reports have demonstrated successful EUS-guided retrograde stent placement for PJS.<sup>3,4</sup> The advantages of this technique are that it is a 1-step procedure, and it is not performed through the abdominal cavity. Thus, this technique may be preferable to EUS-PDD in terms of adverse events.

An FV echoendoscope was used for EUS-guided retrograde stent placement in the present case; this has been described in only 1 other report in the literature.<sup>4</sup> The FV echoendoscope has also been reported to be useful for pancreaticobiliary examination after surgery.<sup>5</sup> The frontal endoscopic view may allow easier manipulation throughout the GI tract in a patient with surgically altered anatomy and thus may have a lower risk of perforation in comparison with a curved linear array echoendoscope. Therefore, the use of the FV echoendoscope appears to be more feasible for this technique.

On the basis of our experience and the report by Nakaji et al,<sup>4</sup> EUS-guided retrograde pancreatic stent placement may be a safe and effective method to treat PJS in selected patients.

## DISCLOSURE

*All authors disclosed no financial relationships relevant to this publication.*

*Abbreviations: EUS-PDD, EUS-guided pancreatic duct drainage; FV, forward-viewing; PJS, pancreaticojejunostomy stricture.*

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