Pancreatic duct rendezvous with pancreatoscopy through the minor papilla

Erin Y. Chew, BS, Bibin T. Varghese, BS, Robert J. Sealock, MD

An 18-year-old woman presented to our hospital with diffuse abdominal pain and visible distention. She reported a history of acute pancreatitis 2 months earlier. Physical examination revealed diffuse abdominal tenderness without rebound and an abdominal fluid wave. CT of the abdomen and pelvis (Figs. 1 and 2) showed a large volume of ascites and marked dilation of the pancreatic duct to 16 mm, with a hypodense filling defect within the pancreatic duct near the head of the pancreas.

Diagnostic paracentesis revealed yellow turbid fluid with a serum albumin to ascites gradient of 0.7 g/dL, elevated total protein, and elevated amylase level of 3485 U/L consistent with pancreatic ascites. MRCP revealed similar findings to that of the CT of the abdomen (Fig. 3). On EUS, a hypoechoic heterogeneous intraductal lesion was visualized within the distal pancreatic duct with upstream dilatation to 10 mm. On ERCP, attempts to pass a guidewire through the ampulla of Vater around the pancreatic duct lesion were unsuccessful (Figs. 4 and 5).

The cytology aspirate obtained from the pancreatic duct was negative for malignancy. EUS also showed a 14.5-× 11.3-cm unilocular cyst without internal debris within the body of the pancreas, compressing the body/fundus of the stomach. Cyst aspiration revealed elevated amylase, low carcinoembryonic antigen, and no mucin, consistent with a pancreatic pseudocyst.

Three days later, repeated EUS was performed in which the pancreatic duct was punctured proximal to the intraductal lesion with a 19-gauge FNA needle through the stomach wall (Fig. 6 and Video 1). A 0.035-inch hydrophilic guidewire was then advanced through the needle into the pancreatic duct. The guidewire traversed beyond the intraductal lesion and exited into the duodenum through the minor papilla.

The minor papilla was used as the site for cannulation because the wire did not pass through the major papilla, and the duct of Santorini was mildly dilated to 5 mm, which would allow for later insertion of a pancreatoscope. Using the rendezvous guidewire, we inserted a cholangiopancreatoscope, and a pancreatic duct stone was visualized.

Electrohydraulic lithotripsy was performed with a power level of 70%, a frequency of 50 shots per second, and number of shots of 5. Stone fragments were removed with the

Figure 1. CT view of the abdomen and pelvis showing marked dilation of the pancreatic duct measuring up to 1.1 cm with a subtle, hypodense filling defect within the distal pancreatic duct near the head of the pancreas.

Figure 2. CT view of the abdomen and pelvis showing a circumscribed cystic lesion containing simple fluid along the undersurface of the pancreatic tail measuring 7.9 cm in largest diameter.

Written transcript of the video audio is available online at www.VideoGIE.org.
use of an extraction balloon. The epithelial lining did not show a fish-egg appearance or villous features to suggest an underlying intraductal neoplasm. An occlusion pancreatogram confirmed clearance of the stone. A 10F, 5-cm plastic pancreatic duct stent was inserted over the wire and deployed. The pancreatic pseudocyst was then drained by EUS-guided cystogastrostomy with the use of a 15-mm lumen-apposing metal stent (LAMS).

An occlusion pancreatogram 4 weeks later showed no filling defect within the pancreatic duct. The duct of Wirsung was opacified and terminated at the level of the major...
ampulla. The LAMS along the posterior wall of the gastric body was removed. A prophylactic pancreatic duct stent was inserted through the minor ampulla, and the patient experienced clinical resolution of her ascites.

In the past, obstructing pancreatic duct stones have been treated with a surgical lateral pancreaticojejunostomy and open-duct stone removal. However, endoscopic techniques to remove main pancreatic duct stones have been developed and include pancreatic sphincterotomy, stone retrieval (balloons, baskets, or rat-tooth forceps), stent placement, and mechanical lithotripsy. Endoscopic extraction of pancreatic duct stones is often more difficult than removing biliary calculi because pancreatic duct stones are usually harder and located behind strictures. EUS-guided pancreatic duct rendezvous can assist in removing larger stones when deep cannulation of the pancreatic duct through the major papilla is not feasible. We report a unique use of a rendezvous procedure to remove an obstructing pancreatic duct stone in the setting of pancreatic ascites and a symptomatic pancreatic pseudocyst.

**DISCLOSURE**

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

*Abbreviation: LAMS, lumen-apposing metal stent.*