



Case Report

## Mediastinal Pancreatic Pseudocyst - A Case Report

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### ABSTRACT

Pancreatic pseudocyst, a common complication of pancreatitis, in rare instances may also extend to the mediastinum. A mediastinal pseudocyst can cause symptoms due to compression or invasion of surrounding structures. They may lead to pleural or pericardial effusion, cardiac compression due to mass effect. Esophageal compression causes dysphagia. We report the case of a 31 years old male chronic alcoholic patient with complaints of dysphagia. Chest radiograph showed left pleural effusion with retrocardiac opacity. Computed tomography scan (CT scan) was performed showed large cystic collection in left upper abdomen in retro-gastric region extending in posterior mediastinum, displacing lower esophagus and gastro-esophageal junction anteriorly. Mass effect was seen over heart and esophagus. Mild left pleural effusion and minimal pericardial effusion was also seen. Surgery was performed and post-operative recovery was uneventful. Follow up CT scan study after one month showed near complete resolution of the cyst. The literature was reviewed for clinical presentation, complications, and available treatment options for mediastinal pancreatic pseudocyst.

Correct pre-operative diagnosis is important for proper surgical treatment and complete resolution of mediastinal pseudocyst is possible with surgery

**Key-words:** Mediastinal cyst, Pseudocyst, Pancreatitis, complication of pancreatitis

### INTRODUCTION

Pseudocyst formation is common complication of pancreatitis. More often these cysts are located inside and around pancreas in abdomen. Most often pseudocyst arise due to leakage of pancreatic secretions into surrounding tissues, wherever tissue planes has least resistance<sup>(1,2)</sup>. Rarely pancreatic pseudocyst can extend to mediastinum<sup>(3,4)</sup>. They may lead to pleural or pericardial effusion, cardiac compression

due to mass effect.<sup>(5)</sup> The mediastinal pseudocyst may present with chest pain, dyspnea, dysphagia, odynophagia, pseudoachalasia and cardiac tamponade<sup>(4-6)</sup>

We report the case of a patient with history of chronic pancreatitis suffering from dysphagia. Imaging revealed large cystic lesion in posterior mediastinum, mass effect was seen over heart and esophagus. Surgery was performed and there was complete regression of pseudocyst.

## CASE REPORT

A 31 years old male patient, with a known history of chronic alcohol abuse presented to Radiology department for CT scan study of abdomen and thorax.

Patient had complaints of dysphagia for solids and liquids.

Patient had past history of chronic pancreatitis over last six months.

Investigations reveal raised serum amylase.

Chest radiograph showed left pleural effusion with retrocardiac opacity (figure 1)



Figure.1. Chest radiograph shows retro-cardiac opacity with left pleural effusion

Pleural fluid analysis showed raised amylase CT scan was performed showed large cystic collection in left upper abdomen in retro-gastric region extending in posterior

mediastinum, displacing lower esophagus and gastro-esophageal junction anteriorly. Mass effect was seen over heart and esophagus. Mild left pleural effusion and minimal pericardial effusion was also seen (Figure 2). Multiplanar reformations proved to be helpful for the accurate and better assessment of pancreatitis complications. The collection showed thin enhancing wall with bulk of cyst was seen in posterior mediastinum with associated left pleural effusion (Figure 3a and 3b). Proximal esophagus appeared dilated.

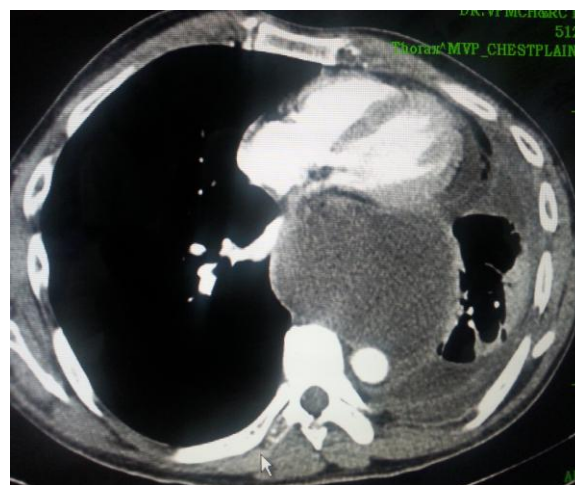


Figure 2. Axial post-contrast CT scan showing mediastinal pseudocyst causing compression of esophagus and mass effect over the heart. Minimal pericardial effusion and left pleural effusion also noted

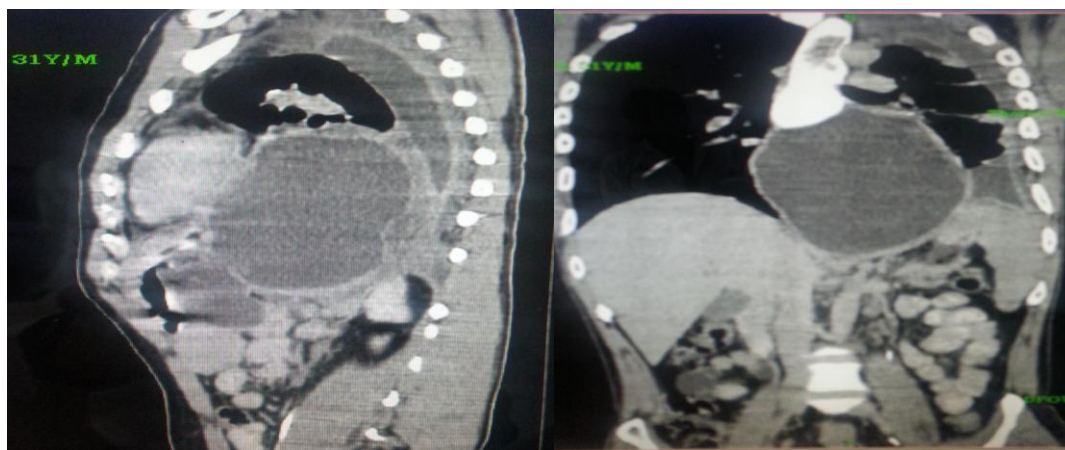


Figure 3a

Figure 3b

Sagittal and coronal CT scan reconstruction of the same patient shows extension of pseudocyst in mediastinum, associated left pleural effusion also seen.

Pancreas showed heterogeneous appearance with dilated pancreatic duct.

The collection was seen in close proximity of pancreatic tail region (figure 4a and 4b)

Pleural fluid biochemistry showed high amylase levels thus confirming the lesion to

be pancreatic pseudocyst with mediastinal extension.

Surgery was performed and post-operative recovery was uneventful.

Follow up CT scan study after one month showed near complete resolution of the cyst (Figure5)



Figure 4a



Figure 4b

Axial post-contrast CT scan of the patient shows atrophic pancreas with prominent pancreatic duct. Peri-pancreatic and retro-gastric cystic collection s/o pseudocyst is seen.



Figure 5: Abdominal CT scan of same patient 1 month later showing complete resolution of pseudocyst with regression of mass effect over heart and esophagus.

## DISCUSSION

Mediastinal pancreatic pseudocyst was first described in 1951<sup>(7)</sup> and it remains a rare complication of pancreatitis. Pathophysiologically it develops after rupture of pancreatic duct posteriorly into the retroperitoneal space. In general mediastinal pancreatic pseudocyst extends through aortic

and esophageal hiatus; therefore posterior mediastinum is most common location.<sup>(5,6,8)</sup>

Direct penetration of the diaphragm, foramen of Morgagni and inferior vena cava hiatus are less frequent sites of entry into mediastinum.<sup>(3,9)</sup>

The mediastinal pseudocyst may present with chest pain, dyspnea, dysphagia, odynophagia, pseudoachalasia and cardiac tamponade.<sup>(4-6)</sup>

Our patient presented with history of dysphagia and chest discomfort and left pleural effusion. Pleural effusion is present in majority of case.<sup>(4)</sup>

It has been postulated that pleural effusion is due to lymphatic obstruction due to peri-cystic inflammation.

CT scan very well demonstrates posterior mediastinal extension of cystic lesion with evaluation of pancreas as well, so it has been investigation of choice. Multiplanar reformations proved to be helpful for the accurate assessment of pancreatitis complications and important for intervention planning.<sup>(1)</sup> Fluid from a mediastinal cyst under ultrasound guidance showing high

amylase level can confirm the diagnosis of a mediastinal pseudocyst <sup>(10)</sup> Complications due to mediastinal pseudocyst can occur due to compression, invasion, or rupture of pseudocyst into surrounding structures. Congestive cardiac failure by enlarging pseudocyst, <sup>(11,12)</sup> life threatening cardiac tamponade secondary to erosion of pseudocyst into the pericardial sac have been reported in literature. <sup>(13)</sup> CT scan can be helpful in diagnosing the complications of mediastinal pseudocyst. Several treatment approaches have been described in treatment of mediastinal pseudocyst which includes conservative management, medical management with somatostatin analogues, <sup>(14)</sup> total parenteral nutrition. <sup>(15)</sup> Endoscopic interventions <sup>(2)</sup> and transpapillary pancreatic stenting <sup>(3)</sup> have been reported. Drainage of pseudocyst using endoscopic ultrasound - guided trans-esophageal approach has been documented. <sup>(16)</sup> The surgical procedures are considered in symptomatic patients and if there are associated complications such as infection, obstruction, rupture or hemorrhage. <sup>(17)</sup>

## CONCLUSION

The extension of pancreatic pseudocyst into the mediastinum is an uncommon entity. The clinical presentation, features of pancreatitis, CT findings of pseudocyst with mediastinal extension and raised serum amylase as well as pleural fluid amylase level helped the diagnosis. Correct pre-operative diagnosis is important for proper surgical treatment and complete resolution of mediastinal pseudocyst is possible with surgery

### Abbreviations:

CT- Computed tomography

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