ORIGINAL ARTICLE

Eversion of an inverted papilla via EUS-guided rendezvous

Rishad Khan, MD,[1] Thomas M. Runge, MD, MPH,[2] Samuel Han, MD, MS[1]

EUS-guided rendezvous is a safe and effective approach in cases of failed biliary cannulation attributable to atypical papillary morphology.[1] Although a retracted papilla can be seen in stricturing biliary disease, a fully inverted papilla is rare.[2] Here, we describe a case of an inverted papilla that was everted via EUS-guided rendezvous to enable ERCP for choledocholithiasis (Video 1; available online at www.videogie.org).

CASE PRESENTATION

A 45-year-old patient presented with cholecystitis and choledocholithiasis, and was started on antibiotics. They underwent an attempted ERCP at an outside center, which was unsuccessful. Because the patient had a prohibitively high surgical risk, they underwent EUS-guided cholecystoduodenostomy with a lumen-apposing metal stent and were subsequently transferred for another attempt at ERCP. As with all ERCPs we perform, we obtained informed consent for EUS-guided rendezvous if needed. A duodenoscope was brought to the second part of the duodenum. There was no clear papillary orifice, but there was purulent material emanating from the duodenal wall at the expected location of the papilla (Fig. 1). Although we were able to engage this area with the sphincterotome (Jagtome; Boston Scientific, Marlborough, Mass, USA), we could not advance a guidewire or achieve deep biliary cannulation.

We intubated the gallbladder through the cholecystoduodenostomy to perform a rendezvous procedure via the cystic duct (Fig. 2).[3,4] However, multiple attempts at passing a guidewire through the cystic duct orifice in the gallbladder were unsuccessful. In addition, contrast injection into the gallbladder showed no flow of contrast through the cystic duct.

We then advanced an echoendoscope to the duodenal bulb, where we could visualize the common bile duct. A 19-gauge FNA needle (EZ Shot 3; Olympus, Center Valley, Pa, USA) was used to puncture the common bile duct (Fig. 3) and advance a long, angled 0.025-inch guidewire (VisiGlide; Olympus) past the papilla and into the duodenum (Fig. 4).

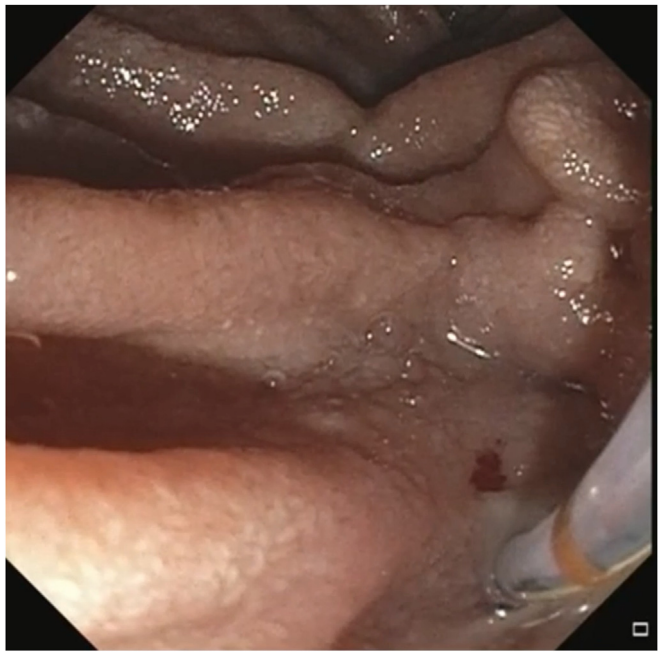

Figure 1. Engagement of sphincterotome with suspected biliary orifice in descending duodenum without evident papillary morphology.

The echoendoscope was removed, and the duodenoscope was advanced to the second portion of the duodenum. The papilla was now readily visible, having been everted by antegrade guidewire passage (Fig. 5). The sphincterotome was used to cannulate the bile duct alongside the rendezvous guidewire. Sphincterotomy and stone extraction with a biliary extraction balloon were then performed (Fig. 6), which yielded sludge and several stones. As the result of incomplete stone clearance, a 10F by 9-cm straight plastic stent was left in place (Fig. 7). The patient continued an additional 5 days of antibiotics and continued to improve clinically with no immediate post-procedure adverse events. They returned to the referring hospital for a follow-up ERCP with complete stone clearance achieved.

CONCLUSIONS

Aberrant papillary morphology can lead to challenging biliary cannulation.[5] In this case, the papilla was completely

2468-4481
https://doi.org/10.1016/j.vgie.2024.12.008

Current affiliations: Division of Gastroenterology and Hepatology, Mayo Clinic, Rochester, Minnesota, USA (1), Division of Gastroenterology, Central Ohio VA, Columbus, Ohio, USA (2).

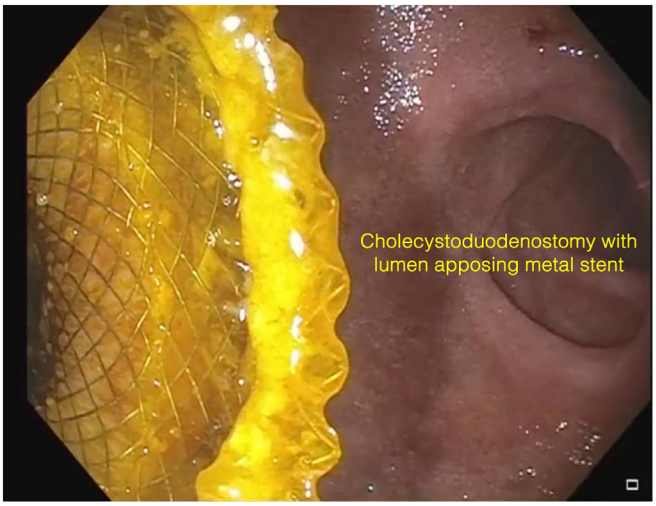

Figure 2. Pre-existing cholecystoduodenostomy with a 10-mm × 10-mm lumen-apposing metal stent.

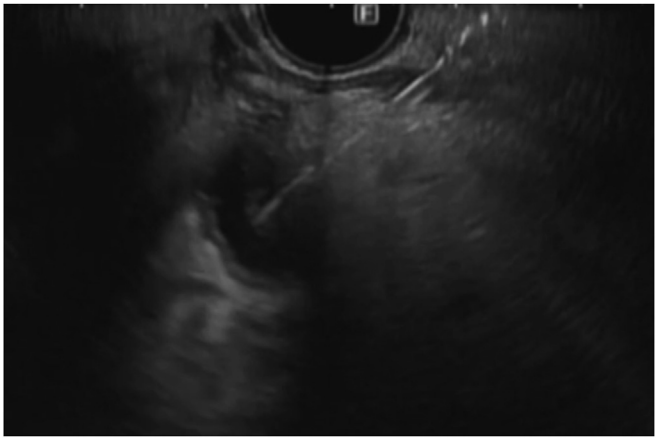

Figure 3. Puncture of the common bile duct with a 19-gauge needle to enable rendezvous.

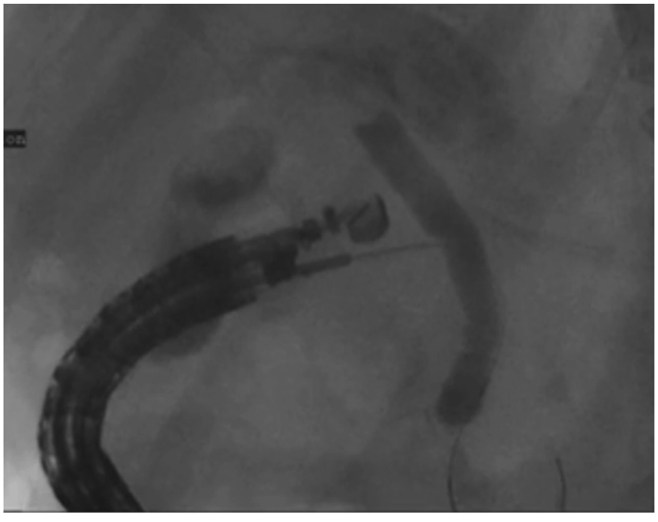

Figure 4. Advancement of a 450-cm, 0.025-inch angled guidewire through the 19-gauge needle, into the common bile duct, out through the papilla, and into the small bowel.

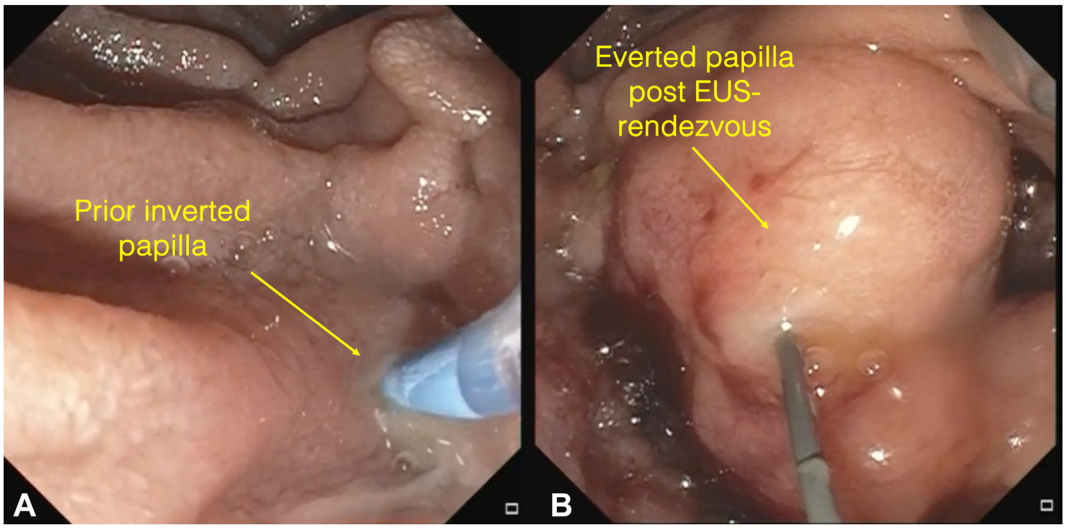

Figure 5. Previous inverted papilla **(A)**, and postrendezvous everted papilla **(B)**.

Figure 6. Extracted common bile duct stones after sphincterotomy and balloon sweep.

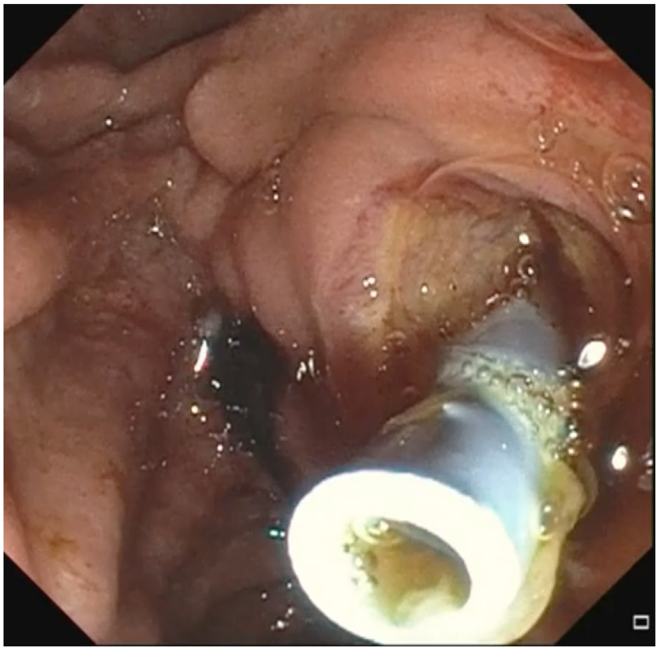

Figure 7. A 10F × 9-cm straight plastic biliary stent left in place as the result of incomplete stone clearance.

inverted without known pre-existing biliary disease. Antegrade wire passage resulted in eversion of the papilla and enabled subsequent ERCP and management of choledocholithiasis. In addition to providing a guidewire that can be grasped and brought into the duodenoscope, rendezvous can lead to a more favorable papillary morphology. Indeed, when traditional rendezvous with a guidewire is not successful, the injection of methylene blue has also led to successful ERCP.[6,7] In summary, EUS-guided rendezvous remains an indispensable technique in cases of difficult biliary cannulation due to challenging papillary morphology.

PATIENT CONSENT

The patient in this article has given written informed consent to publication of the case details.

DISCLOSURE

Dr Han is a consultant for Boston Scientific. All other authors disclosed no financial relationships.

REFERENCES

1. Klair JS, Zafar Y, Ashat M, et al. Effectiveness and safety of EUS rendezvous after failed biliary cannulation with ERCP: a systematic review and proportion meta-analysis. J Clin Gastroenterol 2023;57:211-7.
2. Parlak E, Ciçek B, Dişibeyaz S, et al. An endoscopic finding in patients with primary sclerosing cholangitis: retraction of the main duodenal papilla into the duodenum wall. Gastrointest Endosc 2007;65:532-6.
3. Law R, Baron TH. Endoscopic ultrasound-guided gallbladder drainage to facilitate biliary rendezvous for the management of cholangitis due to choledocholithiasis. Endoscopy 2017;49:E309-10.
4. Sanchez-Ocana R, de Benito Sanz M, Nájera-Muñoz R, et al. Rendezvous ERCP via endoscopic ultrasound-guided gallbladder drainage to salvage a dislodged lumen-apposing metal stent during choledochoduodenostomy. Endoscopy 2022;54:E65-7.
5. Balan GG, Arya M, Catinean A, et al. Anatomy of major duodenal papilla influences ERCP outcomes and complication rates: a single center prospective study. J Clin Med 2020;9:1637.
6. Rodríguez-Escaja C, Consiglieri CF, Gornals JB. Endoscopic ultrasound-guided methylene blue injection to achieve bile duct cannulation after failed ERCP. Endoscopy 2017;49:E219-20.
7. Consiglieri CF, Gornals JB, Albines G, et al. EUS-guided methylene blue cholangiopancreatography for benign biliopancreatic diseases after failed ERCP. Gastrointest Endosc 2016;84:152-7.