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Bloody Pancreatic Pleural Effusion: A Case Report

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Abstract

A 54-year-old male presented with massive left bloody pleural effusion. Thoracentesis revealed high level of amylase and lipase. The abdomen computed tomogram (CT) scan showed a pseudocyst of pancreatic tail and necrotizing pancreatitis with walled off necrosis formation that encroaching splenic vein and esophagus with upward extension to middle mediastinum and bilateral pleural effusion. The other differential diagnosis such as oesophageal perforation and certain neoplastic processes should be considered. After surgery of distal pancreatectomy with splenectomy, the symptom relieved.

Case History

A 54-year-old male presented with left anterior chest tightness and shortness of breath for days. He had the history of acute pancreatitis two months ago. He is a chronic alcoholic drinking about 300 ml/day of 58 percentage alcohol in kaoling liquor. Chest X-ray showed left massive pleural effusion with right-deviated trachea (**Figure A**). The results of bloody pleural effusion analysis of left side were as below: white blood cells (WBC): 900/ul with neutrophil predominant, red blood cells (RBC): 540000/ul. Lactate dehydrogenase (LDH): 483 U/L, total protein: 3.9 g/dl, hematocrit: 0.7%, amylase: 3043 U/L, lipase: 151800 U/L. Gram staining and culture showed negative finding. Cytology for malignancy was negative. The serum of LDH: 160 U/L, total protein: 6.6 g/dl.

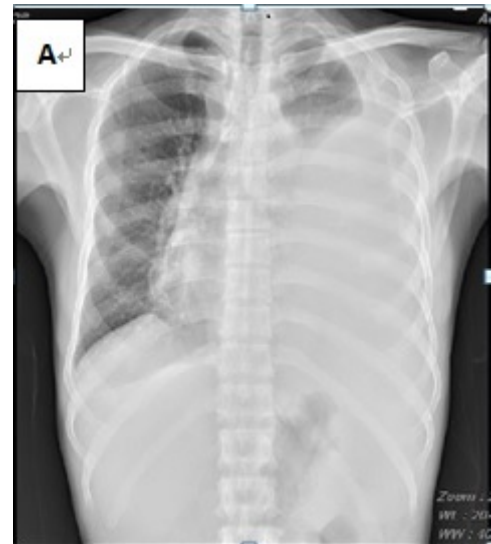


Figure A Massive left pleural effusion with right-deviated trachea.

Abdominal CT scan revealed a pseudocyst of pancreatic tail and poor enhancing region involving pancreatic tail with large amount of walled-off necrosis formation, which encroaching splenic vein and esophagus with upward extension to middle mediastinum and large amount of bilateral pleural effusion is also noted, suspect pancreatitis related (**Figures B and C**). Panendoscopy revealed duodenal polyps. Esophagography and aortography showed no leakage of contrast.



Figure B Pseudocyst formation in the pancreatic tail (Arrow).

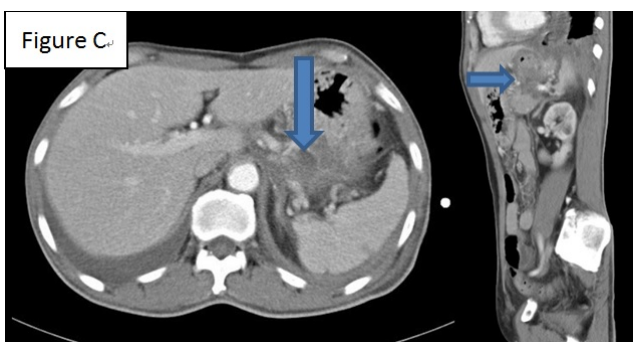


Figure C Necrotizing pancreatitis with walled-off necrosis formation with encroaching splenic vein and esophagus with upward extension to middle mediastinum (Arrow).

Therefore, the diagnosis of bilateral pancreatic pleural effusion which causing by pancreatic tail pseudocyst with large amount of walled-off necrosis formation were suggested. After communiting with patient about the benefits and risks of all treatment methods such as medical treatment or surgery, he decided to receive distal pancreatectomy with splenectomy. Before he was discharged from hospital with the CXR followed up that revealed the resolution of pleural effusion.

Discussion

Causes of amylase-rich pleural effusion are considered such as acute pancreatitis (<4000 IU/L), chronic pancreatitis with pseudocyst formation or pancreaticopleural fistula, oesophageal perforation and certain neoplastic processes including lung adenocarcinoma, lymphoma and ovarian, rectal, cervical, breast and pancreatic carcinoma [1]. In our case, the

cytology of pleural effusion showed negative finding, tumor marker screen which are normal in range, esophagography revealed no contrast leakage, pleural effusion analysis revealed high level of amylase and lipase. Therefore, the pancreatic pleural effusion was suspected.

In pancreatico-pleural effusion, pulmonary symptoms are more common than abdominal symptoms and dyspnea being the most common symptom [2]. The average duration of symptoms is 5.6 weeks [3]. Although usually left-sided, it can be right-sided or bilateral.

Pseudocysts develop in approximately 10% percent of patients with chronic pancreatitis. The formation of pancreaticopleural fistula that incidence reported about 0.4%~4.5% was uncommon complicated of chronic pancreatitis [4]. Pseudocyst is a fibroinflammatory ring is formed around the collection. Sankaran and Walt reported that alcoholism was the most common cause of pancreatitis [5].

The possible mechanism of bloody pancreaticopleural effusion was the pancreatic enzymes entering into the chest erode the pleural lining and disrupt subpleural vessels, thus causing bleeding into the pleural space [6].

The other diagnosis methods were endoscopic retrograde cholangiopancreatography and magnetic resonance cholangiopancreatography.

The treatment includes conservative treatment, medical treatment (octreotide and thoracentesis), endoscopic retrograde cholangiopancreatography plus/minus endoscopic pancreatic stent placement, and surgery [1].

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