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Giant pericardial cyst- A rare presentation

Medical Science

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ABSTRACT

Pericardial cysts are rare congenital abnormalities with a reported incidence rate of 1/100,000 child birth. The most common locations of these cysts are middle mediastinum and at the right cardiophrenic angle. Pericardial cysts are usually asymptomatic unless a complication or rapid growth of cyst occurs. Diagnosis is generally made incidentally or using combined radiological and echocardiographic examination. Only with X-ray Chest, can be very easily confused with hydatid cyst of lung. Various forms of treatment can be done from simply observation to needle aspiration and surgical excision. Recurrence of the disease is common after needle aspiration and incomplete excision. Herein, we present a case of giant pericardial cyst affecting left cardiophrenic angle in a 50 year-old man presenting with an atypical left chest pain, exertional dyspnoeaand chronic cough. Finally, the patient was treated successfully by surgical excision.

INTRODUCTION

The cysts of the heart and pericardium are rare[1]. They are mainly congenital, with an estimated incidence of 1:100,000, accounting for about 7.6% of all mediastinal masses described in the literature[8,9]. Pericardial cysts usually are less than 5 cm in diameter[3]. Pericardial cysts with a diameter > 10 cm are referred to as "giant pericardial cysts"[7].In our case the size was more than 15cm. In most cases they are asymptomatic and are usually diagnosed incidentally by chest radiograph. Some cases present with symptoms of dyspnoea and chest pain. In addition, complications such as cardiac tamponade can occur, justifying the need for diagnosis. Herein, we report a patient complaining of non-productive chronic cough and atypical left sided chest pain for a long duration and was diagnosed giant pericardial cyst and consequently treated successfully by surgical excision.

CASE REPORT

A 50 year-old diabetic and hypertensive male presented with complaints of exertional dyspnoea, associated with left sided atypical chest pain for the past 8 months. 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. Cardiovascular examination revealed a regular heart rate and rhythm with no murmur. Lung examination detected no significant abnormalities. All other findings were unremarkable as follows: white blood cell count, 5.1 × 103 /μL; red blood cell count, 4.57 × 106 /μL; hemoglobin level, 13.4 g/dL; platelet count, 13.9 × 104 /μL; and C-reactive protein level, 0.03 mg/dL. IgG serology for hydatid was negative. Sputum for AFB was negative too. His chest X-ray showed a large well defined cystic lesion along the left cardiac silhouette (**fig 1**). Computed tomography of the chest revealed a 15 × 12 cm pericardial cyst of the anterolateral aspect of the left cardiac border without septation or calcification (**fig 2**). The inner constitution was uniform, the mass was not enhanced with contrast, and its CT number was approximately 15 - 20 Hounsfield units (HU). There was no continuity between the coronary arteries and the pericardial cyst. The boundary of the pericardium and pericardial cyst was ambiguous at the level of the left atrium and the left ventricle, and it was considered to be the binding site of the pericardial cyst and pericardium. CT coronary angiography showed normal coronaries and a large simple cyst occupying left hemi thorax along left cardiac border measuring 143 × 120 × 94 mm (SI×AP×TR). PFT was normal. Echocardiography showed good LV systolic function with ejection fraction of 65%.

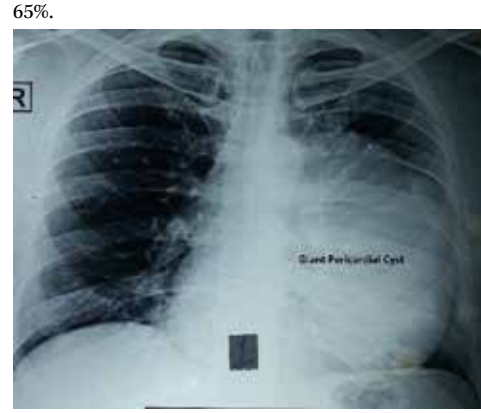

Fig.1 X-ray showing a large pericardial cyst.

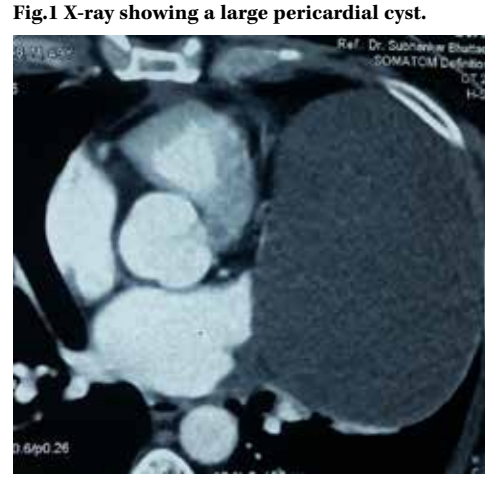

Fig.2 CT showing a giant pericardial cyst.

The patient was subjected to general anaesthesia with epidural analgesia with double lumen tube endotracheal intubation. Left standard anterolateral thoracotomy through 6th intercostal space was done and the pleura lying on the cystic mass in the cardiophrenic triangle was dissected from the pericardium in the anterior, posterior and inferior aspects of the cyst. A tense cystic mass was found abutting the left ventricle and adjoining pleura of left lung (**fig 3**). The entire left lung was displaced inferiorly due to pressure effect. Aspiration of the cyst yielded clear straw colour fluid without any debris. Rent was made through the point of aspiration and the cyst was decompressed. The vascular connections of the cyst with pericardium were ligated and the cyst was resected completely from the pericardium. After insertion of a chest tube into the pleural cavity the chest was closed. Pathologic examinations revealed a single layer of mesothelial cells and fluid-filled cyst compatible with pericardial cyst. Post op period was uneventful and he was discharged on 5th post op period.

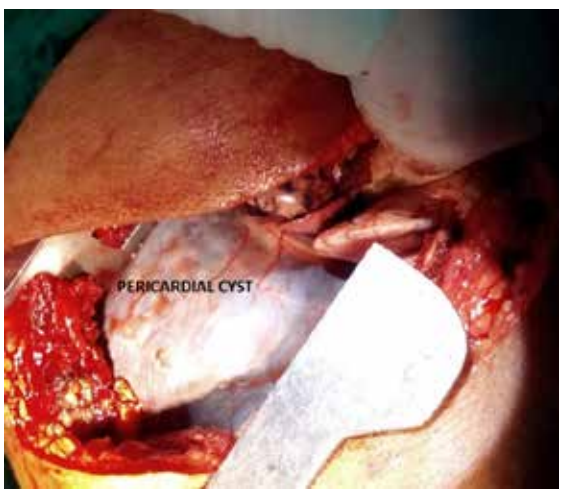

Fig.3: The intra op picture of the pericardial cyst

Discussion

Pericardial cysts are often discovered as incidental findings on chest X-ray or CT. These cysts are caused by a defect in the development of the coelomic cavity and is consistently adhered to the pericardial leaflet, although communication with the pericardial cavity may occur .They are located typically at the cardiophrenic angles (at right and left sides in 51% - 70% and 10% - 40% of patients[6], respectively) and rarely in other mediastinal locations not adjacent to the diaphragm (the hilum and the superior mediastinum at the level of the aortic arch[2, 7]). In the present case, the cyst was found on the left cardiophrenic angle, and the binding site of the pericardial cyst and the pericardium was at the demarcation level of the left atrium and the left ventricle. Pericardial cysts usually are less than 5 cm in diameter[3]. Pericardial cysts with a diameter > 10 cm are referred to as "giant pericardial cysts"[7].

A characteristic CT scan finding of a typical pericardial cyst is the presence of a homogeneous mass with the similar attenuation as water that is not enhanced with contrast. MRI examination also shows the cyst contains serous fluid that produces low signal intensity on T1- weighted MRI and high signal intensity on T2-weighted MRI. In the present case, the CT number of the mass was higher than that of water (15 - 20 HU).

Pericardial cysts usually follow a benign course with very slow increase in size. Most are asymptomatic unless some complication occurs or the cyst grows to a very large size as in our case. Pericardial cysts occasionally cause complications including erosion into adjacent structures such as the right ventricular wall[9] or the superior vena cava[10], rupture into pericardial or pleural cavity, causing cardiac tamponade[8], atrial fibrillation, leading to obstruction of the right main stem bronchus, and even sudden death. We conclude that our patient may have been at risk of pericardial cyst rupture when he felt chest pain. Therefore, careful observation is necessary whenever a patient with pericardial cyst is being followed up.

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[1, 2]. Aspiration of the cyst is usually safe but carries the risk of anaphylaxis and dissemination and in rare case of this being a hydatid cyst, also recurrence is a problem. Asymptomatic cases are managed conservatively with a close follow up[1,4]. Spontaneous resolution of a pericardial cyst has also been reported in a few cases managed conservatively, the probable mechanism being cyst rupture[1].

CONCLUSION

Pericardial cysts are usually asymptomatic. However, resection is indicated when they are enlarged enough to give symptoms of cardiac or pleural irritation or cardiac tamponade .The prognosis after complete excision is excellent with very low morbidity and mortality. A pericardial cyst should always be suspected when a cystic lesion is detected in the mediastinum and should always be differentiated from hydatid cyst if found on X-ray chest.

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