Case Report

# Anterior mediastinal mass: A case report of thymoma

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**Abstract**

A 52-year-old male patient who had complaints of breathlessness, dry cough, wheezing, and fever was referred to the Department of Chest Medicine. A plain chest X-ray showed gross widening of the mediastinum with a well-defined homogenous opaque shadow predominantly involving superior mediastinum. Chest CT scan was also carried out, which showed a well-defined ovoid predominantly isodense to hypodense lesion. All these features were suggestive of benign thymoma for which surgery was the mainstay of treatment along with induction chemotherapy and adjuvant radiotherapy. A multidisciplinary approach was recommended for the evaluation and treatment of thymoma or thymic carcinoma owing to its potential for invasion and local recurrence.

**KEY WORDS:**

## Introduction

The most common mediastinal mass is neurogenic tumors (20%), found in the posterior mediastinum, followed by thymoma (15%–20%) located in the anterior mediastinum. Neurogenic tumors, germ cell tumors, and foregut cysts correspond to the majority of childhood lesions whereas primary thymic neoplasm, thyroid masses, and lymphomas are the most common in adults.[1]

In patients aged less than 20 years or more than 40 years, approximately one-third of mediastinal tumors are malignant, whereas in patients aged 20–40 years, roughly half are of the tumors malignant. Benign lesions occur in individuals aged 20–50 years and seen slightly more frequently in women than in men. When taking into consideration all age groups, approximately 55% of patients with benign mediastinal masses are asymptomatic at presentation, compared to only approximately 15% of those in whom masses are found to be malignant.[2]

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Invasive thymoma and thymic carcinomas are relatively rare tumors, which together represent approximately 0.2%–1.5% of all malignancies.[3] Overall incidence of thymoma is 0.15 cases per 100,000, based on data from the National Cancer Institute Surveillance, Epidemiology and End Results program.[4]

Thymomas are indolent tumors with a tendency toward local recurrence rather than metastasis. The usual location of thymoma is anterosuperior mediastinum and is discovered incidentally by chest radiography during a routine examination. They can produce symptoms such as cough, dyspnea, palpitation, and substernal or interscapular pain. There are a number of paraneoplastic syndromes associated with thymoma. Classically, thymomas are encapsulated, circumscribed, and lobulated neoplasm. Thymoma contains varying proportions of epithelial cells and lymphocytes. However, the epithelial cells are the only neoplastic elements in such tumors.[5]

## Case Report

A 52-year-old, man presented with complaints of breathlessness and dry cough on and off for the past 6 months, wheezing since 1 week, and history of fever for past 4 days, was referred to our hospital. The patient had no significant personal or family history of carcinoma and was nonsmoker and nonalcoholic, and there were no complaints of hoarseness of voice or dysphagia. The results of the general and chest examinations were normal.

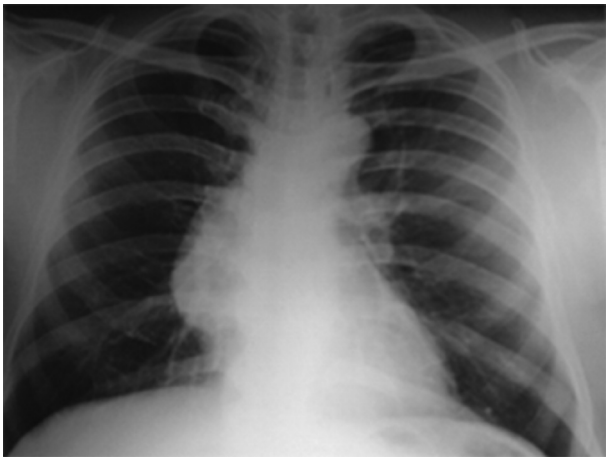

**Figure 1:** Plain chest radiograph showing a mass lesion in the right lung.

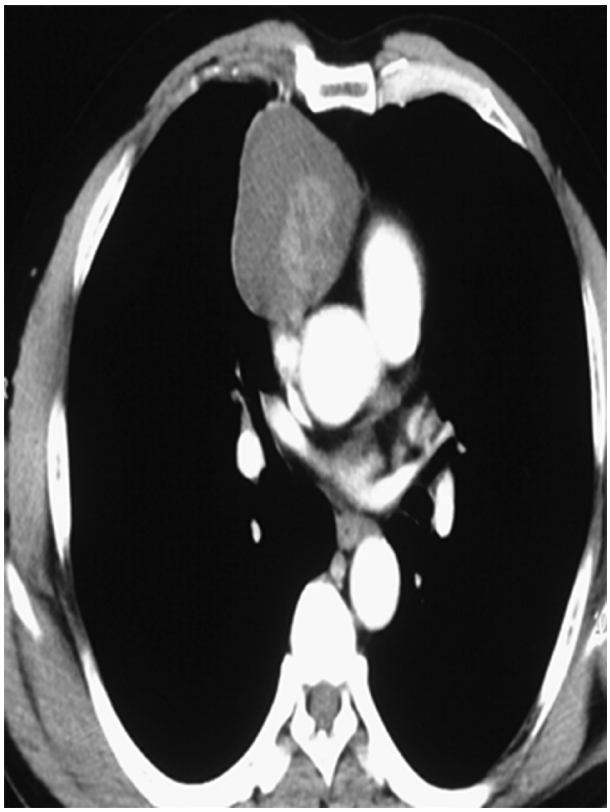

**Figure 2:** Contrast-enhanced computed tomography (CECT) image of thymoma. The figure shows image at level of the carin A with right-sided thymoma.

A plain chest X-ray showed gross widening of the mediastinum with a well-defined homogenous opaque shadow predominantly involving superior mediastinum obscuring the border of right heart near the hilum and suggestive of lymphoma or thymic mass [Figure 1].

In view of the chest X-ray finding, a contrast-enhanced chest CT scan was carried out, which showed a well-defined ovoid predominantly isodense to hypodense lesion of size 4.4 cm × 8.0 cm × 5.0 cm in the anterior mediastinum in the thymic region, anterior to ascending aorta in the right thoracic cavity. Hypodense lesion was noted within. The tumor showed clear borders without evidence of calcifications. Lesion showing enhancement of solid components in contrast to the previously described anterior mediastinal mass lesion is suggestive of thymoma [Figure 2].

CT-guided fine-needle aspiration cytology (FNAC) of anterior mediastinal mass was also carried out, which showed highly cellular smear composed of cohesive clusters and sheets of ovoid to spindle thymic epithelial cells with distinct cell borders and a moderate cytoplasm. The cells were admixed with reactive lymphocytes. The above features are suggestive of benign thymoma.

## Discussion

Thymoma often do not cause symptoms and are picked up incidentally by imaging studies performed for other reasons like when patients present with vague symptoms such as chest pain, difficulty in breathing, or cough.[6]

When a thymoma is suspected, the mainstay of diagnosis is a CT scan, and it is performed to estimate the size and extent of the tumor. In many instances, the finding of a mass in the location of the thymic gland is all that is required to justify its removal, as benign or encapsulated thymoma can progress over time into invasive or malignant thymoma. If tissue confirmation is required, a CT-guided FNAC/biopsy is usually performed.[7]

Surgery is the mainstay of treatment for thymoma. If the tumor is apparently invasive and large, preoperative (neoadjuvant) chemotherapy and/or radiotherapy may be used to decrease the size and improve resectability before surgery is attempted. Removal of the thymus in adults does not appear to induce immune deficiency.[8]

## Conclusion

A multidisciplinary approach is recommended for the evaluation and treatment of thymoma or thymic carcinoma owing to its potential for invasion and local recurrence.

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