Case Report

Chronic Pancreatitis Presenting with Right Pleural Effusion: A Case Report

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The authors present a case of right pleural effusion complicated by chronic pancreatitis. The patient was a 33-year-old man, who had progressive dyspnea with massive right pleural effusion for 2 months. He suffered significant weight loss of 10 kilograms but had no fever. Previously, he had a history of excessive alcohol consumption and chronic epigastrium pain for 2 year. At first, he was treated as tuberculous pleural effusion according to exudative lymphocytic pleural effusion. Diagnosis was delayed because of no abdominal symptoms at the time of admission. Chronic pancreatic pleural effusion was later diagnosed by calcified pancreas and suspected pseudocyst on CT chest included upper abdomen in addition with high pleural fluid amylase. ERCP was done followed by an operation. After operative procedure of pancreatic stone removal and sump drainage, serum amylase decreased and right intercostal drainage could be removed. The overall clinical presentation was improved and he was advised to stop drinking alcohol.

Keywords: *Pancreatitis, Pancreatic pleural effusion, Pancreaticopleural fistula*

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Massive pleural effusion is an unusual complication of chronic pancreatitis[1]. Its presentation is obscured by the predominance of pulmonary symptoms, as 68% of patients complain of chest symptoms while 24% of abdominal symptoms[2]. Therefore, delayed diagnosis is common[3]. The most common underlying cause of this entity is chronic alcoholic pancreatitis[2,4]. It is, thus, advisable to suspect this entity in patients with chronic alcoholic pancreatitis with unexplained pleural effusion. Small, transient, usually left-sided effusion, thought to be either lymphatic or sympathetic in origin, often occurs with acute pancreatitis. By contrast, chronic pancreatic disease, with or without pseudocyst formation may be associated with large, recurrent pleural effusion[5]. The authors report a case with massive right pleural effusion due to chronic pancreatitis and clinical subside after surgical intervention.

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Case Report

A 33-year-old, male farmer from Roi-et Province, Thailand, presented with 2 months of progressive dyspnea and chest discomfort. He had no fever and no cough, but significant weight loss of 10 kilograms. He presented at the district hospital with massive right pleural effusion. Pleural fluid tapping for analysis was done and he was treated with amoxicillin/clavu-lanate plus roxithromycin. Pleural fluid cytology was negative for malignancy. Repeated chest radiograph showed right hydropneumothorax and collapsed right lung. He was referred to Srinagarind (university) Hospital because there was no clinical improvement.

More information from history taking was obtained. He had a history of chronic consumtion of alcohol, drinking on average 2 or 3 days per week and often drunk for the last 18 years. He had off-and-on epigastric pain for the last 2 years, partially relieved with antacid and H_2-blockers. He smoked 15 packs-year. His appetite was good but he had recently experienced severe weight loss. He had a urinary frequency of 10 times during the day and 2-3 at night. He had no history of steroid abuse, contact with tuberculosis patients, or blunt trauma.

On admission at Srinagarind Hospital, the patient was a thin man with full consciousness and mild dyspnea. His vital signs were: temperature 36.7°C, blood pressure 126/88 mmHg, pulse 84/minute and respiratory rate 24/minute. He was not pale and had anicteric sclera. The cervical lymph nodes were not palpable and trachea was midline. The chest wall expansion was decreased on the right side. The chest physical examination revealed: decreased breath sounds, decreased vocal resonance and dullness on percussion of the right lower chest wall. The abdomen was soft, having no point of tenderness. The liver span was 10 centimeters and the spleen was just palpable. Signs of chronic liver disease, such as palmar erythrema and parotid glands enlargement, were not detected. The lower extremities showed no pitting edema or clubbing fingers.

The initial hemoglobin concentration was 9.6 g/dL (hematocrit 30.8%), and the white blood cell count was 9.3 x 10^5/L comprising of 64.6% neutrophils, 19.2% lymphocytes and 8.5% monocytes. The platelet count was 643,000 cells/mm^3. Urinary examination showed albuminuria and glycosuria. The fasting blood sugar was 115 mg/dL. The renal function and electrolyte were normal: BUN 6.3 mg/dL, creatinine 1.1 mg/dL, Na 135, K 4.2, HCO_3 28.9 and Cl 97 mEq/L. The liver function test revealed mild elevation of liver enzyme: cholesterol 143 mg/dL, albumin 4.1 g/dL, globulin 4.9 g/dL, total bilirubin 1.0 mg/dL, direct bilirubin 0.4 mg/dL, ALT 71 U/L, AST 30 U/L and alkaline phosphatase 168 U/L. A chest X-ray revealed right hydropneumothorax (Fig. 1).

Right intercostal drainage was done due to suspected iatrogenic hydropneumothorax from the previous pleural tapping. The characteristic of pleural fluid was serosanguinous, comprising red blood cell 5,500 cells, white blood cell 40 cells (18% neutrophils, 74% lymphocytes, 1% monocyte and 7% eosinophils), LDH 470 U/L and protein 5.1 g/dL. Acid fast bacilli staining was negative. The pleural fluid was sent for culture aerobic bacteria and tuberculosis.

Because of the exudative lymphocytic pleural effusion and the history of alcoholism and significant weight loss, anti-tuberculosis drugs were started. The right lung did not expand after 5 days of intercostal drainage, so the patient underwent bronchoscopy and CT chest. No endobronchial lesion was found. The CT chest, which included the upper abdomen, revealed right hydropneumothorax with thickened pleura, calcified pancreatic parenchyma with cystic lesion within the superior aspect of the lesser sac and retroperi-toneum (Fig. 2, 3). Then chronic pancreatitis with atypical pancreatic pseudocyst was suspected. The right intercostal drainage was revised. Pleural fluid was sent for re-evaluation. Pleural fluid amylase was found to be high, 859 U/L. Serum amylase and urine amylase were requested on the following day: the serum amylase was 892 U/L and urine amylase was 9,489 U/L. Endoscopic retrograde cholangiopancreaticography (ERCP) was done and chronic pancreatitis and pseudocyst connecting with the main pancreatic duct with pancreatic duct stone were found.

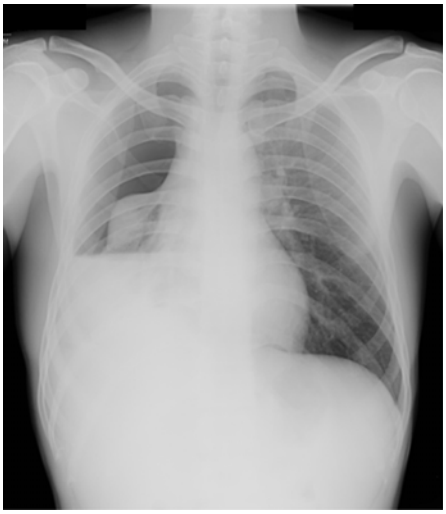

Fig. 1 Chest radiograph on the first day of admission showed right hydropneumothorax and collapsed right lung

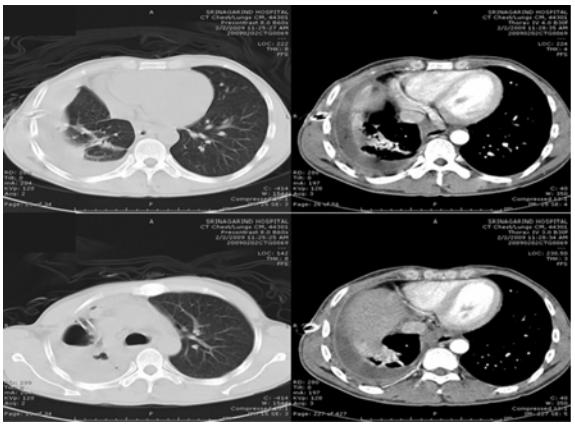

Fig. 2 CT chest included upper abdomen showed right hydropneumothorax and thickened pleura

The patient underwent exploratory surgery of the pancreas and to install drainage. The operative findings included: 1) thick, dull, swollen pancreatic head, body and tail; 2) no demonstration of pseudocyst; and, 3) palpated stones within pancreatic parenchyma confirmed by intra-op ultrasound. Stone removal and sump drainage installation at the lesser sac were performed.

Follow-up serum amylase on the day after surgery was decreased to 53 U/L. The amount of pleural fluid was decreased. Five days later the ICD could be taken out. After these findings, the anti-tuberculosis drugs were stopped. The patient was educated to stop drinking because of his chronic pancreatitis, complicated with right pancreaticopleural effusion. The last chest radiograph on the day of discharge was presented in Fig. 4. The finding was haziness of right lower lung with narrowing of right intercostals space and no hydropneumothorax.

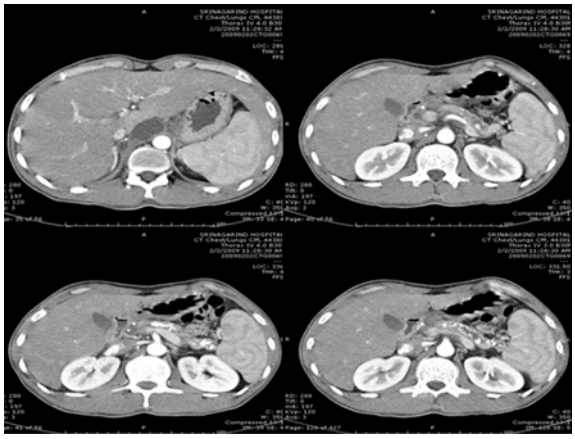

Fig. 3 CT chest included upper abdomen showed calcified pancreatic parenchyma with cystic lesion within superior aspect of lesser sac and retroperitoneum

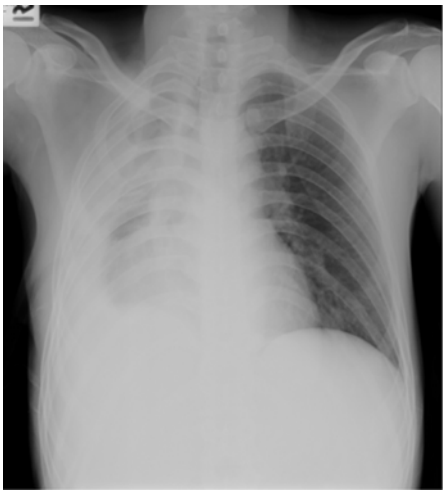

Fig. 4 Chest radiograph on the day of discharge showed haziness of right lower lung with narrowing of right intercostals space and no hydropneumothorax

Discussion

Massive pleural effusion is usually caused by malignancy[6] while other uncommon causes include tuberculosis and cirrhosis. Pancreaticopleural effusion complicated by chronic pancreatitis is rare. Then, suggested investigation in massive pleural effusion is analysis of the transudate or exudate characteristic, differential cell counts, cytology and adenosine deaminase activity (ADA). In the presented patient, the profile was exudative lymphocytic pleural effusion and negative for cytology. It was decided that the treatable cause was tuberculosis until the results of the tuberculosis culture became available.

When hydropneumothorax is detected after pleural tapping, it may be due to: 1) suction of air from atmosphere into the pleural space[7]; 2) atelectatic lung from endobronchial obstruction; 3) bronchopleural fistula from ruptured alveoli; 4) empyema thoracis from gas-froming organism; or, 5) ruptured esophagus. After investigation and management, hydropneumothorax in the presented patient was due to iatrogenic suction of air from the atmosphere into the pleural space during pleural tapping and a thickened pleura.

Other causes needed to be considered in the presented patient because he was too young and there was no risk of malignancy. On the other hand, he was not a typical case of tuberculous pleurisy because of the massive pleural effusion and having no fever. The tipping clue was his heavy drinking in addition to a history of epigastric pain and urinary frequency. Chronic pancreatitis and impair glucose tolerance for which an early and rapid diagnosis can be made by examining the pleural fluid for elevated amylase[8] and screening fasting blood sugar.

Patients with chronic pancreatitis and complicated with pancreaticopleural effusion usually delay in establishing the correct diagnosis. Most of the affected patients are males and over 90% have their pancreatic disease due to alcoholism[2,5]. Chest symptoms usually dominate the abdominal symptoms[2]. These patients report chest pain and shortness of breath more frequently than upper abdominal pain

and back pain. In one series of 113 patients from Japan, 42 complained of dyspnea and 29 complained of chest and back pain, while only 23 complained of upper abdominal pain[2]. The explanation for the lack of abdominal symptoms is that the pancreaticopleural fistula decompresses the pseudocyst[9]. Weight loss is also common in patients with chronic pancreatic pleural effusions[5].

Pleural effusion is usually large, sometimes occupying the entire hemithorax and have pressure effect to the mediastinum. In most cases, the effusion is unilateral and left-sided, but approximately 20% are unilateral and right-sided[2,5]. Fifteen percent are bilateral. The mechanism responsible for pleural effusion in patient with chronic pseudocyst is the development of a direct sinus tract between the pancreas and the pleural space. The lesion may be on the left or right side of the pleural space, depending on whether chronic pseudocyst is on the tail or the head of the pancreas. Sometimes extruded pancereatic fluid passes through the aortic or esophageal hiatus into the mediastinum, and then may decompress into one or both pleural spaces. Once fluid enters the pleural space, the pancreaticopleural fistula is likely to result in a massive chronic pleural effusion[10]. If a therapeutic thoracentesis is performed, the pleural effusion re-accumulates rapidly.

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[8]. The pleural fluid amylase is usually markedly elevated and higher than serum amylase. The elevated pleural fluid amylase is not only diagnostic of pan- creatic disease, so the other causes that should be considered are malignant pleural effusion and esophageal rupture[11]. Amylase isoenzyme determinations are useful in distinguishing among these diseases. The pleural fluid amylase is pancreatic type in pancreatic disease, and salivary type in malignant pleural effusion or esophageal rupture. Correlated clinical finding usually distinguish the etiology of high pleural fluid amylase level.

In the presented patient, serum amylase and urine amylase were both elevated as well as the pleural fluid amylase. The patient may have had acute on top of chronic pancreatitis, even though he did not have abdominal symptoms. The diagnosis is usually esta- blished by CT of the chest and upper abdomen. In the presented patient, calcified pancreas and suspected pseudocyst were detected. Endoscpoic retrograde cholangiopancreaticography (ERCP) is also useful in delineating the ductal structure, the pseudocyst and fistula connection to the pleura through the sinus tract[12]. Some patients have been successfully treated by placing stents in the pancreatic duct at the time of ERCP[13].

Conservative management to minimized pancreatic secretions is the mainstay of therapy[14], comprising insertion of a nasogastric tube, intravenous hyperalimentation, and decreased pancreatic exocrine secretion by somatostation or octreotide. After 2-3 weeks of conservative management, if pleural effusion does not resolve, surgical intervention should be considered[15]. The procedure should include removal of the disrupted portion of the gland and drainage of the pseudocyst. After management of chronic pancreatitis and pseudocyst, the pleural effusion usually spontaneously and gradually improves. In some cases, decortications have been performed according to chronic thickened pleura[16].

The presented patient underwent surgery and a pancreatic pseudocyst was not identified, but a swollen pancreas and pancreatic stone were detected. The patient responded to the operative procedure because of no re-accumulate of pleural effusion. Intercostal drainage was removed, but the lungs did not expand because of the thickened pleura. The patient was advised to stop drinking alcohol.

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ภาวะตับอ่อนอักเสบเรื้อรังที่มาด้วยน้ำในช่องเยื่อหุ้มปอดขวา: รายงานผู้ป่วย 1 ราย

วิภา รีชัยพิชิตกุล, ทิพวรรณ บวรกิตติวงศ์, เอกพล อัจฉริยะประสิทธิ์

ผู้ป่วยชายไทยอายุ 33 ปี อาชีพเกษตรกรรม มาด้วยอาการหอบเหนื่อยมากขึ้นมา 2 เดือน ไม่มีไข้ ไม่ไอ รับประทานอาหารได้ แต่น้ำหนักลด 10 กิโลกรัม ภาพถ่ายรังสีทรวงอกพบน้ำในช่องเยื่อหุ้มปอดข้างขวาปริมาณมาก ผู้ป่วยมีประวัติสูบบุหรี่ 15 ซอง-ปี ดื่มสุราปริมาณมาก และมีอาการปวดท้องใต้ลิ้นปี่ เป็น ๆ หาย ๆ มา 2 ปี แต่ครั้งนี้ไม่มีอาการปวดท้อง ผู้ป่วยได้รับการเจาะน้ำจากช่องเยื่อหุ้มปอดข้างขวามาตรวจ พบเซลล์อักเสบชนิดลิมโฟไซต์เด่น จึงได้รับการรักษาแบบวัณโรคเยื่อหุ้มปอด หลังการรักษาผู้ป่วยไม่ดีขึ้น ได้ส่งเอ็กซเรย์คอมพิวเตอร์ช่องอกและช่องท้องส่วนบนพบหินปูนและถุงน้ำที่ตับอ่อน ตรวจน้ำจากช่องเยื่อหุ้มปอดพบอะไมเลสมีระดับสูง ผู้ป่วยได้รับการผ่าตัดเอานิ่วออกจากท่อน้ำดีในตับอ่อนและระบายน้ำจากถุงน้ำ หลังผ่าตัดผู้ป่วยมีอาการดีขึ้น สุดท้ายได้รับการวินิจฉัยว่าน้ำในช่องเยื่อหุ้มปอดขวาเป็นภาวะแทรกซ้อนจากภาวะตับอ่อนอักเสบเรื้อรัง ผู้ป่วยได้รับคำแนะนำให้หยุดดื่มสุรา