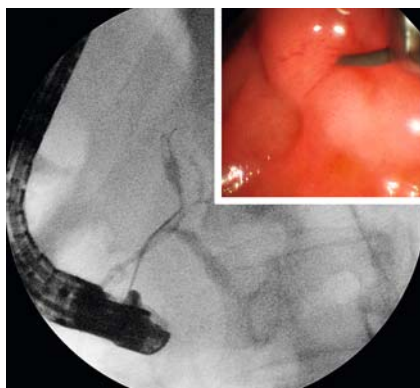
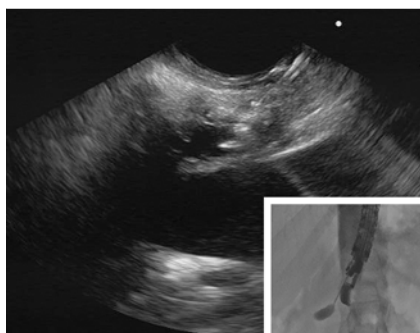


## A shot in the light: rendezvous endoscopic ultrasonography-guided pancreatic duct drainage in treatment of recurrent pancreatitis with pancreas divisum

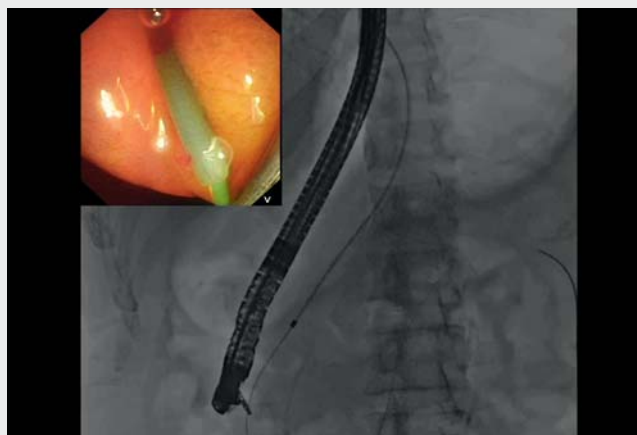
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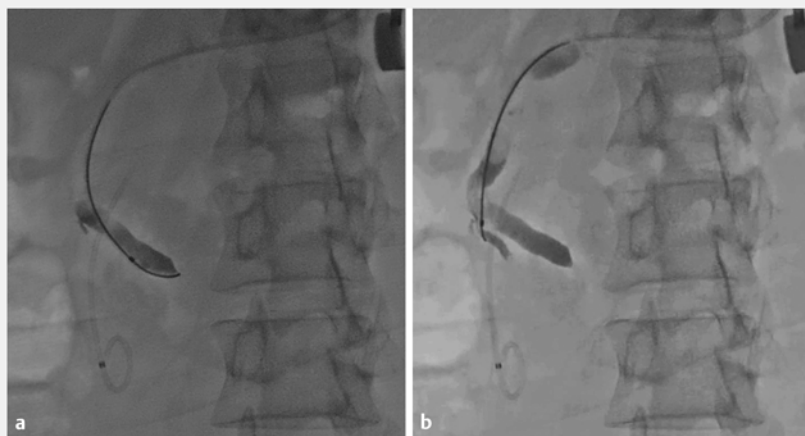
► **Fig. 1** Failed endoscopic retrograde cholangiopancreatography in chronic pancreatitis with pancreas divisum. During major papilla cannulation, the hindered guidewire at the head pancreatic duct and invisible opacification of the body pancreatic duct indicated pancreas divisum; meanwhile, pancreatic duct cannulation through the minor papilla failed due to ambiguous orifice (inset image).



► **Fig. 2** The dilated main pancreatic duct was punctured under endoscopic ultrasonography guidance and the pancreatography confirmed that the needle was in the body pancreatic duct.



► **Video 1** The basic steps of rendezvous endoscopic ultrasonography-guided pancreatic duct drainage.



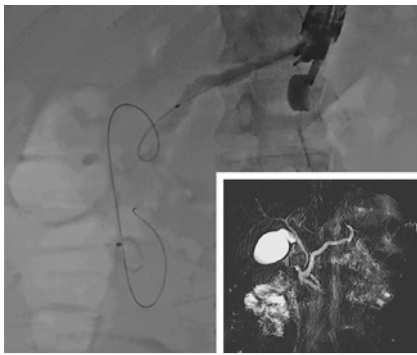
► **Fig. 3** The coiled guidewire was wandering within branches of the main pancreatic duct.

A 34-year-old man with recurrent pancreatitis was referred for endoscopic retrograde cholangiopancreatography (ERCP) [1], but cannulation of the main pancreatic duct (MPD) repeatedly failed at several teaching hospitals owing to pancreas divisum and invisible minor papilla orifice (► **Fig. 1**) [2]. Thus, we decided to perform rendezvous endo-

scopic ultrasonography (EUS)-guided pancreatic duct drainage (EUS-PD-RV) (► **Video 1**).

The dilated MPD was punctured using a 19-G needle (► **Fig. 2**). Unfortunately, the guidewire wandered within MPD branches instead of advancing into the duodenum (► **Fig. 3**). Magnetic resonance cholangiopancreatog-

raphy (MRCP) was reviewed and indicated that the neck pancreatic duct connected with the minor papilla. Under combined navigation of MRCP and antegrade pancreatography, the guidewire was precisely maneuvered to rebound from the branch duct and drill into the duodenum (► **Fig. 4**). Regular ERCP was attempted again but still failed due to



► **Fig. 4** Under combined guidance of fluoroscopy and magnetic resonance cholangiopancreatography, the guidewire was successfully maneuvered through the minor papilla.

the stenotic orifice of the minor papilla. Dilating bougies were used to expand the needle tract and the orifice of the minor papilla. The guidewire was then grasped and pulled into the duodeno-scope; the guidewire was covered by the bougie during the whole rendezvous process (► **Fig. 5**). Over the guidewire, the sphincterotome cannulated the MPD. After the MPD stricture was further dilated using an 8.5-Fr bougie, a 7-Fr pancreatic stent was placed across the body/tail of the MPD.

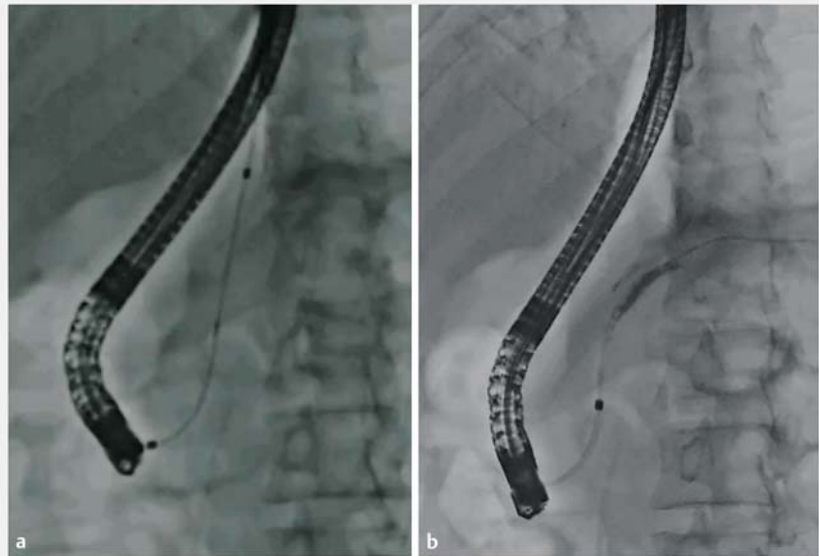
As initial passage of a guidewire across the papillae/anastomoses is the cornerstone of successful EUS-PD-RV [3,4], we present a precise and safe guidewire maneuvering technique to tackle a really difficult EUS-PD-RV procedure. The technique has two benefits: 1) as the multiple dilated branches of the MPD make passage of the guidewire to the papillae difficult, our technique precisely directs the guidewire across the papilla under combined imaging navigation; 2) as the guidewire may split and bring transection injury to the pancreas during the rendezvous process, our technique safely covers the guidewire using the dilating bougie.

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## Competing interests

The authors declare that they have no conflict of interest.

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► **Fig. 5** After the guidewire was pulled into the duodeno-scope, retrograde cannulation of the main pancreatic duct was finally achieved.

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## Bibliography

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