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A TALE OF THORACIC PSEUDOCYST.

Radio-Diagnosis

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ABSTRACT

Pancreatic and peripancreatic Pseudocyst formation is a common complication of pancreatitis. These are formed due to disruption of the pancreatic duct along the paths of least resistance, resulting in internal and external pancreatic fistulas. Internal fistulas are formed due to abnormal communication with the pleura or the peritoneum while external fistulas are usually pancreatic-cutaneous. We are presenting imaging features of a case of thoracic pseudocyst.

KEYWORDS

Pancreatitis, Pseudocyst, CECT, Radiograph.

INTRODUCTION

Pseudocysts are a common complication in patients with pancreatitis, usually located in peripancreatic areas. A mediastinal pseudocyst is rarely reported, with the exact incidence not known [1]. Pseudocyst formation occurs due to ductal disruption leading to the release of the amylase-rich pancreatic secretions along the paths of least resistance.[2] They are formed due to leakage of the amylase-rich pancreatic secretions in the surrounding tissues due to disruption of the pancreatic duct along the paths of least resistance, resulting in internal and external pancreatic fistulas.[2]

Internal fistulas are formed due to abnormal communication with the pleura or the peritoneum while external fistulas are usually pancreatic-cutaneous. Anterior disruptions cause ascites while Posterior disruptions can lead to thoracic-pancreatic fistulae. Thoraco-pancreatic fistulae are rare complications leading to massive pleural/pericardial effusions.

Mediastinal pseudocyst due to its unique location presents with an atypical and wide range of symptoms like dysphagia, chest pain, or palpitations and in extreme cases pericardial effusion, tamponade, and respiratory distress [2]. It can be a diagnostic and therapeutic challenge. A high index of suspicion is often needed in diagnosing this entity. Understanding Pancreatic ductal morphology and its communication with the pseudocyst is of paramount importance in successful management. With improvements in imaging techniques, more cases are detected.

In this study, we present our case study on mediastinal pseudocysts.

Case :

A 40-year male with a history of alcohol-induced pancreatitis presented with chest pain and breathlessness for 2 weeks. There was no h/o fever, hemoptysis, or weight loss. He had H/o acute pancreatitis 1 year back.

- A **chest radiograph PA** view was performed which showed massive left-sided pleural effusion with the mediastinal shift. **[figure1]**

Blood investigations showed the following:

- WBC- 8000/mm3
- Sr. Amylase- 400 U/L
- Sr. Lipase- 200 U/L
- The rest of the blood investigations were within normal range.
- **USG Thorax:** confirmed the left pleural effusion.
- Diagnostic aspiration and analysis of the pleural fluid were done.
- Pleural Fluid amylase:5200 U/L, negative for malignancy or infection.
- **Patient underwent contrast-enhanced CT of the Abdomen and Pelvis which showed [figure 2&3]:**
- Atrophic pancreas with multiple calcific foci within the parenchyma consistent with chronic pancreatitis.
- Dilated and irregular morphology of the main pancreatic duct which communicated with the pseudocyst.
- Peripherally enhancing pseudocyst in the body of the pancreas which extended superiorly through the esophageal hiatus of the diaphragm into the thorax.
- Massive left thoracic pseudocyst with the collapse of the underlying left lungs and mediastinal shift towards the right.

The patient was managed conservatively with percutaneous intercostal drainage of the left thoracic collection and Injection of octreotide and pancreatic enzyme replacement. Patients will be posted for VATS(video-assisted thoracoscopic surgery) to prevent a recurrence.

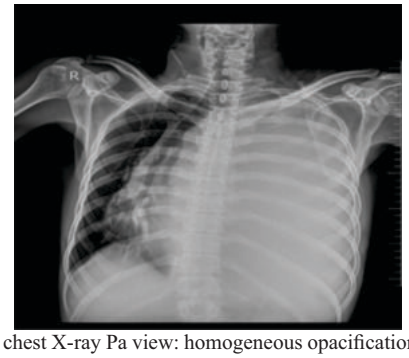

Figure 1: chest X-ray Pa view: homogeneous opacification of the left hemithorax with a mediastinal shift towards the right with blunting of CP angle consistent with left pleural effusion.

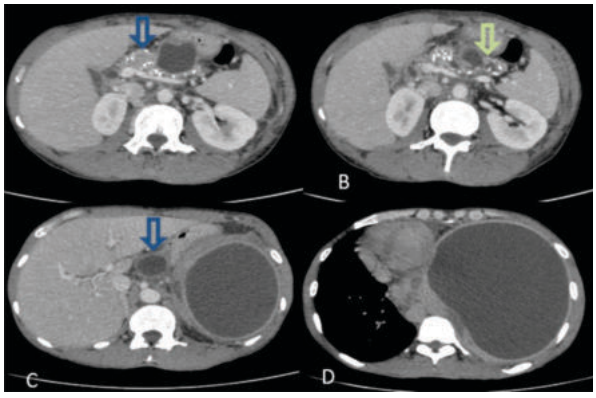

Figure 2: A: CECT abdomen Axial section shows: an atrophic pancreas with multiple parenchymal calcifications (blue arrow) consistent with chronic pancreatitis. A well-defined peripherally enhancing pseudocyst is seen along the body of the pancreas. B: CECT abdomen Axial section shows dilated main pancreatic duct (green Arrow) communicating with the pancreatic pseudocyst. C: CECT

abdomen Axial section shows: The pancreatic collection is seen to extend superiorly through the esophageal hiatus into the thoracic cavity (blue arrow). D: CECT Axial section at the lower mediastinal level shows a Thoracic pseudocyst involving the entire left hemithorax and with a mediastinal shift towards the right.

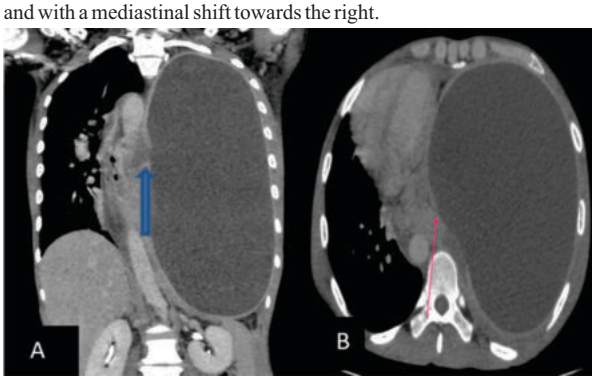

Figure 3: A: CECT Thorax coronal view shows homogeneous collection in the left hemi thorax with pancreatic-pleural fistulous tract (blue arrow) B: CECT Thorax axial view shows large thoracic pseudocyst with pancreatic-pleural fistulous tract (red arrow)

DISCUSSION:

Thoracic-pancreatic fistulas have been reported in less than 0.4% of all cases of pancreatitis.

Repeated attacks of pancreatitis lead to disruption of the pancreatic duct and spillage of the pancreatic secretions in the surrounding tissues leading to inflammation.

The presence of inflammation and fibrosis in the peripancreatic spaces creates pathways of lesser resistance to pleura and mediastinum by forming thoraco-pancreatic fistulas.

Thoraco-pancreatic fistulas are of 4 types:

1. Pancreatico-pleural
2. Mediastinal Pseudocyst
3. Pancreaticobronchial
4. Pancreaticopericardial.

In most cases, the pseudocyst extends in the mediastinum through the esophageal or aortic hiatus.

Patients usually present with chest pain, respiratory distress, cough, hemoptysis, and dysphagia. CT is an excellent tool for detection of the pancreatic abnormalities and for determining the communication between the mediastinal structures and the pancreas.MRI helps delineate the pancreatic-pleural fistulas in cases where CT is inconclusive and gives additional information on the ductal morphology's is mainly used for diagnosis of the pancreatic pseudocyst and diagnostic procedures. There are various methods to treat thoracic pancreatic pseudocysts. Conservative therapy with somatostatin analogs, total parenteral nutrition, and pancreatic enzyme replacement can be attempted as initial treatment. Large or symptomatic pseudocysts require invasive therapies like internal or external drainage. Drainage procedures can be performed percutaneously under CT or ultrasound guidance alternatively, they may be performed endoscopically via the gastrointestinal tract wall [5].

CONCLUSION:

Thoracic extension of a pancreatic pseudocyst is a rare but potentially catastrophic complication of pancreatitis. Early Diagnosis and timely management of this complication require a multidisciplinary approach. Pleural communication should be considered in cases of massive pleural effusion in patients with a history of pancreatitis.

In our case, we have illustrated that mediastinal pseudocysts should be considered as a differential diagnosis in the evaluation of mediastinal masses in a patient with a history of pancreatitis. Radiological interventions are a useful adjunct to surgical management.

Patient Consent:
Consent not required as the identity of the patient not revealed.

Conflicts Of Interest: Nil

Financial Support: Nil

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