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# Pleuro Pericardial Cyst

Amina Adil<sup>1</sup>, Shahrukh Hashmani<sup>2</sup> and Ghufuran Ullah Khan<sup>3</sup>

## ABSTRACT

A 68-year-old male, presented with exertional dyspnoea and chest pain in his anterior chest wall for 3 months. He had no previous history of cardiac disease. Clinical examination failed to show anything significant. Chest X-ray showed a mass superimposed over the upper cardiac silhouette. He was further evaluated by chest CT, which showed a cystic mass in the anterior mediastinum measuring 9 x 7 cm in its maximum diameter. On surgical excision and histopathological examination, findings were consistent with benign pleuropericardial cyst, confirming the earlier diagnosis.

**Key words:** Exertional dyspnoea. Chest pain. Anterior mediastinum. Mass. Pleuropericardial cyst.

## INTRODUCTION

Pericardial cysts, also called pleuropericardial cysts and mesothelial cysts are rare benign mediastinal abnormalities that occur in 1 person per 100,000.<sup>1-4</sup> They are the second most common type of primary mediastinal cysts after bronchial cysts and constitute about 7% of all mediastinal tumours.<sup>4,5</sup> Pericardial cysts are mostly congenital but can also be acquired after cardiothoracic surgery.<sup>1,2,4</sup> These cysts frequently occur in the right cardiophrenic angle and their diagnosis is usually suspected after an abnormal chest X-ray is obtained. The size of these cysts varies from 2 to 3 cm to as large as 28 cm.<sup>1</sup> Although most pericardial cysts are asymptomatic, patients may present with chest pain or dyspnoea. In addition, life-threatening complications such as pericardial tamponade have been reported. This case describes the rare occurrence of a pericardial cyst in the mediastinum.

## CASE REPORT

A 68-year-old diabetic and hypertensive male presented with complaints of dyspnoea, NYHA class I, associated with chest pain in the left upper thoracic wall for the past 3 months. The dyspnoea was believed to be due to airway compression because it was associated with stridor related to certain posture. He was examined in the outpatient clinic of our department. His previous medical history was unremarkable. A daily brisk walk of an hour and a half was part of his routine. Physical examination revealed a healthy man with normal first and second heart sounds. Systemic examination was normal.

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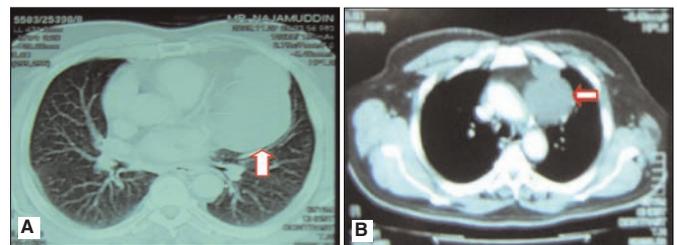
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As a preliminary investigation, he got a chest X-ray that revealed an extracardiac mass projecting over the left heart border causing a bulge in the upper left cardiac silhouette. No definite signs of airway compression were seen. All routine laboratory tests were found to be normal.

The CT images in Figure 1, showed a large well-defined cystic mass (arrows) in the anterior mediastinum. Anteriorly, the mass is abutting against the anterior chest wall, medially the mass is abutting against the arch of aorta, pulmonary trunk and left pulmonary artery and posteriorly it overlies the pericardium. The mass measured 9 x 7 cm in its maximum diameter and extended for a distance of 8 cm craniocaudally.

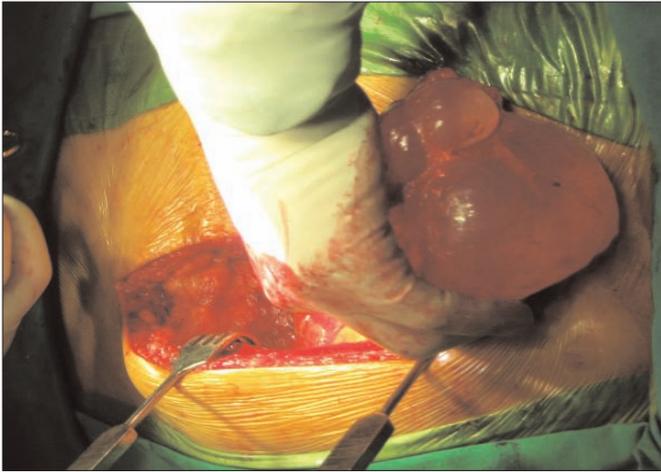


**Figure 1:** Computerized tomographic scans of the chest.

A. Lung parenchymal gating. B. Soft tissue gating (arrows showing cyst).

On the basis of CT the cyst appeared to be more on the left side and was in an anterior location pushing the left lung downwards. It was extending all the way to the apical pleural cavity and laterally it was going as far as the lung hilum. During the operation access to the cyst was gained only after applying LIMA retractor, which elevated the left hemisternum and brought the left side of the pericardium into view. The cyst was easily excised. It had no attachments to the surrounding structures. The exposure of the apical mass was made easy by the Median sternotomy incision and retractor (Figure 2).

The postoperation recovery of the patient was unremarkable. He was discharged on the 4th postoperative day with advice to repeat a chest X-ray in a month, which came out to be normal.



**Figure 2:** Cyst being removed by median thoracotomy incision.

## DISCUSSION

A variety of cysts occur in the mediastinum namely bronchogenic, duplication, neurenteric, or pleuro-pericardial cysts most of which are congenital.<sup>2,4</sup> Pericardial cysts are more common in the 4th and 5th decades of life, typically located at the right cardiophrenic angle (51-70%), or left cardiophrenic angle (28-38%).<sup>1-7</sup> Most of the cysts are discovered as an incidental radiographic finding.<sup>1,2,6</sup> A pleuro-pericardial cyst like the one found in this case is extremely rare (8-11%).<sup>2</sup> They contain a clear fluid.<sup>6</sup> They are usually unilocular, well-margined or spherical cysts that may be attached to the pericardium or to the diaphragm directly or by a pedicle.<sup>4-6</sup> Histologically these cysts are lined with a single layer of mesothelial cells, with the remainder of the wall composed of connective tissue with collagen and elastic fibers.<sup>5,6,8</sup> Pericardial cysts rarely cause symptoms as compared to other mediastinal cysts.<sup>3-6,8</sup> Some patients, may present with retrosternal chest pain, dyspnoea and persistent cough.<sup>1-5,8</sup> When symptoms do occur, they are due to the pressure of the cysts on adjacent organs.<sup>2</sup> The most useful imaging studies for diagnosis are echocardiography, CT, and MRI.<sup>2,3,5,6,8</sup> Echocardiography is useful in showing the exact location of a pericardial cyst and in differentiating a cyst from other entities, such as a fat pad, ventricular aneurysm or aortic aneurysm.<sup>5</sup> Pericardial cysts are usually asymptomatic, although in few cases multiple complications have been reported which include cyst rupture, cardiac tamponade, mitral valve prolapse, hoarseness atrial fibrillation right

ventricular outflow tract obstruction, spontaneous internal haemorrhage, pulmonary stenosis related to extrinsic compression, and even sudden death.<sup>1-9</sup> There are no reports of malignant transformation. Surgery has been advocated, only in symptomatic patients.<sup>2</sup> Several modalities of treatment have been described in the literature; complete resection by means of thoracotomy, median sternotomy, video assisted thoracoscopic surgery and percutaneous aspiration under ultrasound guidance.<sup>1-4,8,9</sup> Aspiration of the cyst is usually safe but carries the risk of anaphylaxis and dissemination in the rare case of this being a hydatid cyst.<sup>1</sup> Asymptomatic cases are managed conservatively with a close follow-up.<sup>2,5</sup> Spontaneous resolution of a pericardial cyst has also been reported in a few cases managed conservatively, the probable mechanism being cyst rupture.<sup>2</sup> The prognosis after complete excision is excellent and morbidity and mortality rates are low. A pericardial cyst should always be suspected when a cystic lesion is detected in the mediastinum.<sup>5</sup>

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