



## CASE STUDY

### RIGHT SIDED MASSIVE HAEMORRHAGIC PANCREATIC PLEURAL EFFUSIONS

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#### ABSTRACT

Pancreatic disorders like Acute pancreatitis, Pancreatic Abscess, Pseudocyst, Pancreatic malignancy, Chronic pancreatitis present with pleural effusions. Here we present four cases of right sided massive hemorrhagic pancreatic pleural effusion which presented with chest complaints rather than abdominal ailments. Pancreatic pathology was established after thorough workup and Pleural fluid analysis which showed elevated amylase levels in all the cases and this was clinching our diagnosis which was also supported by Computed Tomography of Abdomen (Plain and Contrast). Hemorrhagic Pleural effusions which also occur in tuberculosis, malignancy primary or secondary or may be due trauma are ruled out during evaluation of each and every case.

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## INTRODUCTION

It is really challenge for a physician when patient presents with Massive effusion when he has no abdominal complaints inspite of pancreatic pathology. If occurred pancreatic effusions are more common on left rather than on right. Pleural effusion secondary to chronic pancreatitis is an uncommon condition accounting for less than 1% of patients. Patients are alcoholic but only 50% of patients have clinical symptoms and signs of previous pancreatitis. Raised pleural fluid amylase level in haemorrhagic fluid is diagnostic of pancreatic pleural effusion. Presence of pancreatico-pleural fistula can be demonstrated by CT imaging or MRCP.

### Case Reports

**Case 1:** A 36 year old alcoholic male came with shortness of breath (SOB), cough and chest pain on right side. Absent breath sounds present over right side. Chest X-Ray (CXR) PA view showed right massive pleural effusion. Thoracocentesis revealed hemorrhagic fluid which showed elevated amylase-59740 U/l. Contrast CT chest and abdomen showed pancreatic pseudocyst. Tube thoracostomy was done and appropriate treatment with supplementation of enzymes and Octreotide was

given. He improved gradually. ERCP could not be performed as our hospital did not have that facility.

**Case 2:** A 45 year male, alcoholic and smoker came with complaints of severe Shortness of breath. Chest X-Ray PA view showed massive right sided pleural effusion. On evaluation his serum amylase was 4570 U/l, pleural fluid amylase was 14,830 U/l. Pleural fluid was haemorrhagic and showed malignant cells on cytology. Contrast CT chest and abdomen along with ultrasound abdomen confirmed malignancy involving head and neck of pancreas.

**Case 3:** A 33 year male, alcoholic came with complaints of SOB. CXR PA view revealed massive right sided pleural effusion. On evaluation pleural fluid is haemorrhagic pleural fluid amylase was 14,486 U/l. Ultrasound abdomen and CT abdomen showed features of chronic pancreatitis.





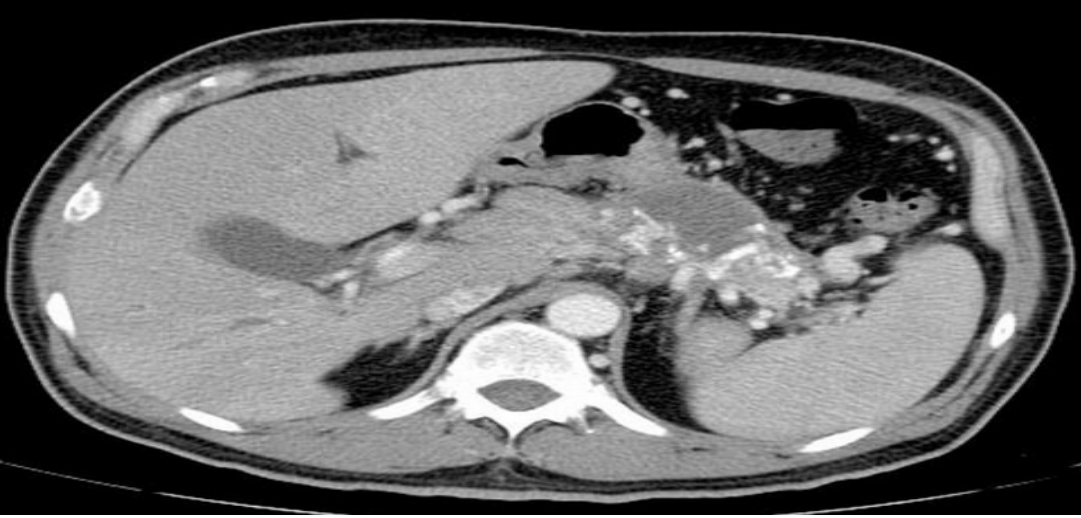
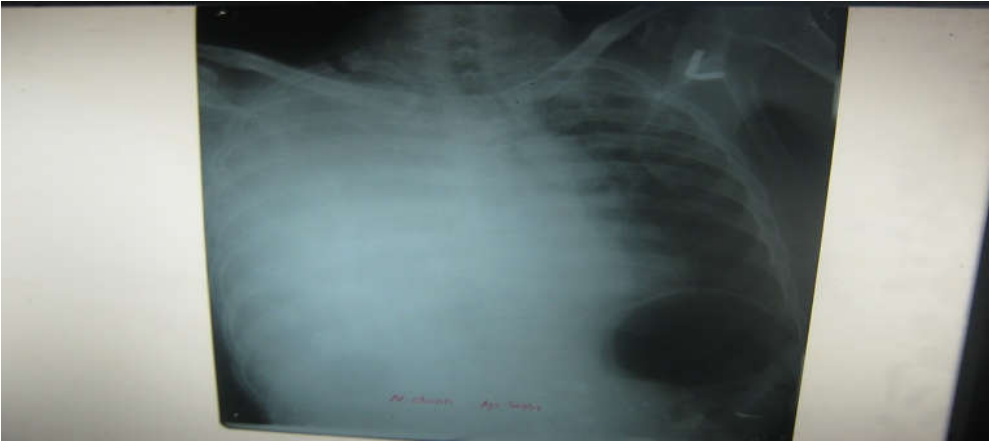
**Case 4:** A 38 year male presented with SOB. On evaluation he is found to be having massive right sided pleural effusion that is haemorrhagic. Pleural fluid amylase was 38,365U/l. Ultrasound abdomen revealed pancreatic pseudocyst.

## DISCUSSION

Pleuro-pulmonary complications secondary to pancreatic etiology are well known but rare. These effusions are usually left sided but all the above all 4 cases were right sided, hemorrhagic, showed elevated amylase levels.

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Case	Chest X-Ray	CT picture
No.1		
No.2		
No.3		
No.4		

Often the underlying pancreatic disease is missed due to lack of abdominal symptoms. The best modality for diagnosis in these cases remains pleural fluid amylase. They often tend to recur after thoracocentesis. Intercostal tube drainage was done to relieve the massive pleural effusion. Pleuro-pulmonary complications secondary to pancreatitis are well known but rare. The frequency of pleural effusion in patients with acute pancreatitis varies between 3 to 17% but they are often small and transient. Usually these effusions are non-haemorrhagic. In contrast, large blood stained exudative pleural effusions are seen in all our cases. They are left sided but may be right sided or even bilateral. They tend to recur after thoracocentesis, as was seen in all the three cases. Most patients do not have abdominal symptoms but some may have tenderness or a swelling. None of our patients had history of flatulence, dyspepsia or loose motions.

The Pleural amylase levels were raised drastically in all cases. All cases showed the enzyme levels of more than 1000 IU/l. Very high levels of amylase in the pleural fluid are rare and can only be explained by pancreatitis or rupture of a pancreatic pseudocyst with perforation into the pleural cavity such as by drainage of pancreatic fluid into the pleural cavity (Namazi and Mowla, 2004). The other causes of pleural effusions with an increased amylase include esophageal rupture, malignancy, ruptured ectopic pregnancy (Celli, 2004). The serum amylase levels are usually normal or mildly elevated. When serum amylase is increased, it is thought to be due to back diffusion from pleural space rather than acute pancreatitis (Cameron, 1978). The pleural fluid amylase levels are usually more than 1000 IU/l with reported values as high as 475,000 Somogyi units/dl (Kaye, 1968). The exudative amylase rich pleural fluid may occur due to transfer of pancreatic secretions through transdiaphragmatic lymphatics (Namazi and Mowla, 2004). Alternatively, direct contact of pancreatic enzymes with the diaphragm may lead to rupture or perforation. In some cases, a pancreatico-pleural fistula can be demonstrated either by endoscopic retrograde Cholangiopancreatography or by computed tomography or by the injection of contrast medium in the pleural cavity. Fistula is commonly associated with pancreatic pseudocyst and obstruction of the main pancreatic duct. Pancreatico-pleural fistula is an unusual complication of chronic pancreatitis and estimated to occur in only 0.4% of patients with chronic pancreatitis and 4.5% of patients with pancreatic pseudocysts (Anil Sontakke *et al.*, 2014). The pseudocyst can also rupture into the pleural cavity and, on ultrasonography, no pseudocyst may be seen in the pancreas. Pancreatic secretions probably leak into the retroperitoneal space and track upwards beside the aorta and oesophagus through the diaphragmatic hiatus into the mediastinum.

Occasionally, secretions are contained within the mediastinum presenting as a mediastinal pseudocyst or it may rupture into the pericardium, but usually there is penetration into the pleural cavity. Octreotide is given as an initial dose of 50 mg three times a day up to maximum dose of 250 mg three times daily. In first case second one and fourth. Octreotide significantly reduces fistula output and decreases the time of fistula closure.

The diagnosis of chronic pancreatic pleural effusion should be suspected in any individual with a large pleural effusion who appears chronically ill or has a history of alcoholism or pancreatic disease. The best screening test is to measure pleural fluid amylase (Pottmeyer, 1987). But in all our four cases pleuroperitoneal cyst could not be demonstrated by ERCP. As our setup has no facility, we had to depend largely on Pleural Amylase and CT abdomen. Conservative treatment of pancreatico-pleural fistula has a success rate of 30 to 60% with a recurrence rate of 15%, and mortality of 12%. In contrast, operative therapy has a success rate of 90% with up to 18% recurrence rate.

### Conclusion

Early pleural fluid amylase testing will avoid delay in diagnosis; CT imaging or MRCP will confirm the diagnosis. Surgical management may be required if there is no response to Medical management.

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