

An Unusual Presentation of Pancreatic Pleural Effusion

Dr. N. Gopichand¹ Dr. C. Sumalata*²

¹Associate Professor, ²Post-Graduate, Department of Pulmonology, Siddhartha Medical College, Vijayawada, Andhra Pradesh, India

*Corresponding Author:

Name: C. Sumalata

Email: drsumachittiboyina@gmail.com

Abstract: Pleural Effusion occurs as a complication of acute pancreatitis which may be of prognostic value. Hemorrhagic Pleural effusions occur in tuberculosis, malignancy primary or secondary or may be due trauma or may be due pancreatic diseases. Pleural effusion thus diagnosed is evaluated based on guidelines given by British Thoracic Society. A 36 year old alcoholic male who was admitted in emergency ward for shortness of breath is evaluated and was timely diagnosed as having right massive hemorrhagic pleural effusion. His pleural fluid analysis showed elevated amylase. His serum amylase levels also were elevated and prompted us for radiological investigations which showed a Pseudocyst in pancreas. In absence of abdominal symptoms, and exudative hemorrhagic effusions should prompt the chest physician to see for pancreatic causes.

Keywords: Pleural effusion, Pseudocyst of pancreas, Pleural fluid amylase

INTRODUCTION

Pleural effusion occurs as a complication of pancreatic disorders like acute pancreatitis, pancreatic abscess, pseudocyst of pancreas, and chronic pancreatitis [1]. They are usually bilateral. Left sided effusions account for 22% and 8% right sided. The effusion results from peripancreatic fluid that gain access to the pleural space via transdiaphragmatic lymphatics and less often through a sinus tract between pancreatic pseudocyst and pleural space[2]. These effusions are usually hemorrhagic or serosanguinous and of exudative type. Diagnosis is usually established by demonstrating high levels of amylase, lipase, LDH in the pleural fluid. Here we present an unusual case of pancreatic pleural effusion.

CASE REPORT

A 36 year old alcoholic male patient came to emergency room with shortness of breath and cough. He neither had sputum nor fever. He had not received any medications earlier. On examination he was pale and had leuconychia, tenderness in the right chest and absent breath sounds on right with tracheal shift to left side. Cardiovascular examination remained unremarkable. Provisionally diagnosed right pleural effusion was confirmed by Chest X-Ray P-A view which showed obliteration of costophrenic and cardiophrenic angle on right side, homogenous opacity occupying right upper, mid and lower zones. British thoracic guidelines for evaluation of pleural effusion followed. Diagnostic thoracentesis was done on right

side at 8th intercostals space posterior axillary line which revealed a hemorrhagic fluid and it was sent for analysis.

He was investigated for Contrast CT chest and abdomen, Ultrasonography abdomen and chest. Bronchoscopy was done. Intercostal tube drainage was done. One unit compatible blood was transfused. The patient gradually improved with Intercostal tube drainage and there was minimum chest drain by 12th day. He was then referred to Surgical Gastroenterologist for further management where he underwent excision of pseudocyst of pancreas.

RESULTS

Pleural fluid analysis: pleural fluid cytology shows many neutrophils, foamy macrophages, RBCs and reactive mesothelial cells on a proteinous background. No evidence of malignant cells.

Pleural fluid ADA-38 U/l, Pleural Amylase-59740 U/l, Pleural fluid Lipase-2450 U/l, Pleural fluid LDH-527 U/l

No organism was identified on Grams stain and Ziehl Neelson staining and culture was sterile.

Routine Blood Investigations are as follows: Hb-62%, Total Leucocyte count—7,800/cc, Differential count—polymorphs -72, Leucoctyes -22, Eosinophils—6, ESR—25mm/hr, Random Blood

Sugar—110mg/dl, Blood Urea—34mg/dl, Serum creatinin—2,1 mg/dl, Blood grouping and Typing –O positive, Serum Amylase -324 U/l, Serum Calcium - 9.0mg/dl, HBsAg and HIV I and II–Non reactive.

Ultrasonography abdomen showed no fluid in the peritoneal cavity, but Showed Pseudocyst in the head of pancreas, approximately 6 cm x 5 cm in head of pancreas.

Ultrasonography chest showed collapsed right lung and hemorrhagic fluid in the right chest cavity.

Contrast CT chest and abdomen showed expanding right lung (Contrast CT chest was done with tube insitu) with fluid in right chest cavity. Both the visible lung fields were normal. Pseudocyst of Pancreas of 6cm x 5cm were observed in body and head of pancreas.

Bronchoscopy revealed normal study. Sputum on Ziehl Neelson Staining showed no Acid fast bacilli. No pathogenic organisms isolated on culture of sputum. ABG analysis was in normal limits.



Fig. 1: Chest X-ray showing Right Massive Pleural effusion



Fig. 2: CECT abdomen showing Pseudocyst in the head of pancreas

DISCUSSION

Pancreatic disease is often masked when patients present with massive hemorrhagic pleural effusion [3]. The mechanisms involved in causing

pleural effusion include direct contact of pancreatic enzymes with the diaphragm, hematogenous transfer of pancreatic enzymes into pleura, communication between pleural and peritoneal cavities through transdiaphragmatic lymphatics and in rare case where there may be direct communication of pseudocyst with pleural cavity. Pseudocysts are involved in formation of pancreaticopleural fistula in about half of the reported cases [4].

The diagnosis was established by elevated pleural fluid amylase level (59740 U/l) which may also be seen in tuberculosis, malignancy and oesophageal rupture. Tuberculosis pleural effusion was ruled out by not finding Acid Fast Bacilli in the pleural fluid and also in the sputum. Malignancy was ruled out with normal bronchoscopic study and pleural fluid cytologic studies, and was supported by Contrast CT chest. Oesophageal rupture could not be considered based on the clinical picture and was also supported by radiological investigations. Our diagnosis was also supported with elevated serum Amylase levels. As the chest symptoms dominate the clinical picture, and with no previous history of previous pancreatic disease diagnosis becomes difficult. The Contrast CT study of chest and abdomen revealed the pseudocyst of pancreas establishing contact with the pleural cavity leading to accumulation of massive pleural effusion. The case presented without any symptoms associated with pseudocyst of pancreas [5]. There are case reports that pseudocyst spontaneously rupture and cause massive pleural hemorrhagic effusion [6]. The best modality for diagnosis then becomes the pleural fluid Amylase.

The case presented here is unusual because pancreatic effusions have less right predilection (8%) and presented with hemorrhagic effusion without any abdominal symptoms. The diagnosis is strongly supported by CT showing features of fluid collection with <15 Hounsfield Unit with a smooth thin wall forming a round or ovoid configuration noticed in head and body of pancreas [7].

As far as the treatment was considered the massive effusion was treated by ICT drainage. Most of the pseudocyst resolve spontaneously. So the patient is kept on somatostatin. He subsequently underwent excision of the pseudocyst and was asked for reviews at regular interval.

CONCLUSION

From the clinical picture and the investigations done it was diagnosed as Right sided pleural effusion with pseudocyst of pancreas. The combined approach of Chest physician and Gastroenterologist saved the patient.

REFERENCES

1. Maskell NA, Butland RJA; On behalf of British Thoracic Society Pleural disease Group, a sub-group of British Thoracic Society Standards of Care committee. BTS guidelines for investigation of a unilateral pleural Effusion in adults. *Thorax*, 2003;58:ii17
2. Mayse ML; Non malignant Pleural Effusion. In Fishman's pulmonary diseases and disorders. 4th edition, Volume 2, McGraw Hill Medical, New York, 2008: 1495.
3. Bedi RS; Massive pleural effusion due to Asymptomatic pancreatic disease. *Lung India*, 2006; 23(4):163-164.
4. Moorthy N, Raveesha A, Prabhakar K; Pancreaticopleural fistula and mediastinal pseudocyst; an unusual presentation of Acute Pancreatitis. *Annals of Thoracic Medicine*, 2007; 2(3): 122-123.
5. Dixit R, Sharma S, Dave L; Massive hemothorax in asymptomatic pseudocyst of pancreas. *Lung India*, 2008; 25(3):126-128.
6. Marwah S, Shivaran K, Guruwalia JP; Spontaneous rupture of pseudopancreatic cyst causing massive pleural effusion. *International Journal of Case Reports in Medicine*, 2013; Article ID 832910: 4pages.
7. Koo BC, Chinogureyi A, Shaw AS; Imaging Acute Pancreatitis. *The British Journal of Radiology*, 2010; 83(986): 104-112.