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A GIANT PLEUROPERICARDIAL CYST - AN INCIDENTAL FINDING

General Surgery

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ABSTRACT

Pleuropericardial cysts are unusual congenital presentations of mediastinal tumors which shares its origin with pericardial diverticulum .Caused by the failure of fusion of one of the mesenchymal lacunae that form the pericardial sac .These are unilocular , well marginated or spherical structures that are attached to the pericardium or diaphragm by a pedicle.

Histologically these cysts are lined by mesothelial cells , the wall composed of collagen and elastic fibres with chronic inflammation.

We present a case of a 42 year old man with chronic cough. A routine chest x-Ray showed a near complete collapse of his left lung due to a large mass .

KEYWORDS

mediastinal cyst, pleuropericardial cyst, thoracotomy

1.INTRODUCTION

Pleuropericardial cysts account for 5-10% of all mediastinal tumours and its incidence is 1:100000 persons worldwide . It was first reported by T.Hart of Park Street in 1837 at School of Medicine , Belgium and the excision of the tumor was first done in New York in 1931 in a 53 year old woman. The cysts follow a benign course and is usually an incidental finding .Majority of the pleuropericardial cysts can be diagnosed on plain films . USG provides additional useful information and CT is considered diagnostic and important for the delineation of the surrounding anatomy.

2.Case Report

A 42 year old man presented in the OPD with chief complaints of dyspnea on exertion , chronic cough , intermittent left sided chest and back pain. There was no history of significant weight loss , fever or any chronic co-morbidities .

General examination revealed no significant findings. On auscultation of the chest there was an absence of breath sounds on the left side , with dull notes on percussion .

3.Image Findings

ECG – T wave decrease in Lead 1,avl , V2-V5 . Levocardia with dextroversion due to mass .

2-D Echo –Mediastinal shift to the right .Cystic mass in the left hemithorax. LV systolic function is normal . EF- 50-55% , mild pericardial effusion . 13.7x13.4. large cystic mass . Mild TR , AR . Severe PH (55-60mmHg) and IVC dilatation . Cattle tracking is positive , grade 1 LVDD

Chest XRAY-A large opacity on the left side of the chest with a mediastinal shift to the right , trachea deviated to the right and left hemithorax . Heart shifted to the right and near total collapse of the left lung.

Ultrasonography –Large complex left hemithorax cyst with dimensions 16.8 x 13.9 x 15cm . Wall is 6mm thick . There is presence of mild pleural effusion with collapse of underlying lung .Consolidated lung underlying the cyst .Mediastinal shift of approximately 2cm .

Computated Tomography (CT)- (figure 1)

large cystic thick walled mass in mid mediastinum . It extends up to the level of the diaphragm .Mild peripheral enhancement on contrast study with wall calcification can be seen and subtle wall nodularity is noted at some places .

It measures about 19.9 x 16.7 x 13.4 cm (sl x ml x ap) . Mild pleural effusion and near complete collapse of left lung can be noted . There is mediastinal shift to the right.

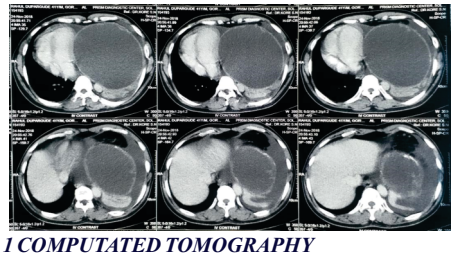

Figure 1 COMPUTATED TOMOGRAPHY

4.Intra-operative findings and further investigations

First VATS was attempted which revealed a large cyst adherent to the chest wall and pericardium ,due to which a creation of pneumothorax for VATS failed , hence the surgery was converted into a posterior lateral Thoracotomy. Thoracotomy revealed a large and thick cyst (figure 2). 1.8Litre of brown exudative fluid was aspirated. The Cyst was firmly adherent to the chest wall and pericardium and complete excision of the cyst was done.

5.Histopathology

Gross (figure 3) – A large cystic cut specimen 17x14x4cm . The external surface is reddish with glistening capsule and the cyst wall is covered by fibrinous material.

Microscopy (figure 4) –the cyst is lined by flattened epithelium . A focus of cholesterol clefts covering the wall can be seen . The wall shows areas of calcification , mixed infiltrating infiltrate , pigment laden macrophages and congested dilated blood vessels . No atypia or malignant cells detected .

The above findings confirmed the mass to be a pleuropericardial cyst. The post operative period was uneventful . Post-operative chest X-ray showed complete expansion of the lung with minimal air fluid levels in the left upper zone , which did not require further management . The patient was discharged on post operative day 7.

Figure 2- Thoracotomy revealed a huge cystic mass filled with fluid

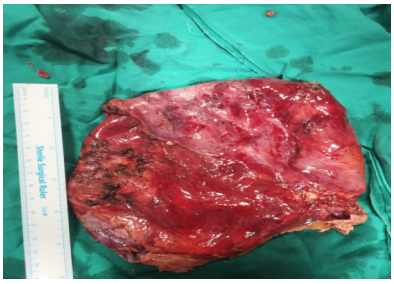

Figure 3-The tumour excised is nearly 20cm

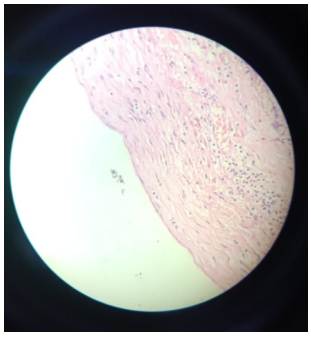

Figure 4 – Histopathology confirms it is a pleuropericardialcyst . A) Calcification B) Mixed inflammatory infiltrate C)Flattened Epithelium D) Cyst wall

6.DISCUSSION

Pericardial cysts are congenital benign lesions that areusually incidental findings on chest x-ray in an asymptomatic patient .Approximately 70% percent are located in the rightcostophrenic angle , 22% on the left and the remaining in the posterior or anterior mediastinum . "Over 200 cases of pericardial cysts have been described in the literature" ,in 1989 the largest cyst was documented with the size of 28x23x18 cm .

The complications of pleuropericardial cysts are right ventricular outflow obstruction, inflammation and infection , pulmonary stenosis, atrial fibrillation and congestive heart failure and cardiac tamponade . Ultrasonography provides additional information while CT scan is diagnostic and confirmatory. A diffusion weighted cardiac MRI is necessary in some cases with diagnostic confusion.

The management of pericardial cysts includes observation , per-cutaneous drainage and/or resection . The indication of resection include large size , malignant potential or life threatening emergencies like cardiac tamponade . Surgical technique followed is thoracotomy and excision of large cysts should involve aspiration of the fluid so as to reduce the volume , decreasing the compression effects and allowing easier resection . Overall the management is same as mediastinal masses . A systemic approach should be followed depending on the dimension of the mass . Ultimately a thoracotomy is the final surgical intervention.

We are presenting this case as the cyst measured19.9 x 16.7 x 13.4 cm with near complete collapse of the left lungs but the patient was asymptomatic and was diagnosed incidentally on routine chest X-ray .

7.CONCLUSION :

Pleuropericardial cysts are benign mediastinal masses that are usually silent in its course and should be thought of as a differential diagnosis for space occupying lesion of the mediastinum . CT scan is useful in confirming the diagnosis . Definitive management for symptomatic cysts is surgical resection.

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