When a Pseudocyst Turns Perilous: A Case of Vascular and Pancreatic Complications in Tandem

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INTRODUCTION

- Pancreatic pseudocysts (PPCs) occur in **20–30%** of chronic pancreatitis patients.
- This case demonstrates **multiple concurrent acute and chronic PPC complications**:
  - **Intra-cystic hemorrhage**
  - **Superior mesenteric vein (SMV) compression**
  - **Portal venous thrombosis**
  - **Splenic venous pseudo-aneurysm**
  - **Recurrent pancreatitis with pancreatic duct disconnection**

CASE DESCRIPTION

62-year-old male with chronic alcohol-related pancreatitis, multiple pancreatic pseudocysts (PPCs) and hypertension who presented with severe intermittent abdominal pain radiating to the back, abdominal pressure and nausea for several weeks.

Vitals: HR 95 bpm, BP 190/93 mmHg, SpO_2 98% RA.

Exam: Epigastric tenderness; no peritoneal signs.

Labs: WBC 14.0 × $10^3/\mu L$, amylase 1397, lipase 7687 & ALP 117 U/L.

CT Abdomen/Pelvis:

- Superior PPC 6.6 cm, inferior PPC 5.3 cm (increased from 4.5 cm), both in uncinate process extending to neck.
- Severe **SMV compression** by superior PPC.
- Fat stranding consistent with acute pancreatitis.
- **Hemorrhage** into inferior PPC, upstream pancreatic duct dilation, right portal vein branch thrombosis.

CT Angiogram: Splenic vein pseudo aneurysm.

Acute treatment: IV fluids, IV analgesics; symptoms improved.

Endoscopic interventions:

- Upper endoscopy, EUS, ERCP: gastroduodenal artery wrapped around anterior collection, no safe cystogastrostomy window.
- Pancreatogram: walled-off necrosis, active extravasation & pancreatic duct disconnection.
- Pancreatic sphincterotomy and straight duct stent placement across disconnection.

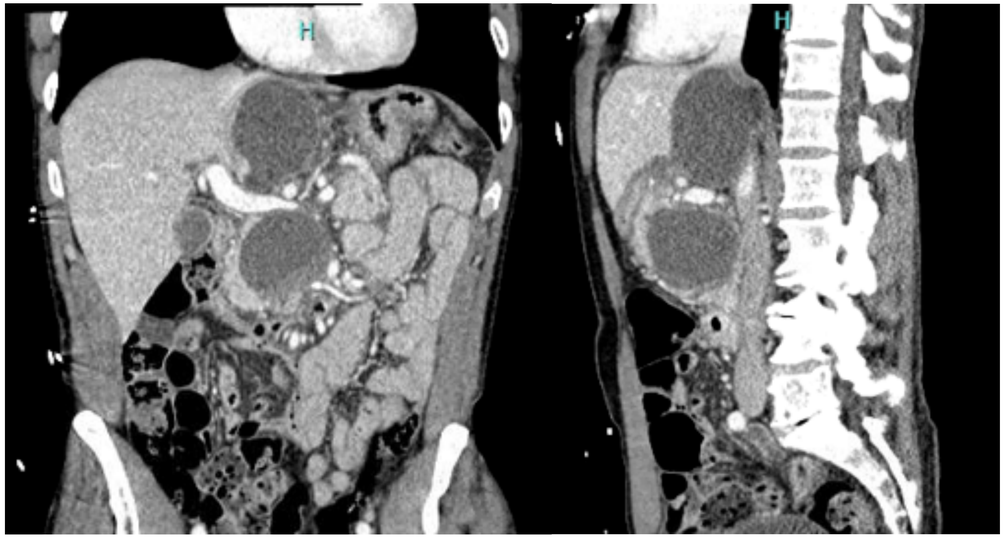

Figure 1. Contrast enhanced CT showing new evidence of hemorrhage into the inferior pseudocyst (left) and severe superior mesenteric vein (SMV) compression by superior pseudocyst (right).

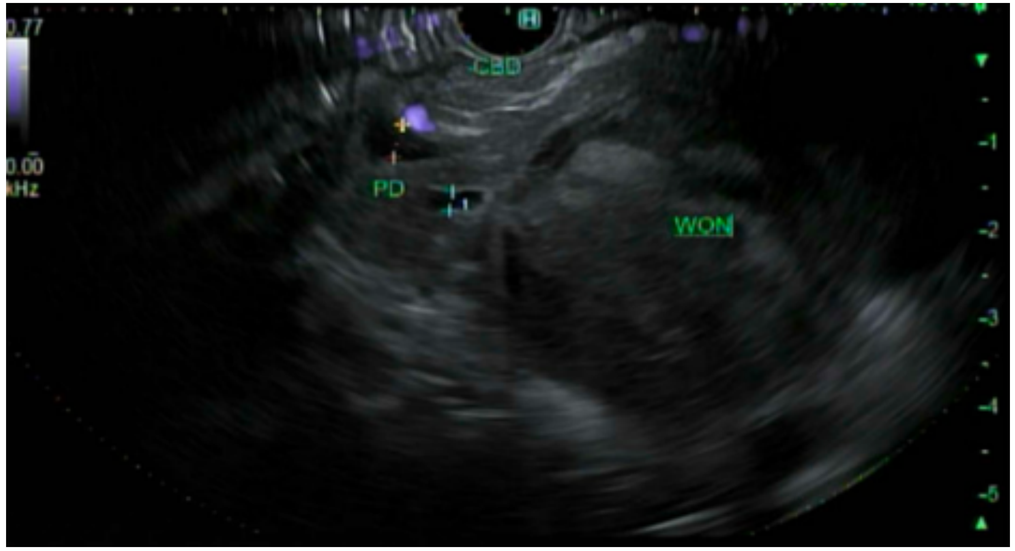

Figure 2. Endoscopic US showing walled-off necrosis and active extravasation in the neck of pancreas suggesting pancreatic duct disconnection

DISCUSSION

- Formed by pancreatic enzyme leakage causing aseptic autolysis and fibrin deposition, creating a non-epithelial walled-off cavity persisting >4 weeks.
- Complications include hemorrhage, rupture, infection, and compression of adjacent structures such as the biliary system, duodenum, and portal venous system.
- Asymptomatic, low-risk PPCs may be observed; intervention is indicated for symptomatic, enlarging (>3 cm), or suspicious pseudocysts.
- Endoscopic or surgical drainage is preferred over percutaneous approaches, which carry higher recurrence rates (>16%).
- Our patient developed multiple severe complications—SMV compression, portal venous thrombosis, hemorrhage, and a rare **splenic vein pseudoaneurysm**—following prior endoscopic drainage.
- Post-discharge evaluation revealed **pancreatic duct disconnection**, leading to recurrent pseudocyst formation due to continued secretion from the isolated pancreatic segment.
- Splenic vein pseudoaneurysm associated with PPCs is extremely rare, with few cases reported in the literature.
- Recognition of underlying ductal disruption and close surveillance are critical to guide management and prevent recurrence.
- Further studies are needed to define optimal strategies for recurrent or complicated pseudocysts.

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