

# Giant Pericardial Cyst - Eroding Left Ventricle

Shah RK, Jaiswal RK, Pokharel DP

\*Department of cardiology, NAMS, Bir Hospital, Department of radiology, NAMS, Bir Hospital, Department of cardiothoracic Surgery, NAMS

**Corresponding:** Dr. Ram Kishor Shah

National Academy of Medical Sciences, Bir Hospital P.O.Box. 8011, Kathmandu, Nepal

Email: rkshah40@yahoo.com

## Abstract

Pericardial cyst is the result of an outpouching of the parietal pericardium that is lined by mesothelial cells. They represent 6% of mediastinal masses, and 33% of mediastinal cysts. Other cysts in the mediastinum are bronchogenic-34%, enteric-12%, thymic and others-21%. A 19 year old man admitted with exertional breathlessness and a typical chest pain. The result of physical examination was within normal limits. Resting 12-lead electrocardiography shows T inversion in lead I, AVL, V5 and V6. A posteroanterior chest radiograph revealed a cystic mass in the mediastinum. Transthoracic and transoesophageal echocardiography confirmed the presence of a large fluid filled cyst within the pericardial space. Contrast CT imaging revealed a giant pericardial cyst (10x10x12cm) in left cardiophrenic angle, later confirmed intraoperatively and by histopathology. Pericardial cysts occur at the rate of 1 person per 100,000. Seventy five percent of them have no associated symptoms, and are usually found incidentally during routine chest x-ray or echocardiography. Cardiac tamponade, obstruction of right main stem bronchus, and sudden death are the life threatening emergencies that have been reported. The management of pericardial cysts includes observation, percutaneous drain-age, and resection.

**Keywords :** pericardial cysts, left ventricle, echocardiogram, CT scan

## INTRODUCTION

Pericardial cysts is the result of an out pouching of the parietal pericardium that is lined by mesothelial cells. Most of the pericardial cysts are unilocular. They usually contain clear yellow fluid and do not communicate with the pericardial space. Pericardial cyst is an uncommon benign congenital anomaly which is located in the middle mediastinum. They represent 6% of mediastinal masses, and 33% of mediastinal cysts. Other cysts in the mediastinum are bronchogenic-34%, enteric-12%, thymic and others-21%. In the middle cysts. Pericardial and bronchogenic cysts share the second most common etiology after lymphomas. The presented case is a symptomatic pericardial cyst.



Figure 1: Chest X-ray PA View showing cystic mass in mediastinum

## CASE REPORT

A 19 year old man admitted with exertional breathlessness (New York Heart Association class II) and a typical chest pain. The result of physical examination was within normal limits. A chest radiograph revealed a cystic mass in the mediastinum (Figure 1, 2).

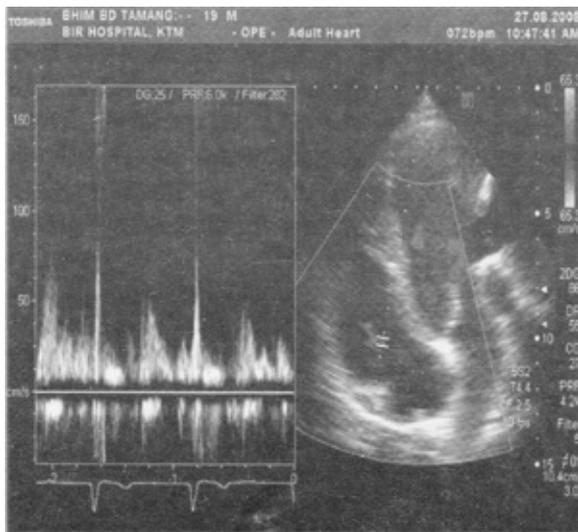
Resting 12 lead electrocardiography showed T inversion in lead I, AVL, V5 and V6.

Transthoracic and transoesophageal echocardiography confirmed the presence of a large fluid filled cyst within the pericardial space (Figure 3)



Figure 2: Chest X-ray Left Lateral View showing cystic mass in mediastinum

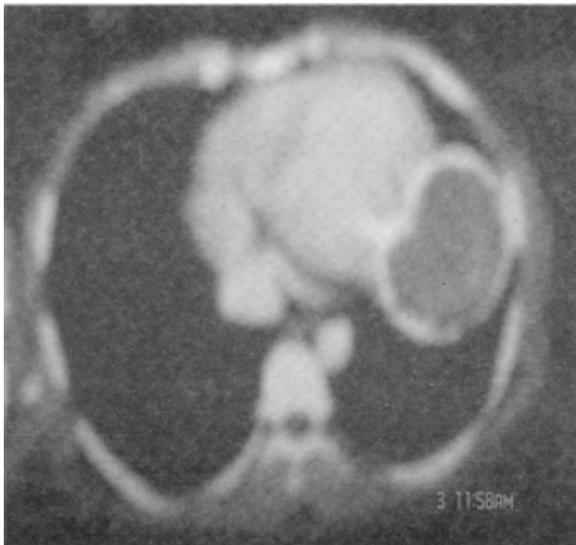
Ultrasonogram of Abdomen and pelvis was normal. Contrast CT imaging revealed a giant pericardial cyst (10x10x12cm) in left cardiophrenic angle and planned for surgery. (Figure)



**Figure 3: Transthoracic Echocardiogram Showing cyst arising from the pericardium**

In the operating room, under general anesthesia left thorax was opened. The cyst was readily visualized at the anterolateral aspect of the left pericardium measuring approximately (10x10 cm) eroding left ventricle. The connection between the cyst and the pericardial space was identified & cystectomy done.

The pathology report confirmed the diagnosis of a benign single layer of mesothelial cells-lined cyst (Figure 5). Accordingly the pre-operative diagnosis was confirmed.

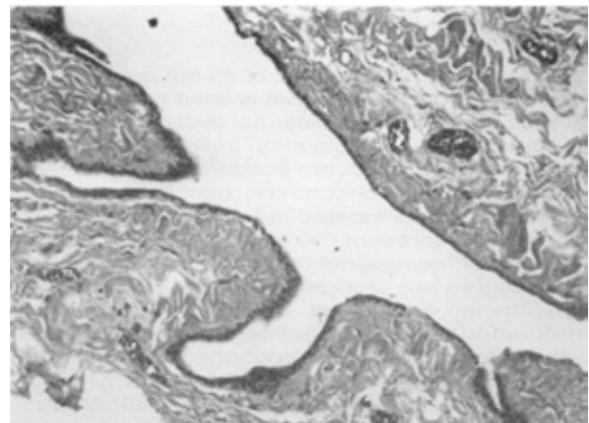


**Figure 4: CT Thorax Showing cyst arising from pericardium**

## DISCUSSION

Pericardial cysts occur at the rate of 1 person per 100,000. they are thought to result from failure of fusion of one of the mesenchymal lacunae that form the pericardial sac. Seventy

five percent of them have no associated symptoms, and are usually found incidentally during routine chest x-ray or echocardiography. There have been about twenty reported cases of pericardial cyst presenting before the age of eighteen. Seventy percent of them are located at the right cardiophrenic angle, 22% in the left, and the rest are in the posterior or anterior superior mediastinum. The size varies from 2 to 28cm. present, symptoms are usually due to compression of adjacent organs and include atypical chest pain, dyspnea, and persistent cough. Cardiac tamponade, obstruction right main stem bronchus, and sudden death are the life threatening emergencies that have been reported. Cardiac tamponade is usually due to intra-pericardial rupture of the cyst, although tamponade due to spontaneous hemorrhage into the cyst has also been reported. Other reported complications include right ventricular outflow obstruction, inflammation and infection, pulmonary stenosis, partial erosion into adjacent structures, atrial fibrillation, and congestive heart failure. Contrast CT scan has been the modality of choice to diagnose and to follow pericardial cysts. However, no studies have been done to ascertain the superiority of contrast CT over MRI and echocardiography for diagnosis or for follow-up. On CT scan pericardial cysts are thin-walled, sharply defined, oval homogeneous masses. The management of pericardial cysts includes observation, percutaneous drainage, and resection.



**Figure 5: Pericardial cyst: Benign single layer of mesothelial**

## cells-lined cyst

For high-risk patients, a non-operative strategy may be followed. The longest reported follow-up lasted twenty five years, and yielded a 2.5L cyst at the time of resection. Aspiration for resection of pericardial cysts include large malignant potential, and prevention of the life threatening emergencies. While the morbidity and mortality of pericardial cysts are unknown, surgery has been demonstrated as the only definitive cure. Since operative risks of minimally invasive techniques are extremely low, it would seem reasonable to offer resection for all pericardial cysts in otherwise healthy patients for whom the risk of surgery is low.

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