Pancreaticopleural fistula masquerading as hemorrhagic pleural effusion

Sir,

Acute or chronic pancreatitis or trauma to the pancreas can complicate as a recurrent pleural effusion. Although most of them are either left sided, it could present on the right side occasionally. Very rarely, perforation of pseudocyst forms through a pancreaticopleural fistula causing the free flow of pancreatic enzymes into the area surrounding the lungs and leading to recurrent pleural effusion with cystic presentation. These fistulas have been noted in 2.3%–4.5% of cases of pleural effusion. A 24-year-old male, chronic alcoholic, presented with a history of cough, fever, weight loss, right-sided chest pain, and abdominal pain for 6 months. Chest movements were decreased on the right hemithorax with the use of accessory muscles. Dull percussion note was present from the right third intercostal space onward. Air entry was reduced on the right side.

It was revealed that the patient had a hydatid cyst excision with laparotomy in the year 2000. The patient had a history of pancreatitis and ascites with raised serum amylase level in June 2016 and was treated symptomatically. In September 2016, he was diagnosed with a case of the left hydropneumothorax and underwent multiple thoracentesis and around 15–20 L of hemorrhagic fluid was drained over a period of 4–5 months.

In October 2016, he was started on antitubercular therapy for nonresolving pleural effusion, again was diagnosed with a case of right-sided pleural effusion, and multiple thoracocentesis performed over the next 3 months.

We ordered chest X-ray, which showed dense homogenous opacity with air-fluid levels and mediastinal shift to the opposite site with calcified lesion on the right hypochondrial region. The differential diagnosis of subphrenic abscess or intrathoracic hydatid cyst was kept.

The possibility of pancreatitis was kept as differential after seeing the chronicity of the disease and a history of pancreatitis. Amylase and lipase were done even to rule out which revealed higher values than normal.

Computed tomography (CT) scan of the chest with abdomen suggested a large cystic lesion with air-fluid level and uniformly enhancing 2.5 mm thick wall on the right side. The presence of fistulous opening from the right hemithorax, communicating with pseudocyst of the body of pancreas was noticed. The presence of calcified hydatid cyst in the right lobe of the liver was detected. The findings were suggestive of pancreaticopleural fistula [Figure 1].

As per guidelines, he was advised to undergo endoscopic retrograde cholangiopancreatography (ERCP) to which he refused. After seeing, his chronicity and also the complete obstruction of the distal pancreatic duct were seen in ultrasound, which made the patient ideal candidate for operative management.

As this, the patient would even have caused failure to endoscopic management was referred to cardiothoracic and vascular surgery surgeon. Right-sided thoracotomy with fluid evacuation with pseudocyst removal was done. Intraoperative samples showed raised fluid amylase (2467 U/L) and lipase (2689 U/L). The histopathology of thoracic cyst wall confirmed the presence of pseudocyst of pancreas.

Postoperative chest X-ray and CT-scan showed the collapse of the fistulous opening between pancreas. The patient was also given injection octreotide 100 µg in stat subcutaneously followed by 50 µg subcutaneously 8 hourly for 5 days. He improved symptomatically.

Pancreatitis is known to present rarely with complications such as hemorrhagic pleural effusion. The pleural effusion in chronic pancreatitis could be missed because of lack of abdominal symptoms.

One of the suggested mechanisms includes the transdiaphragmatic transfer of fluid through lymphatic, diaphragmatic perforation of pseudocyst and mediastinal extension, and a fistula connecting a pancreatic pseudocyst with the pleural cavity. When there is a disruption of the pancreatic duct posteriorly, an internal fistula arises between the pancreatic duct and the pleural space, produces a left-sided massive pleural effusion. Pancreatitis can cause two types of pleural effusions

1. A small left-sided effusion with normal amylase activity (below 100 U/L) and low-protein concentration (below 3 g/dl) seen in acute pancreatitis and resolves spontaneously
2. The second type is related to the presence of pancreaticopleural fistula in the course of chronic or recurrent pancreatitis; this effusion is usually large, unilateral, and recurrent, with the level of amylase above 100 U/L and protein above 3 g/dl.
These two forms should be recognized in view of their different complication rates, progress, and treatment. Clinically, if a patient with pancreatitis and massive pleural effusion has increased the activities of amylase and protein concentration, it should raise the suspicions of pancreaticopleural fistula.[4]

A pancreaticopleural fistula is a rare complication of pancreatitis with a reported incidence of only 0.4%–4.5%.[5]

Available treatment modalities include (1) conservative management, (2) ERCP – with or without endoscopic pancreatic stent placement, and (3) surgery.[4] The mainstay of medical treatment includes thoracocentesis and somatostatin analog.[5] The success rate of nearly 30%–60% is seen with conservative treatment, and the recurrence rate is around 15%. The rate of mortality is 12%. Only one-third of the patients respond with conservative management. Most of the patients need either endoscopic or surgical intervention.

To conclude, the patient presenting with recurrent hemorrhagic effusion should thoroughly be investigated to rule out etiology rather than putting the patient on antitubercular drugs and immediately intervening with intercostal drain tube. Furthermore, it should be kept in mind that the patient presenting with a history of pancreatitis with effusion should undergo serum amylase and lipase specifically if the effusion is persistent and not responding to the treatment. Here, in this case, misleading points for us toward the diagnosis because of its cystic presentation and also the history of hydatid cyst of the liver. Hence, all this point should be considered before intervening patients with drain tube.

Declarations of patient consent
The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest
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