

Mediastinal pancreatic pseudocyst

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Section: Chest imaging

Area of Interest: Thorax Abdomen

Procedure: Education

Imaging Technique: CT

Special Focus: Pathology Case Type: Clinical Cases

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Patient: 50 years, male

Clinical History:

A 50-year-old male patient with a known history of recent pancreatitis presented with increasing thoracic discomfort over a time course of 4-5 weeks. No other relevant past medical history was of note. He was then initially evaluated with a chest CT examination followed by a abdominal CT examination which demonstrated the following.

Imaging Findings:

Initial CT chest examination (Fig 1a, b and c) shows a cluster of multiple well-defined thick walled inter-communicating low attenuating collections within the posterior mediastinum many of which appear to contain intervening incomplete septations. These surround and partially compress the oesophagus and extend along the length of the posterior mediastinum with the superior-most aspect extending to the level of the T4 vertebra. There is a loculated thick-walled left pleural effusion with adjacent left basal atelectasis.

Concurrently performed CT abdomen (Fig 2a, b and c) demonstrates a large amount of ascites as well as findings compatible with the known pancreatitis. Similar appearing communicating collections (pseudocysts) also noted in the central peri-pancreatic region. The patient's pancreatitis was treated with antibiotics and supportive therapy with good clinical improvement. Repeat CT follow-up CT chest examination (Fig 3) shows near-complete resolution of both the complex mediastinal collections as well as the left pleural effusion.

Discussion:

In view of overall CT findings, background clinical context and considering resolution of changes with treatment of pancreatitis, the diagnosis of a resolved mediastinal pancreatic pseudocyst was made.

Background: While pancreatic pseudocysts are a common complication of pancreatitis, only rarely do they extend into the mediastinum [1-2]. A pseudocyst represents an encapsulated collection of pancreatic secretions, blood, and necrotic material. A mediastinal pseudocyst almost always initially occurs in the lower part of the posterior mediastinum, having gained access to the chest via the oesophageal or aortic hiatus. It may extend superiorly [4].

Clinical perspective:

The clinical presentation can be variable and dependent on the location and size, patients may present with combination of symptoms such a dyspnoea, chest pain, palpitations, or dysphagia. Additional uncommon symptoms can include haemoptysis, acute respiratory compromise or cardiogenic shock [3].

Imaging perspective:

The presence of a cystic posterior mediastinal mass that develops over a short time (over four weeks under the

current Atlanta classification) in a patient with evidence of pancreatitis is likely to be a pseudocyst. A CT examination would allow best appreciation of anatomy and often shows one or more cystic, low-attenuation masses in the posterior mediastinum or adjacent thoracic cavity associated with compression or displacement of the oesophagus or splaying of the diaphragmatic crura. Cyst content can be iso-attenuating or hyper-attenuating relative to water, dependent on the presence of factors such as haemorrhage and / or infection [4]. They almost always tend to be located in the lower part of the posterior mediastinum [5]. An abdominal component is common but is not invariably present. Therefore concurrent abdominal imaging would be of value in evaluation of such cases. In unclear cases an aspiration could be performed although this was not performed in our case due to initial clinical improvement with antibiotic and supportive therapy.

Outcome:

Management options can be variable and can range from watchful waiting for spontaneous regression to medical therapy to drainage (internally or externally with endoscopic, percutaneous, or open surgical approach techniques) [6]. Spontaneous regression of mediastinal pancreatic pseudocysts is rare but has been occasionally reported [7]. This was also demonstrated in this case.

Teaching points: This case highlights the typical CT imaging features of a mediastinal pancreatic pseudocyst and shows a situation where resolution occurred with a conservative non-interventional approach.

Differential Diagnosis List: Mediastinal pancreatic pseudocyst, Necrotic mediastinal lymphadenopathy, Infected bronchogenic cyst, Infected oesophageal duplicated cyst

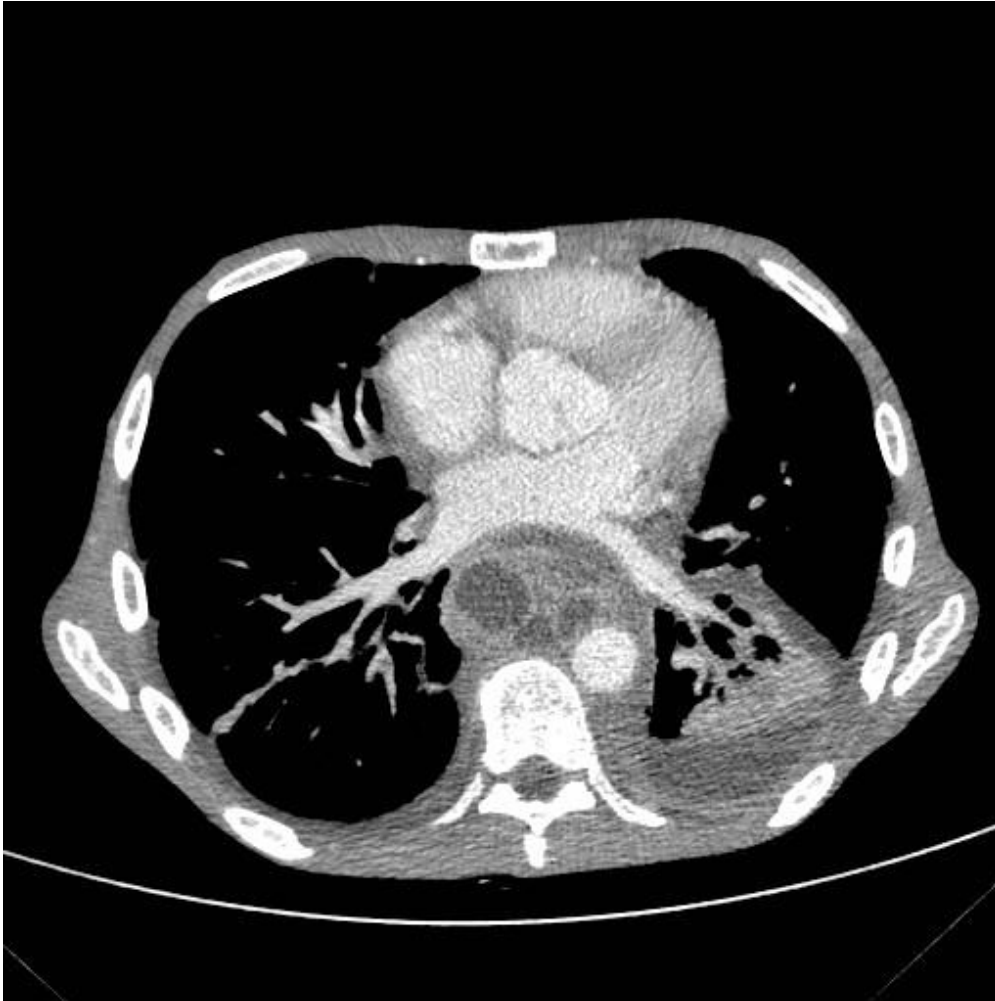
Final Diagnosis: Mediastinal pancreatic pseudocyst

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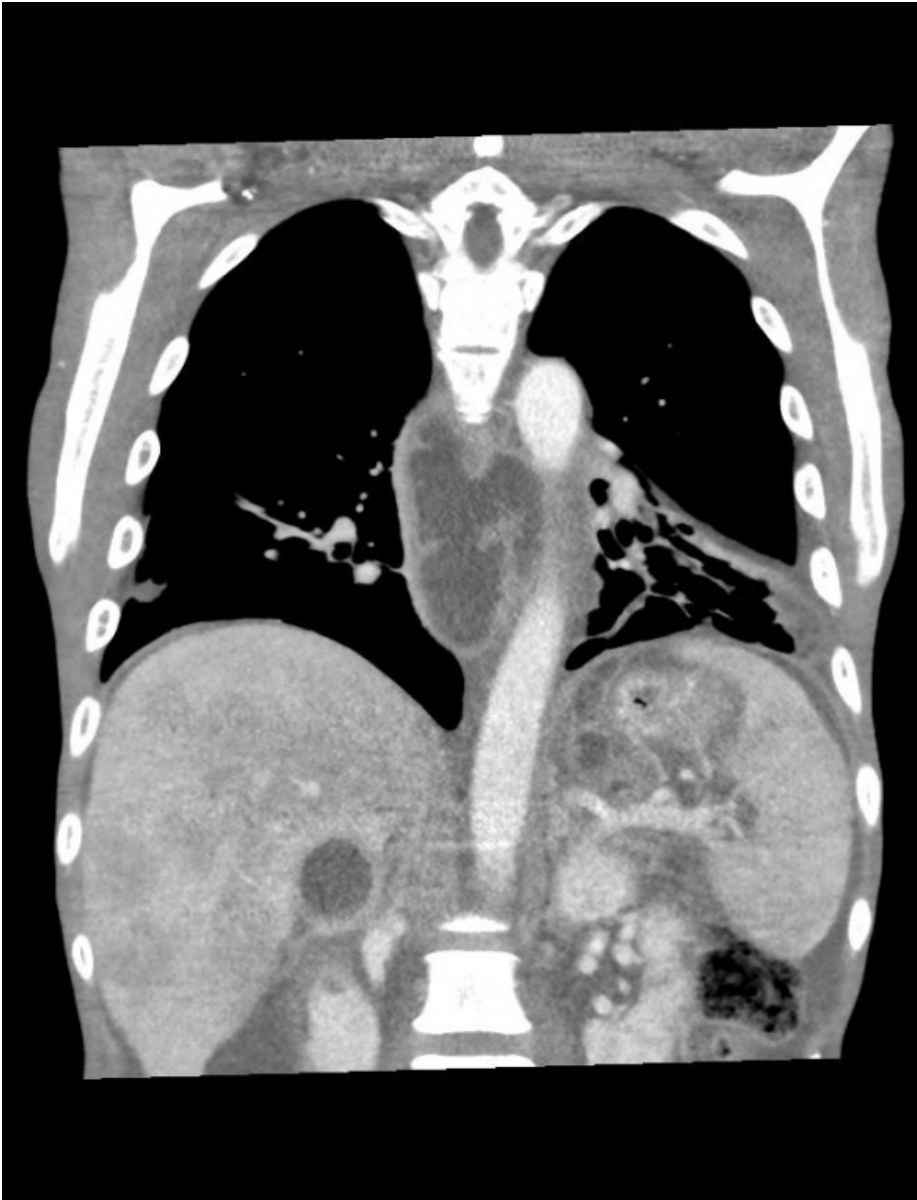
Figure 1

a



Description: Selected axial CT image shows multiple well-defined thick walled inter-communicating low attenuating collections within the posterior mediastinum surrounding and partially compressing the oesophagus. A complex thick walled left posterior basal effusion also seen. **Origin:** SMAHS-Perth-AU

b



Description: Selected coronal CT image further demonstrates the anatomical relationships of the mediastinal collections at well as its cranio-caudal extent. **Origin:** SMAHS-Perth-AU

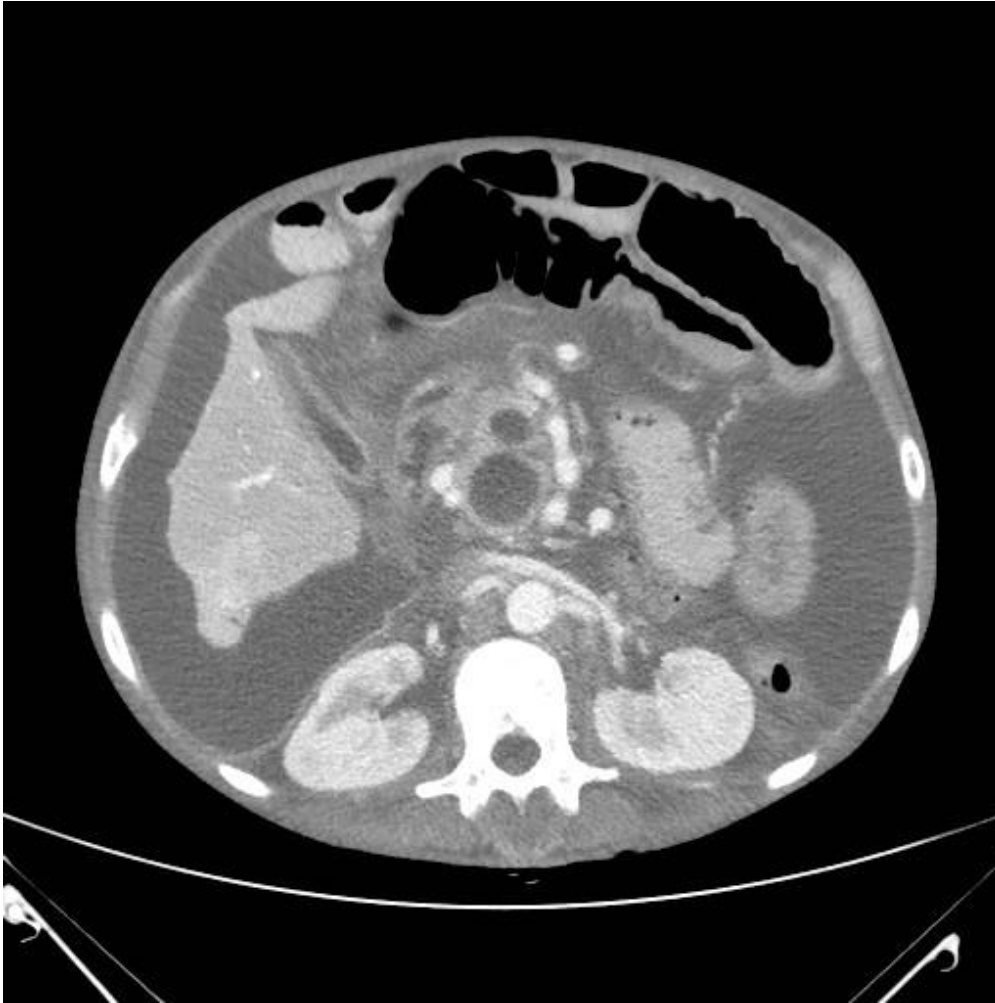
c



Description: Selected sagittal CT image further demonstrates anatomical relationships of the mediastinal collections at well as its cranio-caudal extent. **Origin:** SMAHS-Perth-AU

Figure 2

a



Description: Axial CT abdominal image showing largely necrotic pancreatic gland with two peripancreatic pseudocysts and a large volume of ascites. **Origin:** SMAHS-Perth-AU

b



Description: Coronal CT abdominal image showing largely necrotic pancreatic gland with two peri-pancreatic pseudocysts and a large volume of ascites. **Origin:** SMAHS-Perth-AU

c



Description: Coronal CT abdominal image showing largely necrotic pancreatic gland with two peri-pancreatic pseudocysts and a large volume of ascites. **Origin:** SMAHS-Perth-AU

Figure 3

a



Description: Follow up CT examination 8 weeks later demonstrates near-complete resolution of the mediastinal cystic lesions as well as the left basal pleural effusion. **Origin:** SMAHS-Perth-AU