

Endoscopic ultrasound-guided internalization of a pancreaticocutaneous fistula without need for percutaneous manipulation

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A 39-year-old male presented 9 months prior with acute alcoholic necrotizing pancreatitis. A 21 cm × 7cm walled-off pancreatic necrosis (WOPN) developed with main pancreatic duct disruption and upstream pancreatic ductal disconnection. A percutaneous pigtail drain was placed. After resolution of the collection, high volume output from the pancreaticocutaneous fistula remained. Endoscopic retrograde cholangiopancreatography showed complete main pancreatic duct obstruction [Figure 1]. A prophylactic pancreatic stent was placed. Contrast injection through the percutaneous drain filled the upstream pancreatic duct. EUS-guided internalization was undertaken. A linear echoendoscope (Olympus GFUCT-180, Center Valley, PA, USA) was positioned in the stomach. Endosonographically, the pigtail drain was visualized [Figure 2]. The residual cavity, marked by the internal pigtail was punctured transgastrically with a 19-gauge fine-needle aspiration needle (Expect, Boston Scientific, Marlborough, MA, USA) [Figure 3]. A 0.035" guidewire (450 cm Hydra Jagwire, Boston Scientific) was advanced through the needle and passed out the percutaneous tract. The gastric wall was balloon dilated to 6 mm (Hurricane™, Boston

Scientific) [Figure 4]. The echoendoscope was removed; a standard side-viewing endoscope was introduced alongside the initial wire. A second guidewire was advanced and coiled inside the pigtail cavity [Figure 5]. The pancreaticogastrostomy was then stented with two 7 Fr 3 cm double pigtail stents [Figure 6]. The patient's percutaneous drain was removed during the procedure. The pancreaticocutaneous fistula output ceased several days later. There were no adverse events, and the patient was clinically well 4 months later.

DISCUSSION

Necrotizing pancreatitis and WOPN can lead to complete duct disruption and subsequent main pancreatic duct disconnection. When percutaneous drainage is used as the sole modality for management WOPN, an external fistula can develop from the upstream pancreatic duct through the drain site after the collection resolves. Management options for these patients are long-term percutaneous drain placement or surgery, both associated with substantial morbidity.^[1] While there are reports of

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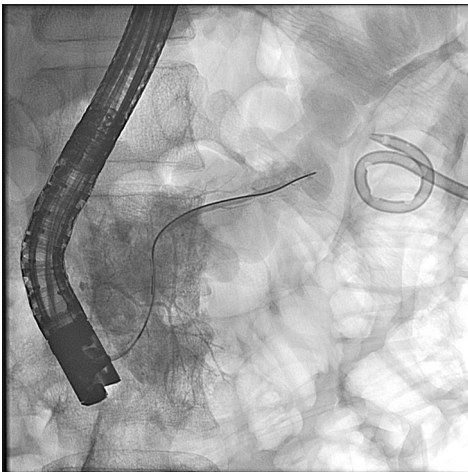


Figure 1: Fluoroscopic image. Endoscopic retrograde cholangiopancreatography transpapillary wire placement shows a disconnected pancreatic duct with pancreatic acinarization. The percutaneous drain can be seen



Figure 2: Endosonographic image. Visualization of the pigtail drain within a small cavity

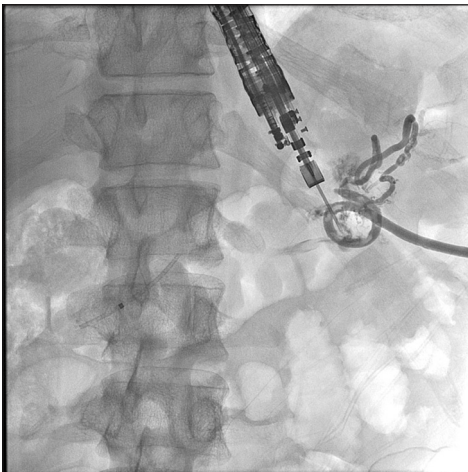


Figure 3: Fluoroscopic image. Percutaneous drain transgastric puncture under endosonographic guidance with pancreatogram of the tail of the pancreas and a small cavity around the drain

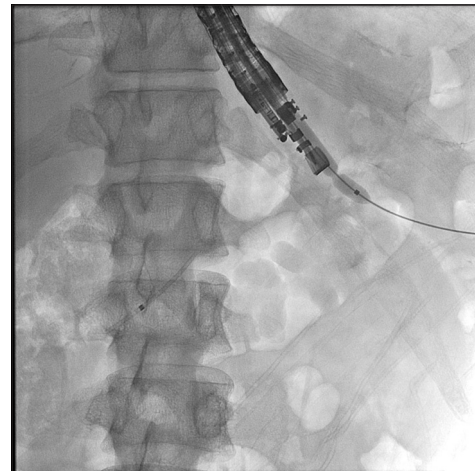


Figure 4: Fluoroscopic image. Dilation of the pancreaticogastrostomy tract with 6 mm balloon

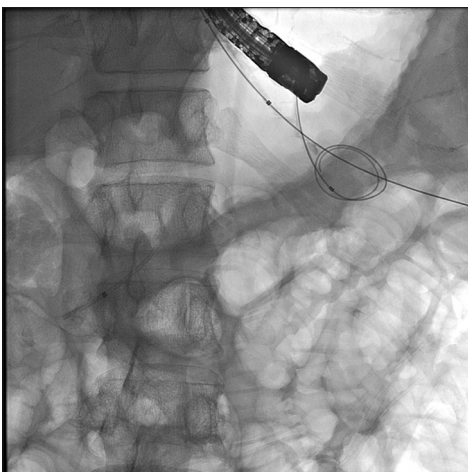


Figure 5: Fluoroscopic image. Passage and coiling of a second guidewire into the cavity



Figure 6: Fluoroscopic image. Stenting of the pancreaticogastrostomy with two 7 Fr 3 cm double pigtail plastic stents. A third, misdeployed stent is in the gastric lumen

pancreaticocutaneous fistula closure by injection of fibrin glue and cyanoacrylate into the tract,^[2] adverse events can

occur, and it does not provide a drainage solution for the functional, disconnected pancreatic gland. Previous rendezvous endoscopic and percutaneous approaches have been used to internalize pancreaticocutaneous fistula^[3,4] by directing pancreatic secretions back into the intestinal lumen allowing closure of the external pancreatic fistula. This prevents recurrent collections and potentially preserves the parenchymal function of the disconnected gland. However, to our knowledge, internalization of a pancreaticocutaneous fistula not been reported without using the percutaneous tract to pass needles across into the stomach. In our case a pancreaticocutaneous fistula secondary to a disconnected pancreatic duct was internalized using EUS-guidance. The use of a duodenoscope, while not mandatory may simplify the procedure, since side view, mechanics and maneuverability are better than with echoendoscopes.

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Conflicts of interest

There are no conflicts of interest.

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