



A RARE CASE REPORT OF PANCREATICO-PLEURAL FISTULA AND ITS MANAGEMENT

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ABSTRACT Pancreatitis is an inflammatory response secondary to injury to pancreas which is caused due to alcohol or gallstones, latter being the most common cause. Alcohol causes increase in viscosity of the exocrine secretions leading to plugging of the ducts causing progressive inflammation and fibrosis eventually causing destruction of the acinar, islet and ductal cells. First line of treatment for PPF has been medical management with suppression of pancreatic secretions with octreotide with drainage of pleural fluid followed by ERCP stenting of the pancreatic duct. Failure of conservative management will require surgical intervention. Herein, we present a rare case of pancreatico pleural fistula (PPF) between the pancreatic pseudocyst and left sided pleural cavity in a middle aged male secondary to pancreatitis who underwent ERCP with stenting of the pancreatic duct.

KEYWORDS : Pancreatitis, Exocrine, Erpc, Pancreatico-Pleural Fistula.

INTRODUCTION

PPF is a rare complication of Pancreatitis occurring in about 0.4% of pancreatitis patients. Due to disruption of the main pancreatic duct there is leakage of the pancreatic secretions. If the fistula is formed with pleural cavity it causes PPF whereas if there is communication with the abdominal cavity it will lead to pancreatic Ascitis. It is commonly seen in patients with acute or chronic pancreatitis due to inflammatory damage or traumatic or iatrogenic injury to the pancreatic duct. Pleural effusion caused secondary to PPF frequently recur when patient gets a fresh attack of pancreatitis as the pancreatic secretions are leaked into pleural cavity through the aortic or the esophageal hiatus. Characteristically pleural fluid analysis will be positive for the pancreatic enzymes.

Case Presentation

A 52 year middle aged male presented to emergency department with breathlessness and abdominal pain. It was associated with occasional nausea and vomiting. Past history revealed chronic alcoholism and smoking for 15 years. Chest radiography showed left sided massive pleural effusion. Abdominal ultrasonography showed diffusely enlarged pancreas with free fluid in the peripancreatic and perisplenic region. Cystic lesion was noted in the body and tail of pancreas measuring 5 x 3.3 x 2.1 cm suggestive of pancreatic pseudo-cyst.

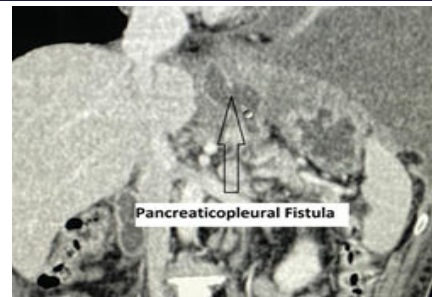
CECT showing pancreatic pseudocyst

Chest USG confirmed the massive pleural effusion on the left side. Biochemical analysis confirmed the diagnosis of acute pancreatitis. Intercostal drain was inserted in the left pleural cavity to drain the effusion and was sent for analysis which showed raised amylase and lipase in the pleural fluid thus raising the suspicion of fistula between the pancreatic collection and the left sided pleural cavity.

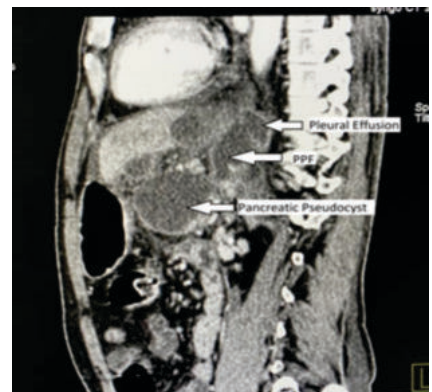
CECT abdomen and thorax was done post admission which showed a well defined collection (+7 HU) with imperceptible wall, noted in the body of the pancreas extending in the lesser sac measuring 9.2 x 6.5 x 6.0 cm with a communication with the main pancreatic duct.

CECT image showing pleural effusion

A fistulous track was noted between the abdominal collection and the left sided pleural cavity confirming the diagnosis of pancreatico-pleural fistula. Patient was further worked up and planned for ERCP which demonstrated a leak from the pancreatic body into the pseudocyst. 7 FR stent was inserted in the pancreatic duct for drainage of the pancreatic juices. Subsequently, pleural effusion was resolved and ICD was removed post ERCP. Follow up CECT was done 4 weeks later which revealed presence of stent within the pancreatic duct in-situ with dilatation of proximal pancreatic duct. The pseudocyst was not visualized in the current scan. Furthermore, pancreatic duct stent was endoscopically removed. At 3 months follow up patient is in good health with no recurring symptoms.



Radiographical image depicting pancreaticopleural fistula



CECT revealing an image showing a pancreaticopleural fistula between the pancreatic pseudocyst and left sided pleural cavity

DISCUSSION

The correlation between pancreatic disorders and pleural effusions is widely acknowledged. Based on this literature review, PPF usually involves males in their late 40s with chronic pancreatitis mainly from alcohol abuse, consistent with previous studies. Patients with PPF usually present to the emergency room with respiratory symptoms including shortness of breath, and less commonly with diffuse upper quadrant abdominal pain, nausea, and vomiting. PPF is seen to occur as a complication of both acute and chronic pancreatitis. Acute pancreatitis often presents with mild, temporary effusions that are typically located on the left side. These effusions are believed to be caused by either sympathetic or lymphatic factors. By contrast, chronic pancreatitis, with or without the presence of pseudocysts, can be associated with recurring pleural effusions. The associated pleural effusion is typically characterized by its significant size, recurrent nature, and its resistance to repeated thoracentesis. Usually, it affects

one side of the pleural cavity, with a left-sided predominance and infrequent occurrence on the right side. Bilateral involvement is uncommon, occurring in around 15% of cases. Our patient presented similarly with respiratory symptoms, such as dyspnea and cough while no significant abdominal symptoms were reported.

In a patient who presents with an acute pleural effusion on the left side and has a history of pancreatitis and/or heavy alcohol abuse, the diagnosis of a PPF should be taken into consideration. This can be determined by confirming the findings of an pleural fluid sample obtained through thoracentesis, which exhibits significantly elevated levels of pancreatic enzymes (amylase and lipase) and this is considered as the hallmark diagnostic feature of PPF.

With recurrent bouts of pancreatitis, pancreatic enzymes can dissect into the pleural cavity, creating a fistulous tract. This communication may be anterior causing PPF or posterior with exudative fluid draining into the retroperitoneum. Reactionary effusions due to pancreatitis are relatively small, left-sided or may be bilateral. It often contains amylase levels of below 1000 U/L and protein content less than 3 g/dL, commonly seen in acute pancreatitis which resolve spontaneously. Effusions due to fistulae are usually large, left-sided, with amylase levels of >1000 U/L and high protein content >3 g/dL, mainly seen in pseudocysts and chronic pancreatitis.

Pancreaticopleural fistula is a rare complication of chronic pancreatitis secondary to disruption of the pancreatic duct. The fistulous track ascends posterosuperiorly into the pleural cavity and gives rise to large collection of pleural fluid. Pancreaticopleural fistula thus poses a clinical confusion since the source of pleural fluid is extrathoracic. To further complicate the matter, patients seldom presents with abdominal symptoms. The pleural effusion is typically recurrent, exudative in nature and positive for fluid amylase which virtually clinches the diagnosis.

A near normal or mildly dilated pancreatic duct responds well to Intercostal chest tube drainage with octreotide while endoscopic stenting benefits patients with duct disruption located in head or body of the pancreas. Failure of medical or endoscopic therapy calls in for surgical intervention on an urgent basis.

CONCLUSION

The main pathology causing these fistulae is a persistent inflammatory process of the pancreas, most often attributed to alcoholic pancreatitis. PPF occurs secondary to either pancreatic duct injury or an incomplete or ruptured pseudocyst, with pancreatic enzymes eroding the fascial planes posteriorly and entering the pleural cavity. Pancreaticopleural fistula secondary to chronic pancreatitis presents a diagnostic dilemma as patients often present with thoracic symptoms such as cough, breathlessness, and chest pain rather than gastrointestinal complaints. There are no specific guidelines for PPF management as the data is limited. Diagnosis traditionally relies on a triad of pancreatic injury history, imaging evidence of pancreatic duct disruption with concurrent pleural effusion, and elevated pleural fluid amylase. While CT has 47-63% sensitivity, MRCP (80%) and ERCP (78%) offer improved visualization and therapeutic potential in the management of PPF whereas surgical intervention is necessary in case if failed medical trial.

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