



# Endoscopic Ultrasound-Guided Drainage of Splenic Pseudocyst Communicating with Pancreatic Duct

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Splenic pseudocyst as result of pancreatic ductal leak is not uncommon. Endoscopic drainage of splenic pseudocyst is generally not preferred because of risk of bleeding and difficult location to access endoscopically. Percutaneous drainage (PCD) and surgery are associated with high morbidity and can result into fistula formation. In this case report, we have demonstrated endoscopic ultrasound (EUS)-guided drainage of splenic pseudocyst communicating with pancreatic duct (PD).

A-35-year-old male who was suffering with recurrent acute pancreatitis for the last 4 years now presented with complaint of left upper quadrant pain and fever for 15 days. His laboratory evaluation showed leukocytosis and raised serum amylase and lipase. Magnetic resonance cholangiopancreatography (MRCP) showed increased size of pseudocyst compared with previous computed tomography (CT) scan and mildly dilated irregular PD communicating with splenic pseudocyst (100 × 112 mm) (→Fig. 1A–C). On MRCP, pseudocyst was visualized within splenic capsule rather than in splenic bed (→Fig. 2A, B). As there was high risk of fistula with PCD, EUS-guided drainage of splenic pseudocyst was performed. EUS-guided drainage of pseudocyst was performed with curvy-linear echoendoscope (UCT-180; Olympus Ltd, Tokyo, Japan) in left lateral position under propofol sedation (Video 1). Collection was accessed from cardia and with 19-gauge (EZ shot 2, Olympus, Tokyo, Japan) needle. After puncturing collection dark brown color fluid was aspirated. Through the needle 0.025 guidewire (Visi-Glide, Olympus corporation, Tokyo, Japan) was coiled into cavity and needle was then removed. Over the guidewire 6 Fr cystotome (Endo-flex GmbH Dusseldorf, Germany) was passed and tract was dilated and 7Fr 7CM double pig tail stent (Cook Medical, Bloomington, IN, USA) was deployed (→Fig. 3A–D). Postprocedure CT showed significant reduc-

tion in size of collection. Plastic stent was preferred over the metal stent considering the puncture point in cardia and location of the pseudocyst, that is, splenic intracapsular to prevent subsequent complications (perforation and bleeding). Subsequently, he underwent endoscopic retrograde cholangiopancreatography. Initially PD cannulation was attempted via major papilla with a guidewire. Over the guidewire major papilla sphincterotomy (CleverCut 2, Olympus, Tokyo, Japan) was done; however, on further pushing guidewire was repeatedly getting curved and came out through minor papilla. Sphincterotome was then exchanged with needle knife and over the guidewire minor papilla papillotomy was performed. Initial guidewire was then withdrawn from major papilla and PD cannulation was done through minor papilla with tapered tip cannula. Guidewire was placed deep into the PD via minor papilla and pancreatogram was taken. Pancreatogram showed partial pancreas divisum with normal diameter PD and leak from tail region. Minor papilla sphincterotomy done and pancreatic stent (5Fr 12 cm single pigtail, Cook Medical, Bloomington, IN, USA) placed across the leak (→Fig. 4A–C). Post-procedure patient was stable and discharged on oral antibiotics. On telephonic conversation with him, he was asymptomatic and both PD stent and cystogastric stent were removed at 3 months after resolution of collection at his primary care center.

## Learning Objectives

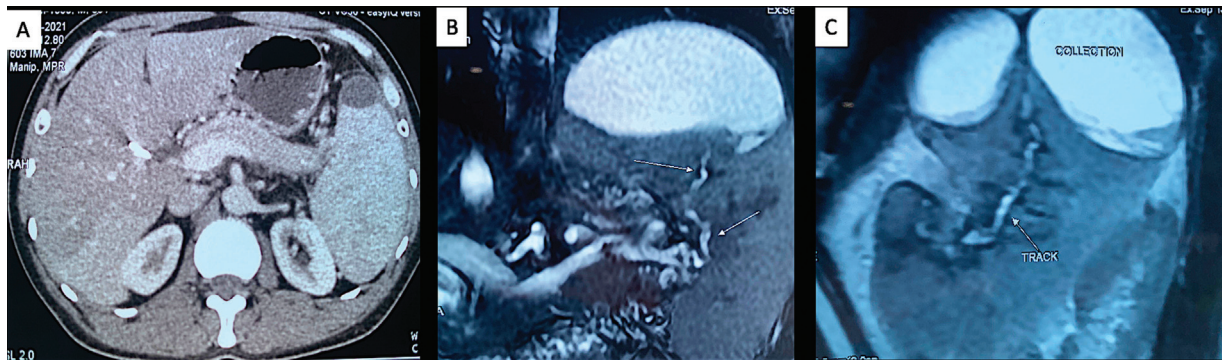
Endoscopic ultrasound (EUS)-guided drainage is feasible and effective for large splenic pseudocyst communicating with pancreatic duct (PD). EUS-guided drainage with plastic stents can be a safer option for intracapsular pseudocyst compared with biflanged or lumen apposing metal stent. Transpapillary drainage of splenic pseudocyst has been shown to be effective

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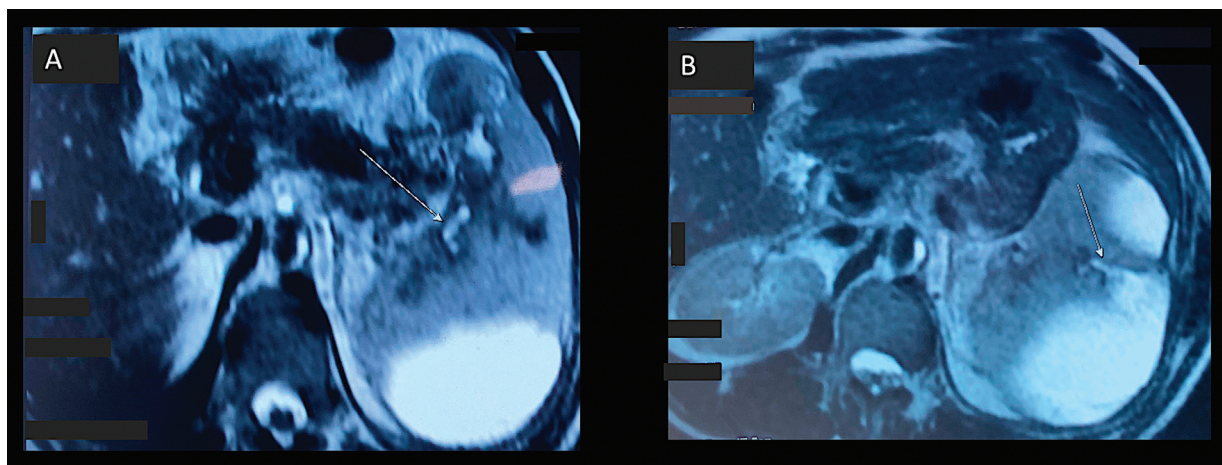
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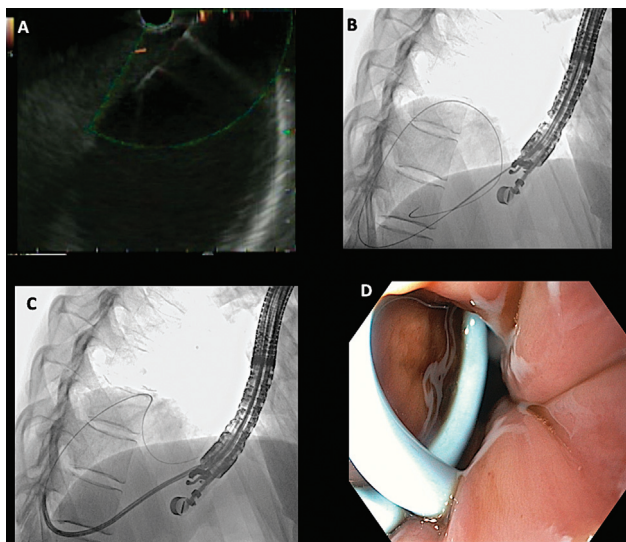
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**Fig. 1** (A–C) Progressive images showing increase in size of splenic pseudocyst. (A) Computed tomography showing small collection on superior pole of spleen. (B and C) Magnetic resonance cholangiopancreatography showing large collection within splenic capsule communicating with pancreatic duct (white arrow is pointing out linear tract from PD going to the collection suggestive of communication).



**Fig. 2** (A–B) Magnetic resonance cholangiopancreatography showed collection in splenic capsule with white arrow is pointing towards leak.

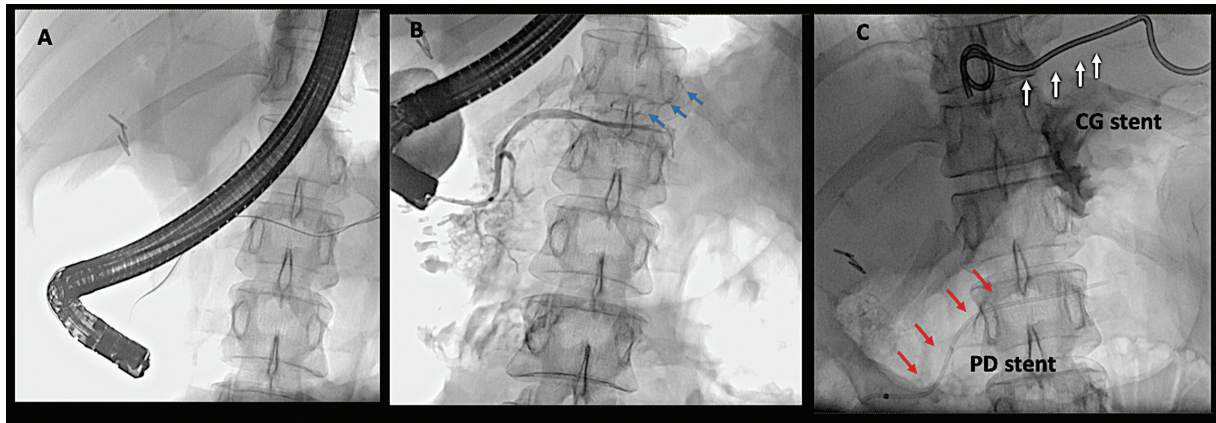


**Fig. 3** (A–D) Endoscopic ultrasound (EUS)-guided drainage of splenic pseudocyst. (A) Splenic pseudocyst punctured with 19-gauge needle under EUS guidance. (B) Fluoroscopy showing coiling of guidewire through 19-gauge needle into the pseudocyst. (C) Deploying distal flange of plastic stent under fluoroscopic guidance. (D) Endoscopic view of deployed plastic stent within splenic pseudocyst.

in various case series; however, there is very limited data on EUS drainage.<sup>1,2</sup> In this case report, we have showed both transmural drainage with plastic stent and transpapillary drainage is effective in large splenic pseudocyst. Further studies with large sample are required to demonstrate the safety of EUS drainage in splenic pseudocyst.

#### Video 1

Video demonstrates management of communicating splenic pseudocyst by transmural and transpapillary drainage. Endoscopic ultrasound (EUS)-guided drainage of pseudocyst was performed with plastic stent. Post-EUS-guided drainage patient underwent endoscopic retrograde cholangiopancreatography for pancreatic ductal leak. Pancreatogram showed partial pancreas divisum with leak in tail for which pancreatic duct stent was placed across the leak via minor papilla. Online content including video sequences viewable at: <https://www.thieme-connect.com/products/ejournals/html/10.1055/s-0042-1758775>.



**Fig. 4** (A–C) Endoscopic retrograde pancreatography for pancreatic ductal leak. (A) Pancreatic duct was cannulated with guidewire. (B) Pancreato-gram showed pancreatic ductal leak from tail region (blue arrow is indicating leak). (C) Fluoroscopic showing pancreatic duct stent and cysto-gastric (CG) plastic stent within splenic pseudocyst [Red arrow is showing pancreatic duct and black arrow is showing cystogastric (CG) stent in situ].

**Conflict of Interest**  
None declared.

#### References

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