Brief Report

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# EUS-Assisted Rendezvous Stenting of the Pancreatic Duct for Chronic Calcifying Pancreatitis with Multiple Pseudocysts

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**Key Words**
Endoscopic ultrasound · Rendezvous stenting · Chronic pancreatitis · Pseudocyst

**Abstract**
***Introduction:*** The best choice of endoscopic drainage of pancreatic pseudocysts complicating chronic pancreatitis is currently unknown, with EUS-guided transmural drainage competing with ERCP transpapillary techniques. However, recent studies currently recommend the use of both techniques in complex cases. ***Case Presentation:*** We present the case of a 60-year-old male patient with chronic calcifying pancreatitis, with severe ductal obstruction and multiple communicating pancreatic pseudocysts. The patient presented in the emergency department with weight loss, jaundice, steatorrhea and diabetes. Initial imaging evaluation (by transabdominal US, EUS and MRCP) depicted a dilated common bile duct, intrahepatic bile ducts and dilated main pancreatic duct (up to 1 cm) with multiple stones, as well as three pseudocysts at the level of the pancreatic head and one pseudocyst at the level of the pancreatic tail. ERCP with direct cannulation and transpapillary drainage of the bile duct or pancreatic duct was unsuccessful. Consequently, a EUS-assisted rendezvous stenting of the pancreatic duct was done, with the transpapillary placement of a 5-cm stent. Biliary cannulation was also possible with the placement of a double pigtail 9-cm stent in the common bile duct. Subsequent evolution was rapidly favorable with the disappearance of the pancreatic pseudocysts on the control CT after 24 h. ***Conclusion:*** Our case clearly showed the benefit of combined draining procedures even in cases of chronic pancreatitis with multiple pseudocysts where surgical drainage was previously deemed necessary.



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## Introduction

Pancreatic pseudocysts are inflammatory fluid collections associated with acute or chronic pancreatitis [1]. Endoscopic drainage of symptomatic pancreatic pseudocysts is a good option in expert hands, with a success rate of more than 90%, complications in 20% of cases, recurrence rates of 10–20%, and mortality of approximately 0.2% [2]. A transpapillary approach during ERCP is used when the pseudocyst is communicating with the pancreatic duct or for pseudocysts associated with pancreatic duct strictures or leaks [3, 4]. EUS-guided transmural drainage (cystogastrostomy or cystoduodenostomy) can

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**Fig. 1.** Magnetic resonance cholangiopancreatography showing the pancreatic head pseudocysts, a dilated CBD and dilated pancreatic duct. Small filling defects representing stones are visible inside the pancreatic duct towards the tail (arrows).

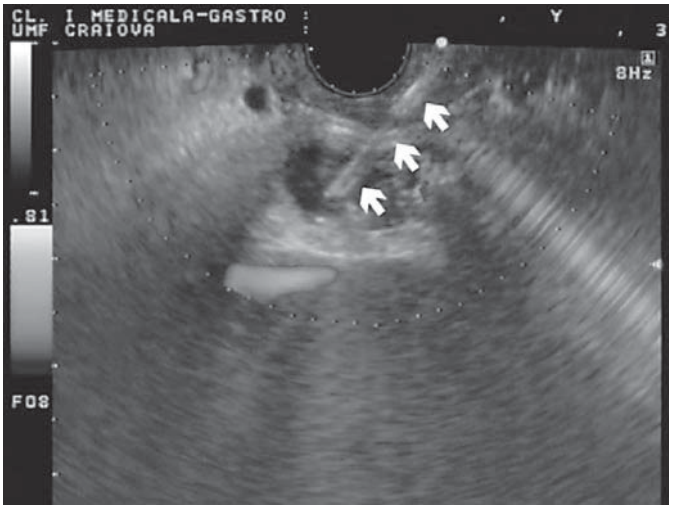


**Fig. 2.** EUS-guided transgastric puncture of the dilated pancreatic duct with a 19-gauge EUS-FNA needle. The position of the needle tip can be easily checked under real-time EUS control (arrows).

also be done safely, even in the absence of a visible bulge inside the gastroduodenal tract or in cases with extensive collateral vessels [5, 6]. Simple, unilocular pancreatic pseudocysts can be drained by endoscopy, while the presence of multiple pancreatic pseudocysts, with debris inside, and/or septa usually represents an indication for surgical intervention [7].

For the cases where endoscopic drainage is considered as first-line treatment, there is still controversy regarding the relationship between ERCP and EUS, as well as the initial approach (transpapillary, transmural or combined). Several groups advocate ERCP before endoscopic drainage or surgery, to delineate the morphology of the pancreatic duct, especially when possible strictures or leakage are suspected [3, 4]. However, ERCP is frequently difficult in chronic obstructive pancreatitis due to inflammatory stenosis of the duodenum or the papilla of Vater. EUS-assisted rendezvous drainage of obstructed pancreatic duct was previously described in a few case reports, to gain access to the pancreatic duct if previous transpapillary drainage was not possible [8–10].

We present the case of a patient with chronic calcifying pancreatitis, with severe ductal obstruction and multiple communicating pseudocysts. Transpapillary access was gained through a EUS-assisted rendezvous procedure, with subsequent stenting of both the pancreatic duct and the common bile duct (CBD). This was followed by immediate resolution of the symptoms and disappearance of the pseudocysts during the first 24 h, as well as after 6 months of follow-up.

## Case Report

A 60-year-old male patient presented in the emergency department with weight loss, jaundice, steatorrhea and diabetes. Biological exams during admission indicated high leukocytes (10,000/mm$^3$), high serum glucose (312 mg/dl), high alanine aminotransferase (102 IU/l), high aspartate aminotransferase (70 IU/l), high bilirubin (2.7 mg/dl), high alkaline phosphatase (458 IU/l) and high γ-glutamyltranspeptidase (245 IU/l). Both amylase and lipase were normal. Serum CEA and CA19-9 were also within normal values.

Initial imaging evaluation by transabdominal ultrasound depicted a dilated CBD, intrahepatic bile ducts and dilated main pancreatic duct (up to 10 mm) with multiple small stones (below 5 mm), as well as three pseudocysts at the level of the pancreatic head and one pseudocyst at the level of the pancreatic tail (4.2, 3.4, 3.1 and 3.4 cm, respectively). EUS with color Doppler was performed using a therapeutic linear ultrasound endoscope (Olympus UCT 140-AL1, Hamburg, Germany) coupled with the corresponding ultrasound system (Aloka Prosound 5000, Tokyo, Japan) and showed complex pseudocysts with septations inside or debris. Doppler examination showed enlarged perigastric collaterals and stenosis of the splenic vein which was compressed by one of the pseudocysts. MRCP also showed the complex relations between the pancreatic head pseudocysts, the bile duct and the pancreatic duct (fig. 1).

Due to the severe obstruction of the pancreatic duct, ERCP with direct cannulation and transpapillary drainage of both the bile duct and pancreatic duct was initially attempted, but it was