

Pancreaticopleural fistula - A rare complication of pancreatitis

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Abstract

Presentation

A rare case of pancreaticopleural fistula in a 53-year-old female patient who presented with unsteady gait and shortness of breath on the background of chronic pancreatitis.

Diagnosis and Treatment

Diagnosis was confirmed through MRI, MRCP, and analysis of pleural fluid obtained via thoracentesis.

Discussion

This case highlights a rare complication of acute pancreatitis that requires a high index of clinical suspicion for timely diagnosis. Pancreaticopleural fistulas should be considered an important differential diagnosis for pleural effusions, particularly in patients with chronic pancreatitis. Optimal management involves a multidisciplinary team, including gastroenterologists, surgeons, radiologists, and dieticians.

Introduction

Pancreatitis is a common presentation in emergency departments, with severity ranging from mild to fulminant. Supportive care, along with timely recognition and management of both acute and chronic complications, remains the cornerstone of treatment. Pancreaticopleural fistula (PPF) is a rare complication which accounts for 0.4% of patients with pancreatitis requiring a high index of suspicion¹. Here, we describe the delayed presentation of pancreaticopleural fistula following acute severe pancreatitis.

Case Report

A 53-year-old female patient presented with a 2-month history of unsteady gait, decreased appetite, and weight loss. Her medical history included alcohol dependency, acute pancreatitis 3 years previously during COVID-19, and haemochromatosis. Physical examination revealed pallor, decreased breath sounds on the left chest with dullness on percussion, and bilateral pedal oedema. Her abdomen was distended but non-tender and tympanitic on percussion.

Initial investigations revealed a normal full blood count, bilirubin 5 $\mu\text{mol/L}$, alkaline phosphatase 126 U/L, alanine transferase 15 U/L, gamma glutamyl transferase 188 U/L, creatinine 135 $\mu\text{mol/L}$, urea 4.4 mmol/L, serum albumin 18 g/L, C-reactive protein 3 mg/L and Serum amylase was 28 U/L. Chest X-ray demonstrated a moderate left basal pleural effusion with compressive atelectasis. MRCP revealed an abnormal pancreas with a large 5 cm pancreatic pseudocyst in the body, extending cranially and communicating bilaterally with the pleural cavities, resulting in bilateral pleural effusions (Figure 1). CT of the abdomen and pelvis further delineated features of chronic pancreatitis, complicated by a pancreatic pseudocyst measuring 50 × 40 mm (Figure 2a) and a fistula from this collection into the left pleural cavity (Figure 2b). MRI of the brain showed global cerebral and marked cerebellar volume loss, disproportionate for the patient's age.

The patient underwent left-sided thoracocentesis with removal of 500 ml clear fluid. Pleural fluid analysis showed amylase of 5000 U/L, fluid protein 16.4g/L, and lactate dehydrogenase 76 U/L. Cytology was negative. Faecal elastase was 4.1 $\mu\text{g/g}$ and PETH was positive at 554 $\mu\text{g/L}$, indicating continued alcohol consumption prior to presentation. Following consultation with upper GI surgery, a conservative approach with intensive dietetic support consisting of pancreatic enzyme supplementation, Pabrinex®, and enteral nutrition was implemented. The patient clinically improved with resolution of pleural effusion and peripheral oedema and was subsequently discharged to the community.

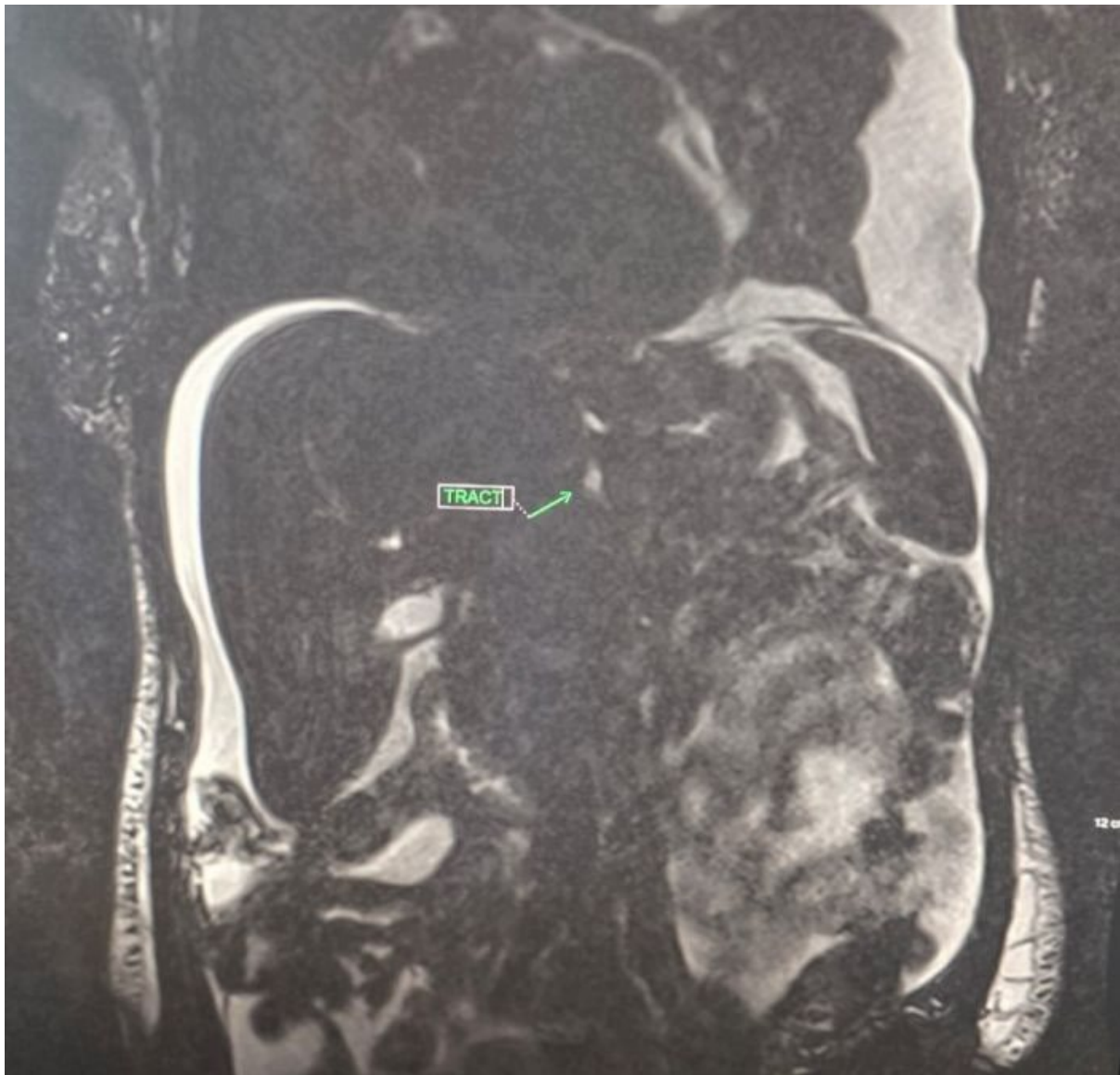


Figure 1: MRCP showing fistulous tract.

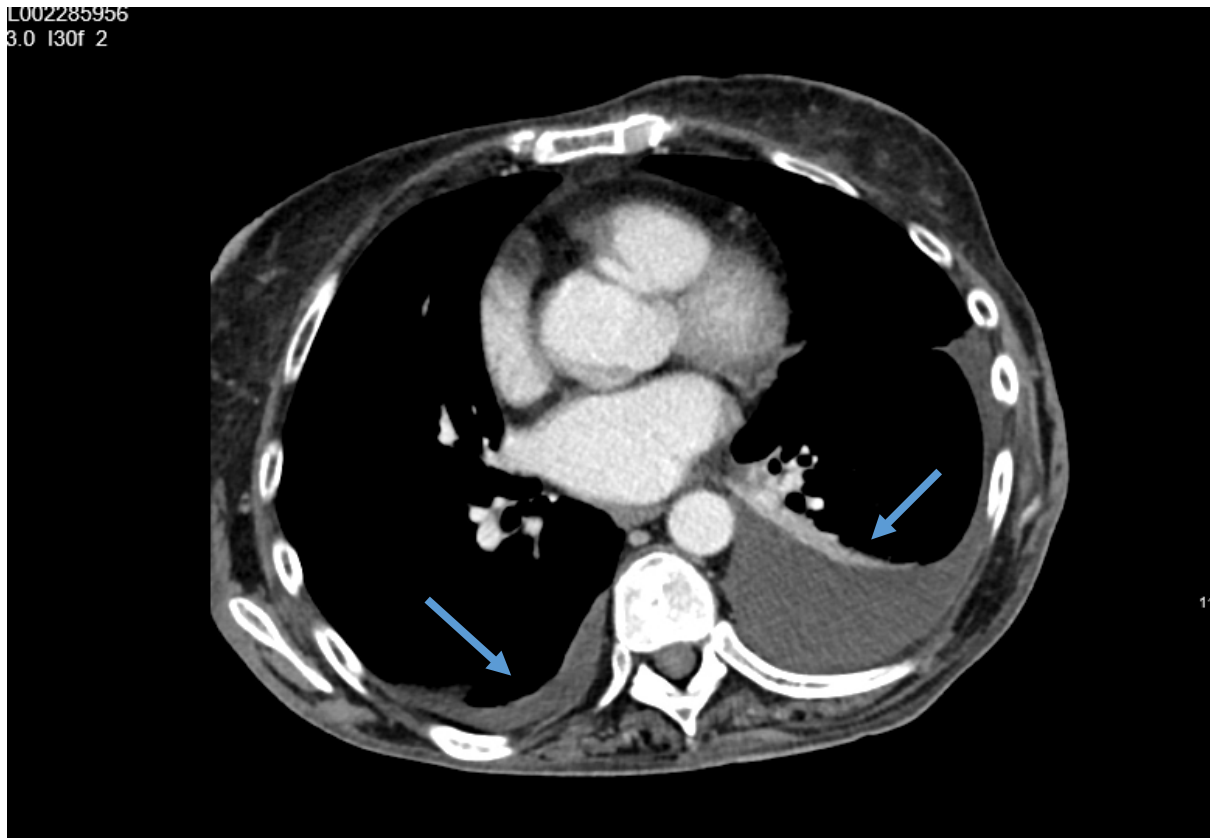


Figure 2a. CT scan showing bilateral pleural effusion.

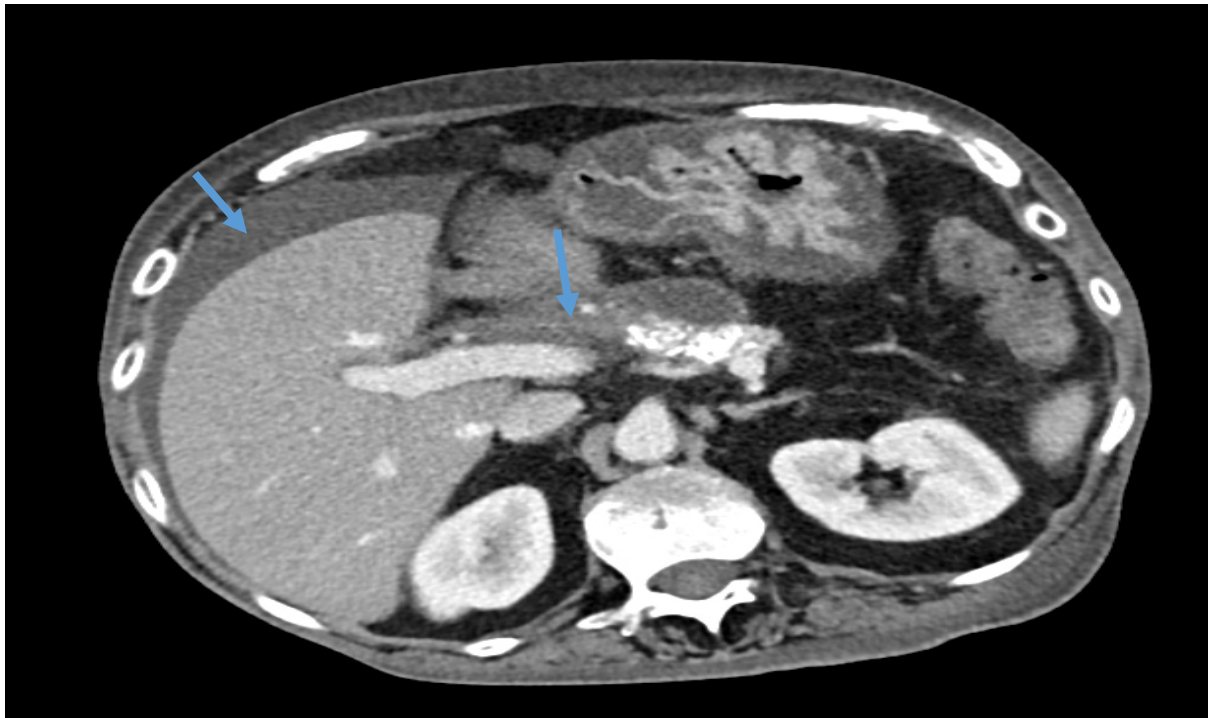


Figure 2b. CT scan abdomen showing perihepatic fluid, pancreatic calcification and pancreatic pseudocyst.

Discussion

This case illustrates a delayed presentation of a pancreaticopleural fistula (PPF) following acute severe pancreatitis, occurring up to three years post-acute pancreatic injury. It is thought that the etiology of PPFs arises either from the disruption of the pancreatic duct or the rupture of a pancreatic pseudocyst posteriorly, tracking into the retroperitoneum and, potentially, into the mediastinal cavity².

Distinguishing a PPF from other inflammatory or malignant pleural effusions requires clinical suspicion based on the patient's medical history, imaging, and pleural analysis from a diagnostic thoracentesis. Pleural fluid amylase levels can be highly indicative of PPF in the appropriate clinical context. However, it is important to note that elevated pleural fluid amylase may also be observed in acute pancreatitis, esophageal rupture, pulmonary tuberculosis, or malignancy³. In this case report, pleural fluid analysis revealed markedly elevated amylase levels. Typically, a pleural fluid amylase level exceeding 10,000 U/L suggests either rupture of a pancreatic pseudocyst into the pleural cavity or a pancreaticopleural fistula; both complications were present in the patient⁴.

In this case, the patient had a history of acute severe pancreatitis abroad and relocated during the COVID-19 pandemic, which had resulted in significant barriers to follow-up care. This presentation was also somewhat atypical, with no respiratory or cardiac symptoms despite physical and radiological evidence of a large pleural effusion. Typically, PPFs are predominantly associated with symptoms related to the respiratory or cardiac systems and less frequently with abdominal symptoms. The gold-standard modality for detecting PPFs is MRCP.

Management options for PPFs include supportive and medical management, with octreotide reducing pancreatic exocrine secretions and having reported success rates of 31–65%^{1,2}. Endoscopic intervention with ERCP and stenting of the pancreatic duct for decompression has been shown to be an effective intervention in combination with medical management³. Surgical approaches are now reserved for refractory PPF and in tertiary centres, success rates of up to 94% have been reported². In this patient, ERCP was not attempted due to large amount of calcification and chronicity of presentation, and a satisfactory response to conservative management.

This case illustrates an uncommon complication of acute pancreatitis that demands a high index of clinical suspicion for accurate diagnosis. Pancreaticopleural fistulas should be considered an important differential when evaluating pleural effusions, particularly in patients with chronic pancreatitis. Optimal management typically requires a multidisciplinary approach involving gastroenterologists, surgeons, radiologists, and dietitians.

Declarations of Conflicts of Interest:

None declared.

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