

PERICARDIAL CYST: A RARE CONGENITAL ANOMALY

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ABSTRACT

Pericardial cyst is an uncommon congenital abnormality that can occur in the middle mediastinum. 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. These cysts can lead to cardio-pulmonary complications such right main stem bronchus obstruction, ventricular outflow obstruction, pulmonary artery stenosis, arrhythmias or cardiac tamponade which can prove fatal. Due to the variable nature of patients' complaints and grave complications associated with pericardial cyst, a detailed work-up is necessary to reach a diagnosis. We present this case in a middle-aged man who presented with feeling of heaviness in chest. He underwent thorough work-up in order to detect a pericardial cyst.

KEYWORDS: Pericardial cyst, Congenital abnormality.

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INTRODUCTION

Pericardial cysts are uncommon congenital anomalies that occur in the middle mediastinum. They constitute only 6% of all mediastinal masses^{1,2} and upto 11% of all mediastinal cysts.³ 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.^{4,5}

We present a case in a middle-aged man who presented with feeling of heaviness in chest. He underwent thorough work-up in order to reach a diagnosis.

CASE REPORT

A 44 years old male presented with complaint of heaviness in chest of 20 days duration, which was felt in central chest region, with no radiation, aggravating or relieving factors and not associated with shortness of breath or any difficulty in breathing either at rest, exertion or

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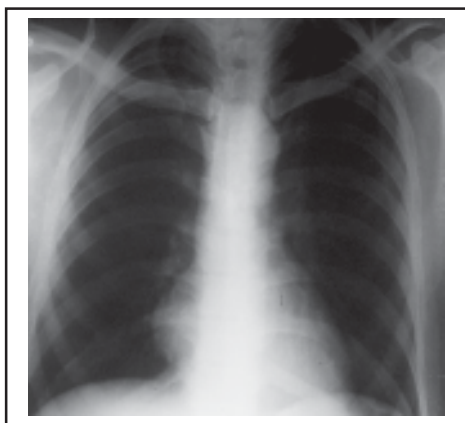


Figure-1: -----

on lying down on bed. There was also a complaint of chest burns before meals but no cough, hemoptysis, palpitations, flank pain or any change in urinary habits. There was also no history of any weight loss and his sleep pattern had also not changed. He had been taking niswar for the last 22 years and was a smoker for two years before he quit smoking 10 years ago. He had no past medical issues nor had he been taking any long-term medications in the past. His all immediate family members were alive and healthy.

On examination his vitals were within normal limits. His chest was of normal shape with symmetrical chest movements and vesicular breath sounds bilaterally. On precordial exam, the apex beat was difficult to localize and the heart sounds were soft on auscultation. The abdomen was of normal shape with no visceromegaly or flank masses.

On his investigation he was found to have a hemoglobin of 10.6 mg/dl with a low mean corpuscular volume, white blood cell count of 4600/mm³, platelet count of 207000/mm³, serum urea at 26mg/dl, and serum creatinine at 0.9mg/dl and all electrolytes within normal range. With the suspicion of hydatid pericardial cyst in mind, Echinococcus antibody test was also sent but it came out negative (titre < 1:16).

On chest X-ray a well defined homogenous soft tissue density shadow was seen in right para-cardiac region which could not be differentiated from right heart border (Fig-1). For further evaluation, C.T. scan chest with IV

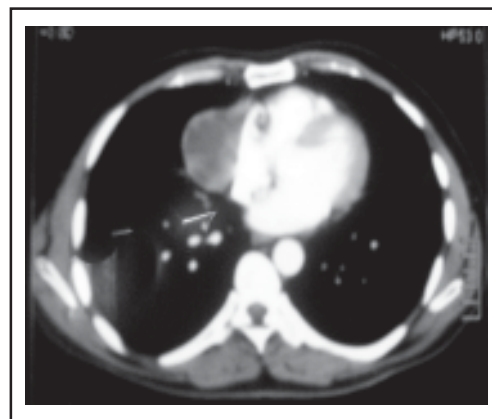


Figure-2: -----

contrast was done which revealed a cystic mass along side the right heart border which was projecting laterally, abutting the medial margins of the right middle lobe and measuring 6.9cm x 4.8cm. There was no evidence of either hilar or mediastinal lymphadenopathy and no mass or consolidation was seen in both lungs (Fig-2).

An echocardiogram was also done which noted normal size and function of all heart chambers with 76% ejection fraction and an ultrasound abdomen was later ordered which was within normal limits. The patient was counseled to get the cyst excised at the earliest but the patient refused surgical treatment due to personal reasons.

DISCUSSION

During embryonic development, the pericardial sac is formed by organization of mesenchymal tissue around the developing heart. Defects in the proper organization of this mesenchyme is believed to result in formation of pericardial cyst.^{2,5}

Its rarity is indicated by the fact that its incidence is a mere one per hundred thousand population (1/100,000) and that it constitutes only about one-tenth of the total mediastinal cyst that are routinely detected.^{3,5} Patients with pericardial cysts usually belong to third or fourth decade of life and are divided equally among both sexes.⁶

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 &/or cough.³⁻⁵

Our patient was a 44 year old male so he belongs to the typical age group of presentation however he presented with complain of feeling of heaviness in the chest which has been reported previously in literature as uncommon complaint.

A pericardial cyst when not timely diagnosed or left untreated, can cause serious complications. It has been reported in literature that such cysts can cause right main stem bronchus obstruction, pulmonary artery stenosis, ventricular outflow tract obstruction, sepsis, atrial fibrillation and cardiac tamponade, all of which can prove to be fatal.^{7,8} 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 C.T. scan chest with contrast remain the investigation of choice for diagnosis^{2,5} where the cysts appear as non-enhanced, thin-walled, crisply defined and homogenous structures near the pericardium and are mostly found at the right cardio-phrenic angle.^{4,7}

The chest X-ray of our patient revealed findings (homogenous density at right heart border) that is similar to that seen in majority of cases. The echocardiogram report indicated normal heart function and it was only through C.T. chest with contrast that one was able to appreciate the size, septations and further structural details that lead to the diagnosis of pericardial cyst.

Adult polycystic kidney disease (APKD) has been associated with formation of cysts in extra-renal tissues all over the body. A case of APKD reported by A.K. Hooda was found to have pericardial cyst on work-up.⁹

We evaluated the patient for APKD but as his abdominal examination did not reveal any flank masses or visceromegaly, his renal function tests were within normal limits and the ultrasound abdomen failed to detect any abnormality in the kidneys or any other organ, APKD was successfully excluded in our patient.

Hydatid cyst disease was also suspected as it is very common in our part of the world and can present in a similar way when there is a rare cardiac involvement.¹⁰ An echinococcus antibody titre was sent which came out negative thus ruling out hydatid disease in this patient. Currently, a variety of techniques are available to excise pericardial cysts. VATS is the latest approach being utilized.¹⁴ Our patient did not opt for surgery so it was decided to clinically follow the case for any future complications.

CONCLUSION

Pericardial cyst occurs rarely, is clinically silent in majority of cases but can cause life threatening complications. Therefore it is prudent to keep such anomalies in mind when evaluating patients from third and fourth decade of life either during routine health check-up 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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