

A case report on incidental finding of thymoma as anterior mediastinal mass**Nithin K. T.¹, Vikas Kumar^{2*}, P. Prasanth¹**

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ABSTRACT

Thymomas are rare tumors in the anterior mediastinum, representing 50% of anterior mediastinal masses and about 20-30% of all mediastinal tumors. They are of unknown etiology; about 50% of patients with thymomas are diagnosed incidentally with chest radiography. Thymoma is classified into different stages, which determine the prognosis and type of management, the standard primary treatment for these tumors is Thymectomy. We present a case of 55-year female presented with shortness of breath, cough with expectoration and fever for past ten days. Chest x-ray revealed mediastinal widening. CECT chest showed a well-circumscribed heterogeneous solid enhancing mass lesion. FNAC was planned that showed features in favour of thymoma. Biopsy was done that confirmed lymphocyte rich type B thymoma.

Keywords: Anterior mediastinal mass, Mediastinal widening, Thymoma, Tumors of thymus

INTRODUCTION

Thymus is an anterior mediastinal lymphoid organ that is mainly composed of epithelial cells in the outer cortex, myoid cells and lymphocytes in the germinal centre. Thymus originates in the embryo from the ventral ring of 3rd and 4th pharyngeal pouches and ectoderm endoderm of the cervical sinus, as epithelial outgrowths on each side.¹ Thymus is responsible for the processing and maturation of T-lymphocytes. It is located in the upper anterior mediastinum and lower part of the neck, active during

childhood and involutes after puberty. It is replaced by adipose tissue gradually thereafter but never disappears completely. After birth, the thymus starts to grow to reach its maximum weight of 40 grams around puberty, involutes and persists in an atrophic state into old age.²

Thymomas are rare neoplasms arising from tissue elements of the thymus and developing in the anterior mediastinum.³ It can be associated with a variety of systemic and autoimmune disorders, such as pure red cell aplasia, pancytopenia, hypogammaglobulinemia,

collagen-vascular disease, and most commonly with myasthenia gravis.⁴ Thymomas are uncommon tumors with an annual incidence of only 0.15 cases per 100,000 person-years, yet representing the most frequently diagnosed tumor of the anterior mediastinum.⁵ Mediastinal masses are relatively uncommon. Slightly more than half of mediastinal masses are located in anterior mediastinum. Thymoma is most common anterior mediastinal mass and primary tumor of anterior mediastinum with high incidence in middle-aged patients.⁶ Thymoma are indolent tumors with tendency towards local recurrence rather than metastasis. Usually it is found incidentally on chest radiography on routine examination. As the only curative treatment, surgery remains the baseline attempt in thymoma therapy. Complete or partial median sternotomy with complete thymectomy is the operative approach of choice.

METHODS

A 55-year female presented with shortness of breath, cough with expectoration and fever for past ten days. Breathlessness was of acute onset and gradually progressive in nature. No history of orthopnoea. Cough was associated with minimal amount sputum production. No history of haemoptysis. There was history of fever that was of low grade and associated with chills and rigor. No diurnal variation. Fever was relieved after taking medications. There was no history of chest pain, loss of weight and appetite. There was no past history of tuberculosis.

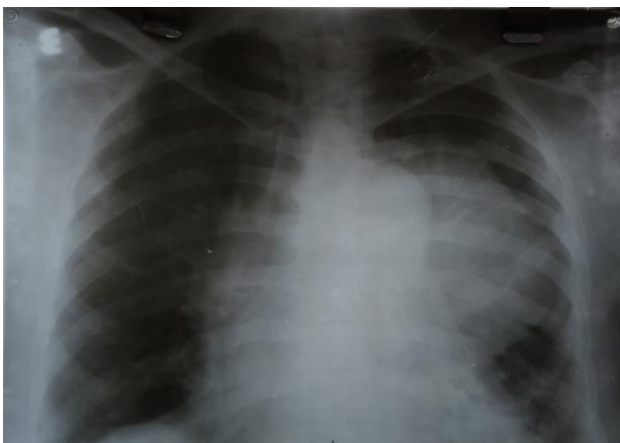


Figure 1: Chest x-ray showing mediastinal widening suggestive of anterior mediastinal mass.

On vital parameter examinations, pulse rate=74/minute, BP=110/70 mm of hg, respiratory rate= 22/minute and was febrile (100°F). On general physical examination, pallor present, no icterus, cyanosis, clubbing, lymphadenopathy and pedal edema. On respiratory system examination, on inspection, chest is normal in shape and bilaterally symmetrical, no dilated or engorged veins, no visible pulsations. On palpation, trachea was shifted to right side. No palpable swelling or pulsation. On percussion, bilateral resonant note present on whole lung field. On auscultation,

bilateral vesicular breath sound present on whole lung field. Coarse crept present on left side of chest.

Blood routine examination and urine routine examination were normal. Sputum examination for acid-fast bacilli was negative. Chest x-ray showed mediastinal widening. CECT chest showed a well-circumscribed heterogeneous solid enhancing mass lesion measuring 8.9 X 13.1 X 10.7 cm in anterior mediastinum on left side (?) thymic origin. (Figure 1) FNAC was planned that showed features in favour of thymoma. Biopsy was done that confirmed lymphocyte rich type B thymoma. The patient was referred to the oncology centre for further management.

DISCUSSION

Tumours of the thymus are among the rarest human neoplasms, comprising less than 1% of all adult cancers, with an incidence rate of 1-5/million population/year.⁷ Thymomas are the most frequent thymic tumours in adults, followed by mediastinal lymphomas, some of which arise from mediastinal lymph nodes. In children, the mediastinum is the site of 1% of all tumours; most common are non-Hodgkin lymphomas, while thymomas are extremely rare 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.⁸ Radiographically thymoma appears as a soft tissue mass with ill-defined borders and infiltrative growth into the surrounding structures, mediastinal fat planes and pleural surfaces It is rare malignancy of unknown etiology that peaks in incidence in middle age.⁹ It is associated with myasthenia gravis in 20-25% of patients.¹⁰ When a thymoma is suspected, the mainstay of diagnosis is a CT scan and is performed to estimate the size and extent of the tumor. However, FNAC and biopsy is required to confirm diagnosis.¹¹

Table 1: WHO Classification of Thymoma

Type	Histologic description
A	Medullary thymoma
AB	Mixed thymoma
B1	Predominantly cortical thymoma
B2	Cortical thymoma
B3	Well- differentiated thymic carcinoma
C	Thymic carcinoma

Thymic carcinoma mostly appears to arise *de novo*, but in rare instances, they can also arise in thymomas.¹² The World Health Organization recently developed a classification system according to the histologic type of thymoma based on cytological features of normal thymic epithelial cells and neoplastic cells.¹³ Table 1 The present case of thymoma was biopsy confirmed lymphocyte rich type B.

CONCLUSION

Thymomas and thymic carcinomas are rare anterior mediastinal tumours. Thymomas may be diagnosed incidentally at chest imaging, patients may be asymptomatic or present with symptoms due to the presence of an anterior thoracic mass or due to paraneoplastic disorders such as myasthenia gravis. The prognosis of thymoma or thymic carcinoma depends upon the stage of disease and the histologic type of the tumour. Thymectomy is the initial treatment for all patients with a thymoma.

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