

Endoscopic ultrasound-guided pancreatic duct drainage: technical approaches to a challenging procedure

Video 1

EUS-PDD

- Technically challenging
- May be associated with significant adverse events
- Performed by skilled endoscopist who are experienced with both EUS and ERCP

Three approaches to endoscopic ultrasound-guided pancreatic duct drainage.

Video 2



Transluminal pancreaticogastrostomy approach to endoscopic ultrasound-guided pancreatic duct drainage.

Video 3



Transluminal pancreaticoduodenostomy approach to endoscopic ultrasound-guided pancreatic duct drainage.

Video 4



Antegrade drainage approach to endoscopic ultrasound-guided pancreatic duct drainage.

Video 5



Rendezvous approach to endoscopic ultrasound-guided pancreatic duct drainage.

Endoscopic ultrasound-guided pancreatic duct drainage (EUS-PDD) is an effective treatment modality for pancreatic pathologies, including chronic pancreatitis, major or minor papilla inaccessible via endoscopic retrograde cholangiopancrea-

tography, and postsurgical pancreaticoenterostomy stricture [1,2]. Technically, however, EUS-PDD can be very difficult and is potentially associated with significant complications [3]. The following series of videos aims to improve the under-

standing and performance of EUS-PDD by describing the three approaches to this challenging procedure (▶ **Video 1**): the transluminal stenting, antegrade drainage, and rendezvous method. To our knowledge, this is the first published video series focused on the different methods and steps of this intricate procedure.

Case 1 describes a 55-year-old man with a pancreaticoenterostomy stricture following Whipple surgery. It showcases the transluminal approach, where a stent is placed upstream from the stricture forming a pancreaticogastrostomy (▶ **Fig. 1 a–c**, ▶ **Video 2**). The patient's symptoms improved dramatically following the procedure.

Case 2 is another example of the transluminal approach; however, this time it demonstrates the creation of a pancreaticoduodenostomy with the insertion of



Fig. 1 Transluminal approach to endoscopic ultrasound-guided pancreatic duct drainage. **a** The dilated pancreatic duct measured 4 mm at the pancreatic body. **b** A 19-gauge needle successfully punctured the main pancreatic duct, and a guidewire was subsequently inserted. **c** Following tract dilation, a plastic pigtail pancreatic stent was inserted, forming a pancreaticogastrostomy.

a plastic stent in a patient with pancreatic divisum and chronic pancreatitis (▶ **Video 3**).

Case 3 shows antegrade drainage, where a stent is inserted downstream through a pancreaticoenterostomy stricture in order to manage a patient with recurrent pancreatitis following pancreaticoduodenectomy (▶ **Video 4**). The patient responded well to the treatment with no recurrence of pancreatitis at the last follow-up. Case 4 shows the rendezvous technique where EUS-assisted pancreatic access is performed in order to guide subsequent endoscopic retrograde pancreatography in a patient with recurrent alcohol pancreatitis (▶ **Video 5**). The patient was free from pain at the 1-year post-procedure follow-up appointment.

EUS-PDD is an important minimally invasive modality in the management of several pancreatic pathologies. We have described the different approaches and steps needed to perform this intricate procedure in the hope of improving the understanding of the technique and the subtle nuances involved.

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References

- 1 Fujii-Lau LL, Levy MJ. Endoscopic ultrasound-guided pancreatic duct drainage. *J Hepatobiliary Pancreat Sci* 2015; 22: 51–57
- 2 Itoi T, Kasuya K, Sofuni A et al. Endoscopic ultrasonography-guided pancreatic duct access: techniques and literature review of pancreatography, transmural drainage and rendezvous techniques. *Dig Endosc* 2013; 25: 241–252
- 3 Fujii LL, Topazian MD, Abu Dayyeh BK et al. EUS-guided pancreatic duct intervention: outcomes of a single tertiary-care referral center experience. *Gastrointest Endosc* 2013; 78: 854–864

Bibliography

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