CASE REPORT

Isolated Mediastinal Pseudocyst of the Pancreas

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Background: Mediastinal pancreatic pseudocyst is a rare complication of pancreatitis. **Case characteristics:** An 8-year-old boy with chest pain and shortness of breath. Computed tomography of chest showed a cystic mass in the mediastinum. The cyst aspirate revealed high amylase and lipase levels, suggestive of pancreatic pseudocyst. **Outcome:** The patient gradually recovered after Roux-en-Y cystojejunostomy. **Message:** Cysto-jejunostomy is a viable treatment option for mediastinal pancreatic pseudocyst, especially with failure of medical therapy.

Keywords: *Cystojejunostomy, Management, Transdiaphragmatic approach.*

Isolated mediastinal pancreatic pseudocyst (IMPP) is infrequently reported in literature. It occurs when inflammatory exudative fluid enters the mediastinum through the native diaphragmatic rents and produces mediastinal pseudocyst of the pancreas (MPP) [1]. An atypical clinical presentation makes the clinical diagnosis challenging. Although, presumptive diagnosis and minimally invasive therapeutic inter-ventions for MPP have now become possible with upgraded imaging techniques, yet the specific surgical management remains a dilemma.

Case Report

An 8-year-old boy was admitted with unrelenting chest pain and shortness of breath of 4 months' duration. He was receiving anti-tubercular therapy for the same from another center. After admission, the child became severely dyspneic and developed circulatory failure. Echocardio-graphy revealed pericardial effusion which needed ultrasonography (USG) guided aspiration on two occasions. A detailed history revealed absence of fever, vomiting, pain abdomen, hemoptysis, hematemesis or abdominal trauma. Laboratory findings revealed anemia but serum adenosine deaminase, amylase and lipase were not raised. Chest *X*-ray showed mediastinal widening. USG revealed a thoraco-abdominal cystic lesion with pancreatic calcification. USG-guided aspiration of the cyst yielded pale sanguineous fluid which showed high amylase (279,000 U/L) and lipase (206,500 U/L) but was negative for acid fast bacillus. A possibility of pancreatic pseudocyst extending into the mediastinum was entertained. Contrast enhanced computed tomography revealed a tri-foliate shaped, large encysted lesion in the posterior mediastinum while that of abdomen did not reveal any abnormality in pancreas (***Fig.* 1**).

After a few days, the child presented with chest pain and dyspnea that could not be managed by medical therapy alone. Hence, surgical drainage of the cyst was planned. Initially, abdomen was explored with a transverse epigastric incision but, there was no evidence of inflammation or collection around the pancreas. The same incision was extended along left 7th intercostal space across the diaphragm. There was a thick walled large isolated cyst in the posterior mediastinum which was aspirated. The cyst was opened in between stay sutures and 1.5 litre of pale sanguineous fluid was drained. A jejunal Roux loop was brought up to the mediastinum through an opening in the diaphragm and anastomosed to the interior wall of the cyst in the form of Roux-en-Y cystojejunostomy (RCYJ).

Oral feeding was initiated on 6th post-operative day. The intra-operative cyst aspirate again showed extraordinary high amylase and lipase levels. Biopsy of the excised cyst wall suggested a benign cyst without any true lining epithelium. A repeat USG after three weeks showed significant reduction in the size of the pseudocyst. At the time of discharge, the child was asymptomatic.

Discussion

The most accepted hypothesis of MPP is extension of abdominal pseudocyst into the mediastinum through any

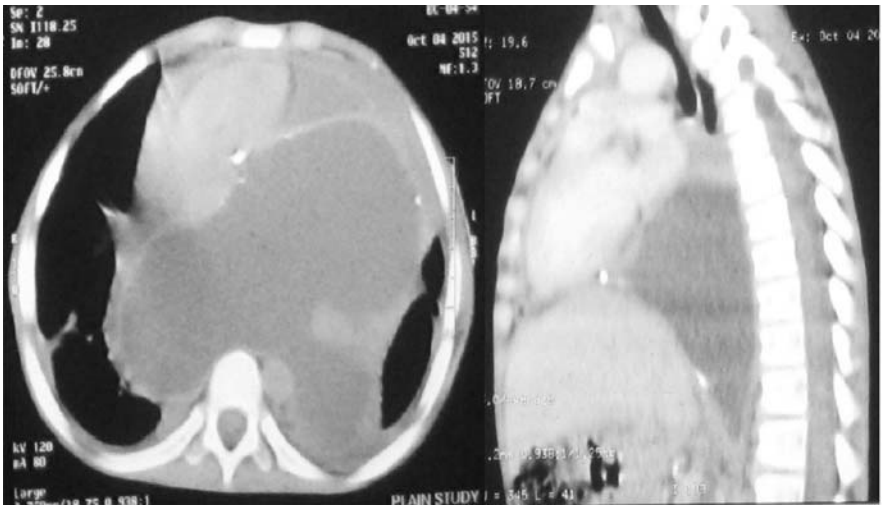

***Fig.* 1** *Contrast-enhanced computed tomograph of thorax shows large encysted mediastinum lesion with tri-foliate shape, thick enhancing walls and lobulated outlines in the posterior mediastinum. The heart is pushed anteriorly with mild pericardial effusion.*

of the hiatal openings or through the diaphragmatic crura. An ectopic pancreatic tissue in the mediastinum may also produce it following abnormal differentiation of pluripotent epithelial cells of the ventral primary foregut or migration of the cells from pancreatic bud [2]. Isolated variety possesses some peculiar features unlike the abdominal pseudocyst. First, symptoms are non-specific (chest pain, shortness of breath, fever, night sweats, heart murmur, fatigue, chronic pulmonary infiltrate and tamponade) and mainly due to large mediastinal cystic mass. Thus, it is often confused with thymoma, mediastinal teratoma, lymphoma and cystic lung lesion like congenital cystic adenomatous malformation. In our case, as the USG revealed thoraco-abdominal cystic lesion with pancreatic calcification, a possibility of MPP was kept and USG guided aspiration was performed to estimate the amylase/lipase. Second, the serum amylase and lipase levels may not be raised in isolated variety. Third, it does rarely resolve spontaneously. Fourth, complications like interstitial lymphedema, pericardial effusion and cardiac tamponade are common in long standing cases [3]. The role of definitive surgical management of IMPP is still unclear.

Several management strategies like medical, endoscopic procedure, surgical drainage and image guided external drainage have been described in literature. Each of the options needs to be selected carefully considering the location, number, size, communication and status of the pancreatic duct. Complete resolution of the cyst is reported with use of octreotide (somatostatin analogues) in addition to bowel rest and parenteral nutrition [4]. Both transpapillary nasopancreatic drainage and endoscopic USG guided internal drainage (via transgastric or transesophageal) have been reported but, they are associated with innumerable complications [5]. Endoscopic transpapillary stent is only applicable when pseudocyst communicates with the pancreatic duct [6]. External drainage procedure is not acceptable due to increased chances of bleeding, infection, clogging of catheters, recurrent cyst and risks for formation of a permanent fistula. Choice of treatment is internal drainage procedure in the form cysto-esophagostomy (CE) or cysto-gastrostomy (CG) or RCYJ. Both CE and CG are associated with reflux and mediastinitis. Moreover, the length may not be adequate to access the cyst cavity and excessive pulling may cause twisting of the cardio-esophageal junction and tension at anastomotic site [7]. A trans-diaphragmatic RYCJ has been evolved to ease a tensionless anastomosis, especially for IMPP where a de-functioning jejunal loop is anastomosed with the cyst at its dependant part. Thus, chances of mediastinitis and reflux are minimal [8].

The management of IMPP is challenging as several controversies exist regarding its specific treatment. Early diagnosis can be made if this condition is kept in mind while treating any longstanding case of mediastinal cystic mass. Trans-diaphragmatic RYCJ seems to be a viable option for the treatment of IMPP.

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