

Pleural Effusion in Chronic Pancreatitis: An Unusual Complication

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Abstract: *Pancreatic pleural fistula is a rare complication of chronic pancreatitis. Consequent to fistulous tract between the pleural cavity thus gives rise to large volumes of pleural fluid. It produces a delay in diagnosis since the origin of pleural fluid is extrathoracic. An ex-alcoholic male with a history of pancreatitis presented with pulmonary symptoms. Ultra sonogram of the chest revealed pleural effusion. Thoracocentesis & Pleural fluid amylase level was raised in 3666 U/L. The basic medical management and octreotide therapy was started. Subsequently, an endoscopic retrograde cholangiopancreatography (ERCP) delineated fistulous tract originating from pancreas to posterior mediastinum via oesophageal hiatus. The stent was placed across the disrupted duct, and he discharged after the symptoms subsided.*

Keywords: Chronic pancreatitis, Pleural effusion, Pancreatic-pleural fistula

1. Introduction

The incidence of Pleural effusion as a complication of acute and chronic pancreatitis accounts for 0.4% of cases [2]. Pancreatic pleural fistula (PPF) is a rare complication of chronic pancreatitis consequent to posterior disruption of the pancreatic duct. The fistulous track ascends into the pleural cavity and gives rise to large volumes of pleural fluid. PPF thus poses diagnostic problems since the source of pleural fluid is extrathoracic to further complicate the matter. Abdominal pain is seldom the presenting or significant feature. Pleural effusion is usually rapidly accumulating, recurrent and exudative in form. Pleural fluid amylase within the correct clinical setting virtually clinches the diagnosis. MRCP, ERCP & CT may identify the fistula & thus aid in diagnosis. A subnormal or mildly dilated pancreatic duct responds well to chest drainage with octreotide therapy, while endoscopic stent placement benefits patients with duct disruption located in the head or body of the pancreas. In cases of complete duct obstruction, ductal obstruction proximal to fistula or duct disruption in tail region surgery can be considered. Stent placement with ERCP has a success rate of 94.6% [6]. In this case report, we present a 45-year-old alcoholic patient and discuss the various therapies in more detail.

2. Case Report

A 45-year-old male, a diagnosed case of acute pancreatitis with peripancreatic fluid treated conservatively returned after 6 months at the emergency department with the complaint of breathlessness on exertion since 2 months. It worsened in last 8 days, no aggravation on lying down. He also complained of epigastric colic abdominal pain for 15 days, not associated with nausea & vomiting. He denied any history of fever, cough, chest pain, weight loss & loss of appetite. He was on no medication. He is an ex-alcoholic

(one-quarter of a local brand of liquor per week) & tobacco chewer. He denied any family history of pancreatic diseases.

On general examination, his vitals were normal without tachycardia or hypotension. On physical examination, there were signs of pleural effusion on both sides. Pertinent laboratory findings included: serum albumin of 2.2 g/dl (normal range 3.5–5 g/dl). Serum amylase concentration the day after admission was 577 U/L (normal range 30–110 U/L) and serum lipase concentration was 1898 U/L (23–300 U/L). LDH was 1679 U/L (316–618 U/L).

USG chest has shown the right-sided pleural effusion with the collapse of the underlying parenchyma, it has multiple septations and loculation and gross left-sided pleural effusion with the collapse of underlying parenchyma. USG abdomen and pelvis has shown findings of acute on chronic pancreatitis with mild hepatomegaly. The pleural effusion thought to be either reactive or caused by a pancreatic-pleural fistula. The amylase level in the drained pleural effusion was 3666 IU/L and fluid lipase was 6484 IU/L

CECT scan of the chest with HRCT, abdomen, and pelvis was done. There was an atrophic pancreas with dilated MPD. Multiple thin and thick-walled fluid collections were noted within the body, tail of pancreases, and peripancreatic region in the lesser sac (largest of volume: 12cc) with communication with MPD. Another similar morphological collection was noted in the posterior mediastinum largest being volume: 66cc, maximum wall thickness measuring 2.2mm. The mediastinal collection was in connection with collection in the body region of the pancreas through the diaphragmatic hiatus of the oesophagus.

Multiple therapeutic pleural tapping was performed, around 3.5 lit of fluid was removed. Following these findings, octreotide therapy was started. After multidisciplinary

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deliberation, the choice was made to perform the ERCP. Perioperative clinical diagnosis of pancreatitis with pseudocysts was confirmed. A fistula was identified originating from one of the pseudocysts and ending at the hiatus of the oesophagus. A duct stent was placed across the duct disruption. The postoperative course was without any complication and the patient was discharged after eight days.

3. Discussion

The most common explanation of chronic pancreatitis leading to PPF formation is alcohol abuse. Other rarer causes include gallstones, trauma, idiopathic pancreatitis and PD anomalies in paediatric patients. The track of fistula may also communicate with the pericardium (pancreaticopericardial), tracheobronchial tree (pancreaticobronchial) or oesophagus (pancreatico oesophageal) [1]. In most cases, the patients complained of chest symptoms (68%) and complained of abdominal symptoms less frequently (24%) [5]. PPF is seen in 0.4% of patients presenting with pancreatitis, with alcohol abuse (67%) is the most common causative factor. Other causes of PPF include gall stones abdominal trauma, pancreatic duct anomalies. [4]

The diagnosis of a pancreaticopleural fistula is established when an amylase-rich fluid is drained on thoracentesis [4]. Amylase-rich pleural fluid is also seen in conditions such as acute pancreatitis, parapneumonic effusion, pulmonary tuberculosis, oesophageal perforation, liver cirrhosis, hydronephrosis, leukaemia/lymphoma and malignancies of the lung, pancreas, rectum, and in females, the gynaecological system. The median serum amylase concentration is 636 IU/L [2]

Diagnosis is confirmed by ERCP. It provides information about the ampulla besides depicting ductal anatomy, though The role of MRCP in suspected cases of PPF is two-fold. To diagnose the presence and site of fistula and to stratify further management ERCP provide diagnostic as well as a therapeutic modality. [3]

Treatment of PPF includes medical management with octreotide and thoracocentesis. the success rate of medical therapy is 41% [2]. Endotherapy including ERCP stenting was pioneered by Saeed et al [7]. It has diagnostic and therapeutic value. The success rate of 96.4% [6]

Surgical treatment is safe and effective and is appropriate either when medical management fails or where the underlying condition requires surgical intervention. It has a success rate of 89% [2]. In our case patient was successfully treated with stent placement.

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References

- [1] Tay CM, Chang SK. Diagnosis and management of pancreaticopleural fistula. Singapore Med J. 2013 Apr;54(4):190-4. doi: 10.11622/smedj.2013071. PMID: 23624444.
- [2] Rockey DC, Cello JP. Pancreaticopleural Cazzo fistula. Report of 7 patients and review of the literature. Medicine (Baltimore). 1990 Nov;69(6):332-44. doi: 10.1097/00005792-199011000-00002. PMID: 2233231..
- [3] Dhebri AR, Ferran N. Nonsurgical management of pancreaticopleural fistula. JOP. 2005 Mar 10;6(2):152-61. PMID: 15767731.
- [4] Aswani Y, Hira P. Pancreaticopleural fistula: a review. JOP. 2015 Jan 31;16(1):90-4. doi: 10.6092/1590-8577/2915. PMID: 25640793.
- [5] Uchiyama T, Suzuki T, Adachi A, Hiraki S, Iizuka N. Pancreatic pleural effusion: case report and review of 113 cases in Japan. Am J Gastroenterol. 1992 Mar;87(3):387-91. PMID: 1539580
- [6] Pai CG, Suvarna D, Bhat G. Endoscopic treatment as first-line therapy for pancreatic ascites and pleural effusion. J Gastroenterol Hepatol. 2009 Jul;24(7):1198-202. doi: 10.1111/j.1440-1746.2009.05796.x. Epub 2009 May 26. PMID: 19486258.
- [7] Saeed ZA, Ramirez FC, Hepps KS. Endoscopic stent placement for internal and external pancreatic fistulas. Gastroenterology. 1993 Oct;105(4):1213-7. doi: 10.1016/0016-5085(93)90970-n. PMID: 8405869.

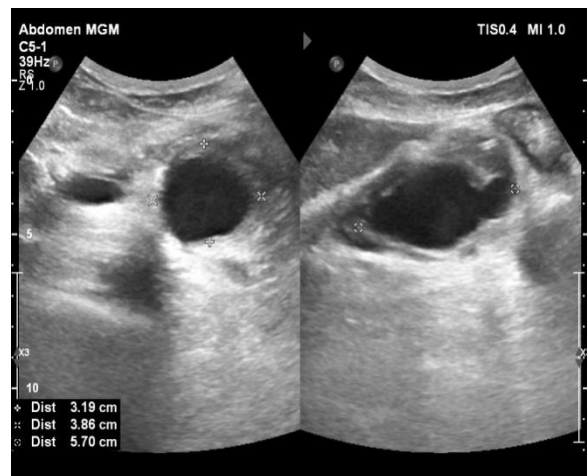


Figure 1: Cystic lesions around the MPD



Figure 2: Gross left-sided pleural effusion.