

## MEDIASTINAL THYMIC CYST IN A 50-YEAR-OLD MALE

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### ABSTRACT

Thymic CYSTs of the mediastinum are rare. It has been reported that their incidence is between 1 to 4.8%. They usually present as an asymptomatic mediastinal mass and are mostly found incidentally. This study reports a rare presentation of a mediastinal thymic CYST in a 50-year-old male, whose chronic right sided chest pain prompted him to visit a local hospital where his chest x-ray revealed a large mediastinal mass at the right cardiophrenic angle. His chest CT revealed a large multilocular hypodense cystic lesion that was resected completely by median sternotomy. On Histopathological examination, Hassall's corpuscles confirmed the diagnosis of thymic CYST.

**Keywords:** Thymic CYST, Mediastinal, Incidence.

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### INTRODUCTION

Thymic CYSTS comprise 1 to 4.8% of all the mediastinal CYSTs<sup>1</sup>. They are located in the anterior compartment in all age groups and are usually discovered incidentally on chest X-ray or during operation for some other reason<sup>2,4</sup>. They have been reported with a variety of neoplastic, autoimmune, and infectious conditions<sup>2</sup>. Although mediastinal thymic CYSTs are rarely symptomatic, dyspnea, cough and chest pain have been reported in some cases<sup>3</sup>. Thymic CYSTs are more prevalent in young and middle aged adults, and their origin could be congenital or acquired<sup>4</sup>. A surgical resection provided the histological diagnosis of a thymic CYST in the present case.

### CASE REPORT

A 50-year-old male, athlete, admitted to us with history of severe right sided chest pain associated with shortness of breath and heaviness in chest. He had no history of cough, hemoptysis, loss of weight, and fever. He had similar pain 7 months ago before admission for which he visited a local hospital and received intravenous (IV) non-steroidal anti-inflammatory drugs (NSAIDs). His physical examination and laboratory results were normal. His chest X-ray (fig-1a) was done at that hospital which showed large mediastinal

mass with a sharp margin at the right cardiophrenic angle. During admission, his Computed Tomography (CT) scan of chest with IV contrast (fig-1b) was done that showed large, thin walled,



Figure-1a: Chest x-ray, showing a large lesion in the right anterior mediastinum.

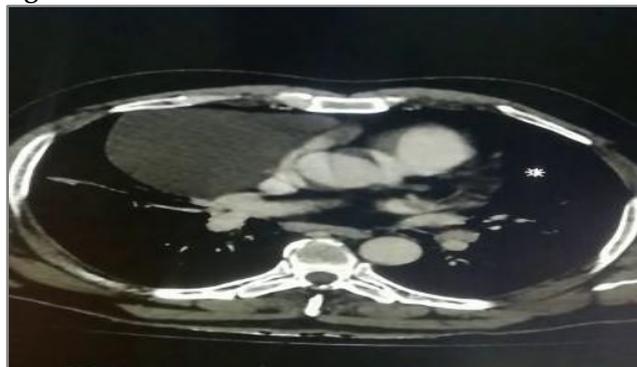


Figure-1b: CT-scan chest with IV contrast was done that showed large, thin walled, lobulated, fairly well defined hypodense cystic lesion without definite internal septation, calcification along the right cardiomediastinal border.

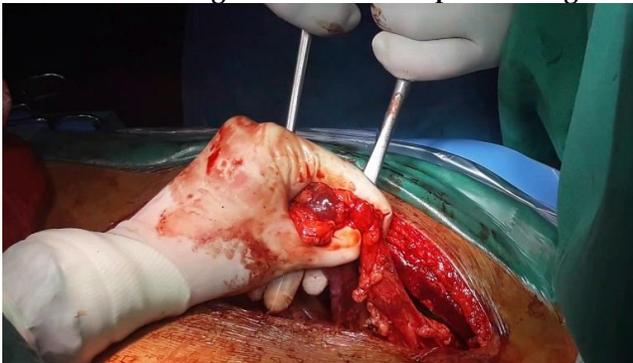
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lobulated, fairly well defined hypodense cystic lesion without definite internal septation, calcification along the right cardio-mediastinal border occupying mostly right anterior cardiophrenic angle. The differential diagnosis included pleuro-pericardial CYST and bronchogenic CYST. Pre-operative diagnosis of a large benign cystic tumor in the anterior mediastinum was made. It was noticed that during general anesthesia induction,

CYST, the patients CVP fell to 8-10mmHg. The surgical procedure was done carefully to avoid damage to mediastinal structures preserving the phrenic nerve. Around 300ml, straw yellow colored, fluid was drained and the mass measuring 7.0 x 7.0cm, weighing 45 grams was sent for histopathology (fig-2c), that revealed CYST wall lined by stratified squamous to glandular epithelium resting on thick fibrous tissue and thymic



**Figure-2a:** Per-operatively a large, multilocular, CYST of 10.1 x 9.5 x 8.4 cm was observed loosely attached with pleura and pericardium, extending from suprasternal notch to right anterior cardiophrenic angle.



**Figure-2b:** Loose adhesions with pleura and pericardium were observed.

his central venous pressure (CVP) was high i.e. 15-20mmHg. He maintained his oxygen saturation at 90% with 100% FiO<sub>2</sub>. Median Sternotomy was done. Peroperatively a large, multilocular, CYST of 10.1 x 9.5 x 8.4 cm was observed loosely attached with pleura and pericardium, extending from suprasternal notch to right anterior cardiophrenic angle (fig-2a,b).

The CYST was resected completely and the leakage of the cystic fluid was avoided. It was also observed, that after the resection of the



**Figure-2c:** Image showing the mass resected.

tissue. The thymic tissue showed Hassall's corpuscles confirming the diagnosis of thymic CYST.

The patient had respiratory discomfort during his postoperative course due to atelectatic right lung, however with chest physiotherapy his respiratory function improved. The patient was discharged on 5<sup>th</sup> post-operative day.

**DISCUSSION**

Thymic CYSTs of the mediastinum are a rare finding, having an incidence of 1 to 4.8% of all the mediastinal masses and usually occur in anterior mediastinum<sup>5</sup>. Thymic CYSTs are either unilocular or multilocular. Unilocular CYSTs are congenital and derived from remnants of the third branchial pouch derived thymopharyngeal duct whereas multilocular CYSTs result from cystic degeneration of thymic hassals corpuscles<sup>6</sup>. They have either a neoplastic or an inflammatory aetiology<sup>7</sup> and per-op finding reveals multiple adhesions to surrounding structures<sup>8</sup>. Thymic CYSTs usually do not cause any symptoms and the patients are mostly asymptomatic, however chest pain, dyspnea, cough, dysphagia and voice hoarseness have also been reported in some instances<sup>9</sup>. Thymic CYSTs typically manifest on CT

as unilocular or multilocular cystic masses, often with soft-tissue attenuation components. CT cannot be used to distinguish neoplastic from non-neoplastic soft-tissue components. It is however useful for preoperative diagnosis<sup>10</sup>. The chest CT is equal or superior to MRI in the diagnosis of anterior mediastinal masses<sup>11</sup>, and it is a reliable, cost-effective, diagnostic tool for thymic tumors according to the ESTS (European Society of Thoracic Surgeons) members<sup>12</sup>. It is generally accepted that symptomatic thymic CYSTs or those with progressive growth should undergo surgical resection. However, there is still controversy regarding the surgical indication for asymptomatic thymic CYST patients<sup>13</sup>. Rupture of a thymic CYST could lead to a pleural effusion, infection or hemorrhage in the thoracic cavity, and malignant transformation cannot be ruled out in some circumstances<sup>14</sup>.

## CONCLUSION

Mediastinal thymic CYSTs are rare but should be included in the differential diagnosis of mediastinal masses. Definitive diagnostic test for mediastinal thymic CYST is histopathologic examination. Surgery is the definitive treatment if the mass is symptomatic. Prognosis is excellent and no cases of recurrence have been reported.

## CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

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