



A PANCREATICO PLEURAL FISTULA : A RARE CASE OF RECURRENT PLEURAL EFFUSION

Gastroenterology

Dr Pamu. Sameer Chandra PG

Dr Kanugula. Sudheer Kumar HOD Department of General Medicine

Dr Anjani Achanta Asst Professor

Dr Bandaru. Sujith* SR *Corresponding Author

ABSTRACT

Pancreatico-pleural fistula (PPF) is a rare but serious complication of acute or chronic pancreatitis, typically resulting in recurrent, massive pleural effusion, most commonly left-sided. It arises due to the leakage of pancreatic enzymes into the pleural space through an abnormal fistulous tract. This case report describes a 30-year-old male with a history of pancreatitis who presented with dyspnea and recurrent pleural effusion. Investigations revealed high pleural fluid amylase levels and imaging confirmed a fistula between the pancreas and pleura. Conservative treatment with nil per oral, octreotide, and drainage was successful. Differentiating PPF from reactive effusion is crucial, with pleural fluid amylase serving as a key diagnostic marker.

KEYWORDS

Pancreatico-pleural Fistula, Pleural Effusion, Pancreatitis, Amylase

INTRODUCTION

Pancreatico-pleural fistula (PPF) is an uncommon but serious complication that can arise from both acute and chronic pancreatitis. It involves the formation of an abnormal connection between the pancreas and the pleural cavity. This condition typically results in a large, recurrent pleural effusion, most often on the left side, though it may occasionally involve the right side or even present bilaterally. The effusion occurs due to the leakage of pancreatic enzymes into the pleural space. Prompt recognition and appropriate management are essential to prevent morbidity.

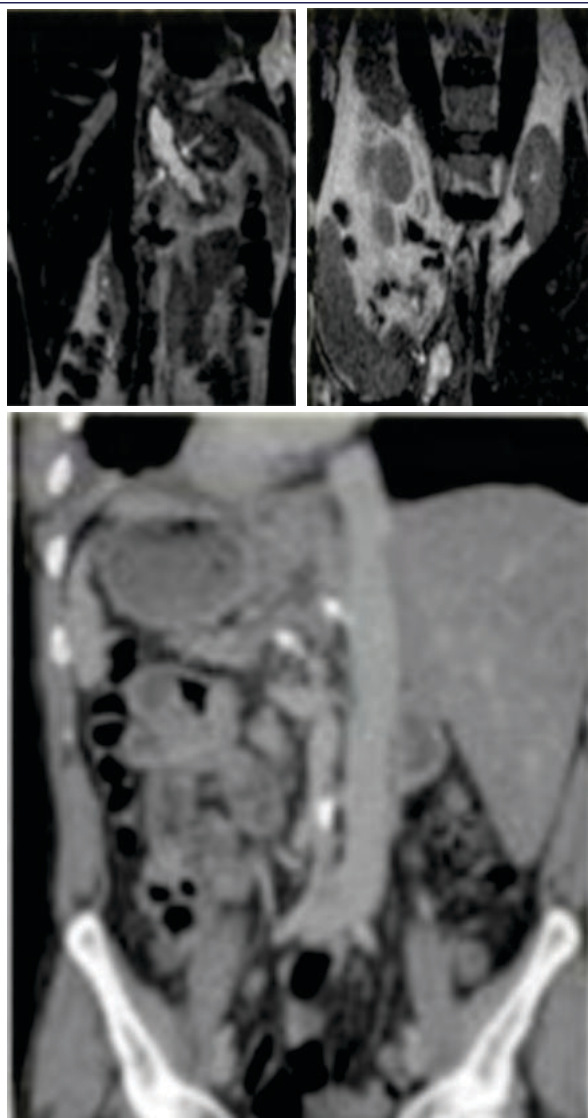
Case Report

A 30-year-old male presented to the hospital with progressive shortness of breath and left-sided chest pain for several days. He had a documented history of recent acute pancreatitis, for which he had been treated conservatively two weeks prior. On examination, reduced breath sounds and dullness to percussion were noted on the left hemithorax. Chest X-ray and ultrasound confirmed a massive left-sided pleural effusion. Thoracentesis was performed, and a large volume of straw-colored fluid was drained. However, the effusion reaccumulated rapidly within 48 hours, requiring repeated drainage.

Biochemical analysis of the pleural fluid revealed extremely elevated amylase levels, raising suspicion for a pancreatico-pleural fistula (PPF). Contrast-enhanced CT of the thorax and abdomen revealed a tract extending from the pancreatic tail to the left pleural cavity, consistent with a PPF. No significant pseudocyst or pericardial involvement was observed.

The patient was started on conservative management, including nil per oral (NPO) status to reduce pancreatic exocrine secretion, nasogastric aspiration to decompress the stomach, and octreotide injections to suppress pancreatic enzyme release. Intravenous fluids and analgesics were administered to maintain hydration and relieve symptoms.

Over the next two weeks, the patient showed marked clinical improvement. Serial imaging showed gradual reduction in the pleural fluid and resolution of the fistulous tract. He did not require surgical or endoscopic intervention. Follow-up after four weeks confirmed complete clinical and radiological resolution. This case underscores the importance of recognizing PPF in recurrent pleural effusions, particularly in young patients with recent pancreatitis, and demonstrates that conservative management can be highly effective in selected patients.





DISCUSSION

Pancreatico-pleural fistula (PPF) is a rare but serious complication of both acute and chronic pancreatitis, resulting from disruption of the pancreatic duct or a pseudocyst that establishes a fistulous connection with the pleural cavity. This abnormal communication allows leakage of pancreatic fluid, rich in enzymes like amylase and lipase, into the pleural space, leading to recurrent and often massive pleural effusions. Left-sided effusions are more common due to the anatomical proximity of the pancreas tail to the left pleura, though right-sided or even bilateral involvement can occur.

The pathophysiology involves the enzymatic digestion of surrounding tissues, enabling pancreatic fluid to dissect through fascial planes and diaphragmatic openings into the pleural space. The persistent irritation by these enzymes results in chronic inflammation and fluid accumulation. Clinically, patients may present with dyspnea, chest pain, and symptoms resembling other causes of pleural effusion, often overshadowing abdominal complaints.

Diagnosis can be challenging, particularly when respiratory symptoms

predominate. However, a high index of suspicion is essential in patients with a history of pancreatitis who present with recurrent or large pleural effusions. Pleural fluid analysis is a key diagnostic tool — an amylase level above 1000 IU/L in the pleural fluid strongly points to a pancreatic origin. Imaging studies such as contrast-enhanced CT, MRCP (magnetic resonance cholangiopancreatography), or ERCP (endoscopic retrograde cholangiopancreatography) are crucial to identify the fistulous tract and assess pancreatic ductal anatomy.

Management of PPF may be either conservative or interventional. Initial treatment includes keeping the patient nil per oral (NPO), nasogastric decompression, and administration of somatostatin analogues like octreotide to reduce pancreatic secretions. This can allow spontaneous closure of the fistula in a significant number of cases, especially when there is no major ductal disruption. Drainage of the pleural fluid relieves symptoms and prevents complications like empyema.

When conservative management fails or if there is a persistent high-output fistula, endoscopic stenting of the pancreatic duct via ERCP may be considered to divert pancreatic secretions and promote healing. Surgical intervention is reserved for refractory cases or when complications such as infected pseudocysts are present. The prognosis is generally good with timely diagnosis and appropriate management.

This case highlights the importance of early recognition of PPF in patients with unexplained, recurrent pleural effusions, especially when associated with high pleural fluid amylase. Multidisciplinary management involving pulmonologists, gastroenterologists, and radiologists is essential for optimal outcomes.

CONCLUSION

Pancreatico-pleural fistula (PPF) is a rare yet significant condition that should be considered in patients with repeated or large pleural effusions, particularly when there is a known history of pancreatitis. Unlike the mild, transient pleural effusions that can accompany acute pancreatitis, those caused by PPF are typically extensive, reappear quickly after drainage, and are characterized by very high amylase levels in the pleural fluid. Because respiratory symptoms often dominate the clinical picture, the underlying pancreatic issue may be overlooked initially.

Identifying elevated amylase in the pleural fluid is a key step in diagnosis. Imaging techniques such as contrast-enhanced CT or MRCP are essential to visualize the fistula and evaluate pancreatic duct involvement. Many cases can be managed without surgery through conservative treatment approaches like fasting, gastric decompression, administration of somatostatin analogues such as octreotide, and thoracentesis to drain the fluid.

In cases where conservative measures are unsuccessful or when the fistula output remains high, endoscopic stenting or surgery may be necessary. Prompt diagnosis and collaboration between specialties including pulmonology, gastroenterology, and radiology are critical for favorable outcomes. This case emphasizes the need to include PPF in the differential diagnosis of unexplained, recurrent pleural effusions and highlights the diagnostic importance of analyzing pleural fluid amylase levels.

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