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**Research Article**

# Management of pancreatico-pleural fistula: 5 years of experience

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## ABSTRACT

**Background:** Pancreatico-pleural fistula is a rare entity with an incidence of 0.4% seen both in patients with acute and chronic pancreatitis or may follow traumatic and surgical disruption of the pancreatic duct. It presents as massive pleural fluid accumulation and has a high tendency to recur following treatment. Conservative management like inhibition of pancreatic secretion with octreotide and pancreatic duct stenting may help fistula closure in about 31 to 45% of cases. Surgical correction has high mortality up to 10% and but has increased fistula closure rate of 80-90%. Here we present our experience with pancreatico-pleural fistula.

**Methods:** Data of patients admitted with pancreatico-pleural fistula from 2010-2015 in our department were retrospectively analysed. Ten patients were included in this analysis. The average age of presentation was 28.3 years.

**Results:** There were 8 male and 2 female patients. Alcoholic pancreatitis - most common cause with chronic pancreatitis (80% n = 8), idiopathic pancreatitis (20% n=2). Mean hospital stay was 18 days; intercostal drainage and inj. octreotide were done in all patients; ERCP (n=5; In 4 patients successful PD stenting was done and in 1 patient could not be done; four patients required pigtail drainage for peripancreatic collection. Recurrence (20% n = 2); Surgery in 3; Mortality – nil.

**Conclusions:** Pancreatico-pleural presents with significant morbidity but can be managed effectively with medical therapy and ERCP stenting in most of the patients. Surgery may be required for failed conservative therapy or for recurrences.

**Keywords:** Pancreatectomy, Pancreatic fistula, Pancreatitis, Pleural diseases, Sepsis

## INTRODUCTION

Pancreatico-pleural fistula is, a rare entity, with an incidence of approximately 0.4% seen both in patients with acute and chronic pancreatitis or may follow traumatic and surgical disruption of the pancreatic duct.[1] It presents as massive pleural fluid accumulation and has a high tendency to recur following treatment. Conservative management may help in about 31 to 45% of cases. Surgery has increased fistula closure rate of 80-90%, but has recurrence rate of 18% and high mortality up to 10%.[2] The optimal treatment is controversial. We present our experience with management of pancreatico-pleural fistula.

## METHODS

Data of patients admitted with pancreatico-pleural fistula from 2010-2015 in our department were retrospectively analysed. Ten patients were admitted in this period and were included for analysis. The data are expressed in mean values ± standard error of the mean.

## RESULTS

In majority of patients alcoholic pancreatitis (acute pancreatitis-6, chronic pancreatitis-2) (80%) was the cause with few cases of idiopathic pancreatitis (20 %). Most patients were middle aged males (80%) and, averaging 31 ± 2 years old (range, 23-45). Diagnosis was confirmed by increased pleural fluid amylase (12000 ±2500 IU/L). Serum amylase (300 ± 160 IU/L) was increased in most patients (80%), but 2 patients presented with normal serum amylase activity. The common imaging methods were CECT and MRI/MRCP. The fistula detection rate of MRI/MRCP was higher (40%) than CECT (30%).

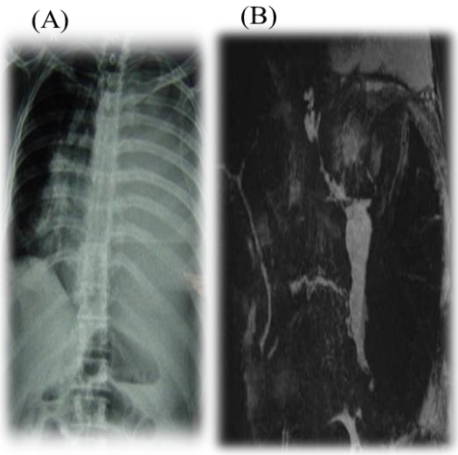


**Figure 1: (A) X-ray that shows plural effusion (B) MRCP showing the fistulous tract.**

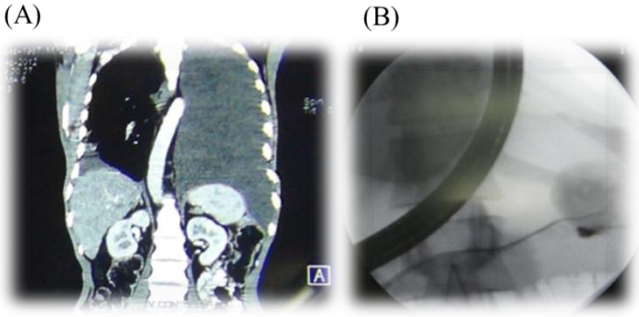


**Figure 2: (A) Patient with pleural effusion (B) Same patient on ERCP found to have leak from the pancreatic duct to the pleural cavity.**

All patients (n=10) were treated with medical therapy initially with octreotide and intercostal tube drainage. This was successful in (n=5; 50 %) patients. The average hospital stay for these patients was 31 ± 8 days. The patients who failed conservative therapy were subjected to ERCP (n=5; 50%). Four patients underwent successful ERCP and pancreatic stenting and failed in 1 patient. The average hospital stay for these patients was 42 ± 7 days. Four patients required additional pigtail drainage for the peripancreatic collection.

There were 3 complications (empyema thorax – 1; 2 recurrences). One patient developed empyema thorax for which he required intercostal drainage for a long duration. Two patients presented with recurrence that were managed by surgery. In total, operative therapy was done for 3 patients (1 ERCP failure; 2 recurrences) and all 3 underwent distal pancreatectomy. Operative therapy was much more successful than medical therapy (100% vs 50%), 1 patient developed grade B fistula managed conservatively. There were no mortalities.

## DISCUSSION

Pancreaticopleural fistula is a rare complication of pancreatitis typically seen in middle aged men with history of alcoholism. The diagnosis is generally established by raised pleural fluid amylase with or without raised serum amylase/lipase levels.[2,3] the clinical features are breathlessness, chest pain, and abdominal pain, vomiting and decreased breath sounds on the affected side.[4]

Regarding imaging, CECT abdomen is considered to be the initial imaging which can demonstrate the status of the pancreas and the pleural fluid collection. It has less sensitivity compared to MRI/MRCP in delineating the fistula as such.[5] ERCP gives an option of therapeutic stenting in patient with pancreaticopleural fistula and shows any additional proximal strictures or pseudocyst with communication.[6]

The strategy for management of pancreaticopleural fistula is initial conservative management followed by interventional or surgical management who fails to respond to conservative therapy. ERCP and pancreatic stenting if feasible may help in the resolution of fistula. Operative management is generally reserved for failed conservative therapy and recurrences.[2] Ductal anatomy obtained preoperatively by either MRCP/ERCP or intraoperatively helps in planning the type of surgery required. Patients with associated with pseudocyst may require pigtail drainage if symptomatic or surgical internal drainage.

Patients with distal fistula who have failed conservative therapy may require distal pancreatectomy as in our series where 3 patients underwent distal pancreatectomy. If the lesion is in the body or head region the patient requires longitudinal pancreaticojejunostomy or enterocystic drainage. Surgical management is not without complications and the operative difficulty, in these cases, should be kept in mind because of repeated severe inflammatory reactions.

There are few studies which recommends early operative therapy of patients with Pancreaticopleural fistula as medical management can cause significant morbidity and the effectiveness is only around 35%.[2] Some studies recommend ERCP and stenting if feasible.[6,7] But

consensus has not been reached regarding the effectiveness of one management over the other.

## CONCLUSION

Pancreatico-pleural fistula presents with significant morbidity but can be managed effectively with medical therapy and ERCP stenting in most of the patients. Surgery may be required for failed conservative therapy or for recurrence.

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