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## Pleuro Pericardial Cyst: An Incidental Finding

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### Abstract

Pleuropericardial cyst is a rare benign mediastinal lesion, with an incidence rate of 1 per 100,000. They are usually identified during the third or fourth decades of life and are equally common in males and females. Pleuropericardial cysts are congenital mesothelial cysts, which are the result of the abnormalities in the formation of the coelomic cavities. The clinical presentation is variable and can range from asymptomatic patients in whom the diagnosis is incidental to those cases with complaints such as pain or heaviness in chest, difficulty in breathing or cough. We report a case of a 43 year-old male patient, presented with exertional dyspnoea and pain in his right anterior chest for 4 months. Clinical examination failed to show any significant findings. The posteroanterior chest x-ray showed a rounded homogenous shadow in right cardiophrenic angle. He was further evaluated by chest CT, which showed a cystic mass measuring 8 x 6 cm in its maximum diameter. Due to the variable nature of patient's complaints and grave complications associated with pleuropericardial cyst, a detailed work-up was necessary to reach a diagnosis.

**Keywords:** Benign mediastinal lesion, Cystic Mass, Pleuropericardial cyst, Right Cardiophrenic angle.

### 1. Introduction

Pleuropericardial cyst is a rare benign mediastinal lesion, with an incidence rate of 1 per 100,000. These account for 5%-10% of all mediastinal lesions. They are usually identified in the third or fourth decade of life and are equally common in males and females [1]. The most frequent site is the right cardiophrenic angle (70%), followed by the left cardiophrenic angle (10%-40%), other unusual sites have also been reported, they include, the vascular hila, the superior mediastinum, posterior mediastinum or the left heart border [2]. The clinical presentation is variable and can range from asymptomatic patients in whom the diagnosis is incidental to those cases with vague complaints such as pain or heaviness in chest, difficulty in breathing or cough [3]. Clinically and radiologically they resemble other mediastinal tumours. Chest Computed Tomography and Echocardiography are the most useful investigations which help to reach a diagnosis.

### Case Report

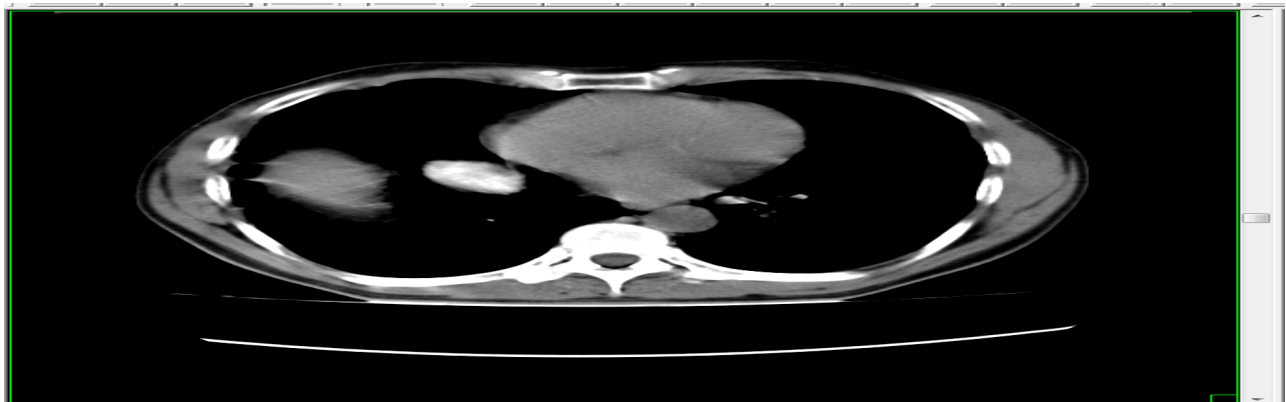
A 43 year old male, smoker presented to the out-patient department with exertional dyspnoea and pain in his right anterior chest for 4 months. He had no previous history of cardiac disease. Clinical examination failed to show any significant findings. As a preliminary investigation, posteroanterior chest x-ray was done which showed a rounded homogenous shadow in right cardiophrenic angle (Figure-1&2). Routine blood investigations including complete blood picture, Renal function tests, Serum electrolytes, and liver function tests were all within normal range. For further evaluation, chest Computed Tomography with IV contrast was done which revealed cystic mass measuring 8 x 6 cm in its maximum diameter (Figure 3&4). There was no evidence of either hilar or mediastinal lymphadenopathy and no mass or consolidation was seen in both lungs. An echocardiogram was also done which noted normal size and function of all heart chambers with ejection fraction of 64%. As the patient has no associated complications was advised to follow up regularly.



**Fig 1:** Posteroanterior chest X-Ray view showing pleuropericardial cyst in right cardiophrenic angle



**Fig 2:** Right lateral chest x-ray view showing pleuropericardial cyst.



**Fig 3:** Chest C.T (Transverse Section) Mediastinal Window revealed cystic mass suggestive of pleuropericardial cyst measuring 8 x 6 cm in its maximum diameter.



**Fig 4:** Chest C.T (Coronal Section) revealed cystic lesion suggestive of pleuropericardial cyst in Right cardiophrenic angle.

### Discussion

Pleuropericardial cysts are benign mesothelial cysts that arise as a result of persistence of one of the mesenchymal lacunae that normally fuse to form the pericardial sac [4]. They are usually identified during the third or fourth decades of life and are equally common in males and females. In majority of cases the cysts are clinically silent at presentation (75%) where they are discovered by chance during cardio-pulmonary work-up, or less commonly, present with pain or heaviness in chest, dyspnea & cough. Our patient was a 43 year old male so he belongs to the typical age group of presentation however he

presented with exertional dyspnoea and pain in his right anterior chest which have been reported previously in literature as uncommon complaints.

A pleuropericardial cyst when not timely diagnosed can cause grave complications like, cardiac tamponade, atrial fibrillation, right main stem bronchus obstruction, pulmonary artery stenosis, ventricular outflow tract obstruction and sepsis all of which can prove to be fatal [5]. Our patient was fortunate that the pericardial cyst was discovered before it would have resulted in any of the complications. Although pericardial cysts have been regularly discovered through chest X-ray and

echocardiogram, yet chest Computed Tomography with IV contrast remains the investigation of choice for diagnosis <sup>[6]</sup>.

Surgical treatment is reserved for the following situations: presence of symptoms, large cysts, atypical sites, or near large vessels, and include Cyst puncture, Video assisted thoracoscopic surgery (VATS), Thoracotomy. In the case described above, the patient is asymptomatic from the cardiopulmonary point of view, and the pleuropericardial cyst was found incidentally in a routine chest x-ray. Therefore, advised to follow up regularly.

### **Conclusion**

Pleuropericardial cyst occurs rarely, is clinically silent in majority of cases but can cause life threatening cardiopulmonary complications. Therefore it is prudent to keep such anomalies in mind when evaluating patients in third and fourth decades of life either during routine health checkup or when such patients present with chest complaints. A high index of suspicion and a subsequent thorough work-up is necessary to reach a diagnosis.

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