

Case Report

Pancreatico pleural fistula - a rare complication of chronic calcific pancreatitis

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ABSTRACT

Chronic pancreatitis is associated with permanent structural changes in pancreas, leading to impairment of exocrine and endocrine function. Recurrent acute pancreatitis in chronic pancreatitis is a common complication in practice. We came across a rare complication of persistent left sided hemorrhagic pleural effusion due to pancreaticopleural fistula. Diagnosis was made by detection of high levels of pleural fluid lipase and amylase levels. An 11-year-old female presented with fever, abdomen pain and persistent left sided hemorrhagic pleural effusion for four months, which ultimately turned out to be acute on chronic calcific pancreatitis with pancreaticopleural fistula which was successfully surgically treated.

Keywords: Pancreaticopleural fistula, Acute on chronic pancreatitis, Complications, Chronic pancreatitis, Persistent pleural effusion

INTRODUCTION

Pancreaticopleural fistula is a rare diagnosis occurs in 0.4% of patients with chronic pancreatitis. Chronic pancreatitis is a fibro inflammatory disease characterised by low grade inflammatory state. It is usually associated with recurrent episodes of acute exacerbation.¹ Chronic pancreatitis is a progressive and irreversible inflammatory process characterized by fibrotic tissue replacing the pancreatic parenchyma.² Persistent abdominal pain, exocrine pancreatic insufficiency, malabsorption, pseudo cyst and splenic vein thrombosis are some complications of chronic pancreatitis.³

We came across a rare complication of persistent left sided hemorrhagic pleural effusion due to pancreaticopleural fistula in a 11-year-old female child. Pancreaticopleural fistula is a rare complication of pancreatitis that requires high index of suspicion as patient presents with persistent pulmonary symptoms.

CASE REPORT

A 11-year-old female child, 3rd issue of 2nd degree consanguineous marriage, residing at Jeevargi, District-Kalburgi, Karnataka, Hindu by religion, was referred from private children hospital, with chief complaints of: fever (on and off) since 4 months, chest pain since 3-4 months, abdominal pain since 4 months, and not gaining adequate weight since last 2 months.

Child was apparently asymptomatic 4 months back, when she initially developed fever which was insidious in onset, low to moderate grade, undocumented, not associated with chills and rigors, temporarily relieving after taking oral medications after showing to local practitioner. For on and off fever spikes, child was admitted in local practitioner twice in Kalburgi, over the period of last 3 months and had received treatment in the form of IV saline, injections and oral medications. Since last 3-4 months, child was also complaining of chest pain which was more on left side, aggravating on exertion or deep inspiration with no any

postural or diurnal variation, temporarily relieving after taking oral medications.

There was also a history of abdominal pain in last 4 months which was dull aching, continuous, periumbilical with waxing waning in severity. In last 2 months, child also started developing cough which was dry in nature, intermittent, without expectoration and did not relieve even after treatment.

In last 15 days, symptoms were persistent with fever, cough, abdominal pain, intermittent episodes of vomiting and chest pain, not relieving after treatment for which child was taken to private hospital in Miraj where some blood investigations, chest X-ray and ultrasonography (USG) was done, which revealed left sided gross pleural effusion hence child was referred to Bharati Hospital, Sangli for further management. No history of symptoms suggestive of tuberculosis. No history of convulsions, altered sensorium, jaundice. There was weight loss history weight loss by 4 kg in last 2 months present. Family history was not significant.

Birth history was Full term normal vaginal delivery, cried immediately after birth, birth weight was 3 kg. Immunization history was up to date according to national immunization schedule. BCG scar was present.

On general examination, patient was Conscious, malnourished, afebrile, tachypnoeic, SpO₂ 97-98% on room air, some pallor present. No clubbing, cyanosis, lymphadenopathy.

On respiratory system examination, air entry was absent in left mammary, inframammary, axillary, infra axillary and left scapular, infrascapular region.

Investigations

Complete blood count (CBC) - Hb 9.1 gm/dl, total leucocyte count (TLC) - 7190, platelets - 372000, QCRP-0.4 mg/dl, chest X-ray (CXR) and USG chest s/o left sided gross pleural effusion. Pleural fluid protein 2.5 gms/l, sugar 94 mg/dl, poly 20%, lymphocytes 20%, lactate dehydrogenase (LDH) 810 U/l (120-240), and CBNAAT-negative.

Course during 1st hospital stay

For above mentioned complaints, child was admitted in HDU and supportive treatment was started with minimal O₂ support, antibiotics and antipyretics. On day 3rd of hospital admission, repeated CXR showed persistent left sided gross pleural effusion hence therapeutic pleural tapping was done and around 200 ml of haemorrhagic pleural fluid was tapped and child was kept under observation. During the hospital stay, child underwent frequent therapeutic pleural tapping (150-200 ml, haemorrhagic) but gross left sided pleural effusion was still persistent in posterior aspect of left lung.



Figure 1: Day 1: left side pleural effusion.



Figure 2: Day 7: left side pleural effusion after tapping.



Figure 3: Day 15: left sided persistent pleural effusion after tapping.

In view of persistent pleural effusion, high-resolution computed tomography (HRCT) was planned, revealing gross left sided pleural effusion with underlying collapse/consolidation. No gross lung abnormality detected. But it accidentally picked up intraductal pancreatic calcification for which triple phase contrast enhanced computed tomography (CECT) abdomen was done, revealed atrophic pancreas with multiple intra ductal and intra parenchymal calcifications, multiple hyperdense collection pockets in peripancreatic location along head, uncinate process and tail region, suggestive of sequelae to chronic calcific pancreatitis with pseudo cyst showing mass effect, serum lipase 192 U/l and amylase 279 U/l both were s/o acute pancreatitis.

Normally pleural effusion associated with pancreatitis is transudative and doesn't show immediate refilling on tapping. In our case pleural effusion was turbid and haemorrhagic and refilled rapidly which made us to think of pancreaticopleural fistula. So, pleural fluid analysis was sent again, and revealed pleural fluid amylase 4956 U/l (20-115), pleural fluid lipase 810 U/l (120-240) which was very high, suggestive of pancreaticopleural fistula. Since child was hemodynamically stable, child was discharged after 10 days and was planned for ERCP with SOS stenting on follow up.

Course during 2nd hospital admission

Child was readmitted 23 March 2024 for further intervention. On admission chest X-ray and USG chest revealed gross left sided pleural effusion. Abdominal pain and chest pain was still persistent and child was looking pale. Diagnostic ERCP was planned on 7th day. ERCP was done, s/o incomplete pancreatic divisum with large main pancreatic duct calculi and pancreatic duct leak with possibility of pancreatico-pleural fistula. But as the guide wire cannot bypass the pancreatic duct calculi, further process was abandoned and with consult with paediatric surgeon, child was posted for open laparotomy.

Intraoperatively, it was discovered that tail of pancreas was inflamed and densely adherent to vessels and bleeding was present. Two large calculi were removed from pancreatic duct f/b pancreatico-jejunosotomy and jejuno-jejunosotomy. One aliquot of PCV was transfused intra operatively and operative was uneventful.

Post operatively, ICD was inserted on left side in view of pleural effusion which gradually resolved over the period of next 3-4 days and ICD was clamped and removed on day 5th post-operative day. Child was kept NBM post operatively. Gradually liquid diet was started on post op day 4 and slowly shifted to regular diet by 8 days.

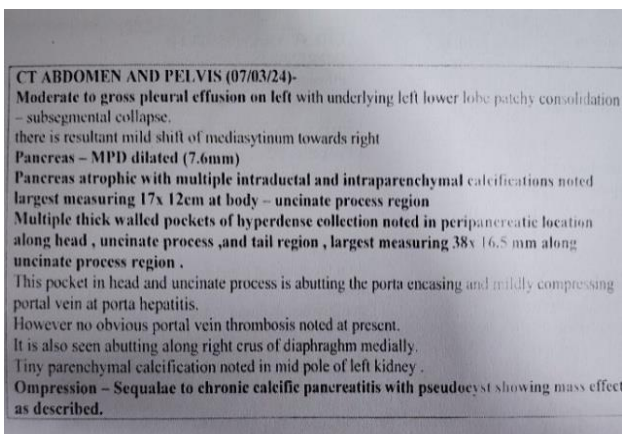


Figure 4: CT abdomen report.

Repeat CXRs showed no evidence of pleural effusion after ICD removal. Child gradually improved over the period of next 7-8 days, accepting regular diet, passing flatus and

stools, hemodynamically stable with healthy operative site with no any post op complications hence discharged on oral multivitamins and hematinics.

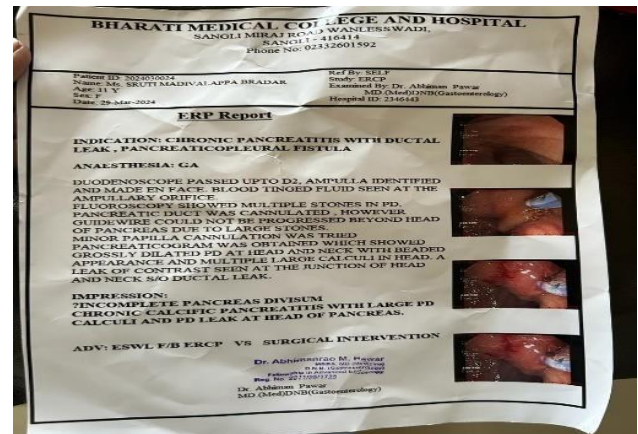


Figure 5: ERCP report.

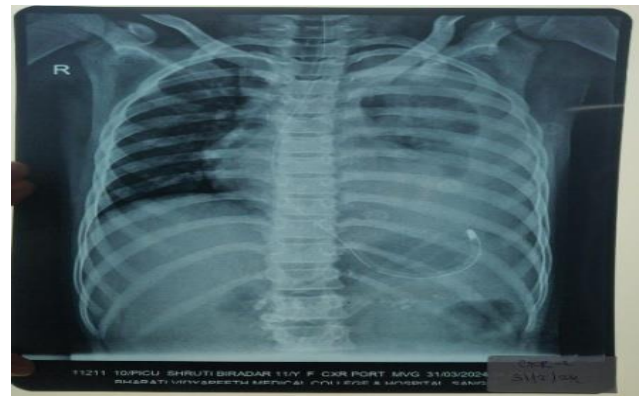


Figure 6: Post op day 3/pre ICD insertion.



Figure 7: Post-operative day 7 X-ray showing clearance of pleural effusion.

DISCUSSION

Chronic pancreatitis is a progressive and irreversible inflammatory process characterized by the replacement of pancreatic parenchyma by fibrotic tissue.⁵ Chronic or acute recurrent pancreatitis, though uncommon is the

important cause of chronic or recurrent abdominal pain. Acute abdominal pain, vomiting, fever are the common symptoms of acute pancreatitis. Symptoms suggestive of complications of chronic pancreatitis include poor appetite, excessive flatulence, growth failure, weight loss, diarrhoea and symptoms of diabetes.

Pancreaticopleural fistula is a rare complication of chronic pancreatitis. Due to chronic inflammation, an abnormal communication develops between the pancreatic duct and pleural space, leading to pancreatic secretions draining into pleural space causing pleural effusion which is very high in amylase levels.^{1,5} The diagnosis of Pancreaticopleural fistula can be confirmed by ERCP in 80% cases.^{5,6} Magnetic resonance cholangiopancreatography may demonstrate pancreatic involvement and fistula without need for contrast which is non-invasive.⁵

In our case we picked up a rare complication of chronic pancreatitis as persistent left hemorrhagic pleural effusion. The most possible explanation for this was complete main pancreatic duct obstruction with large calculus and congenital duct narrowing due to congenital anomaly of pancreatic divisum. Our case very well responded to pancreatic duct stone removal, pancreaticojejunostomy and jejunojejunostomy. Most of the cases of pancreaticopleural fistula were seen in adult population very few cases are seen in children with chronic pancreatitis.

CONCLUSION

Pancreaticopleural fistula is a rare complication of chronic pancreatitis which occurs approximately in 0.4% of patient with pancreatitis. High index of suspicion is required for the diagnosis of pancreaticopleural fistula. In our case persistent of left sided hemorrhagic pleural effusion with recurrence on tapping with association of very high pleural fluid lipase and amylase level made us to suspect PPF, which was also associated with congenital duct narrowing due to congenital anomaly of pancreatic divisum in our case which increased the risk of development of pancreaticopleural fistula which was successfully managed by surgery.

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