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*Case Report*

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# Thymus Teratoma: A Rare Case Report

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## Abstract

*An 18-year-old presented with a 4-month history of chest pain, dyspnea recently arrived from Sri Lanka. A chest X ray revealed a large mass like opacity in the left hilum and CT demonstrated a 3.5 cm mass in the anterior mediastinum.*

*The patient was then referred to the surgical team for thoracotomy and resection. Surgery was uncomplicated with a rapid uneventful recovery. Histopathology concluded a diagnosis of teratoma of the thymus.*

**Keywords:** Thymus Teratoma, Germ Cell Tumor, Cystic Neoplasm, Mediastinal Mass.

## Introduction

Mature teratomas of the thymus are a rare phenomenon. Although they are the commonest germ cell tumours (GCTs) found in the mediastinum they form only 8% of all tumours in this area and are more commonly found in the gonads, retroperitoneum or sacrococcygeal region.

There are a number of pathologies to consider when evaluating an anterior mediastinal mass. We presented this interesting case as an opportunity to review the differential diagnoses and to discuss in brief the aetiology, presentation, investigation and management of this disease. (1)

## Case Report

An 18-year-old patient came to the outpatient department with non-specific complaints of chest pain, fatigue and lower back pain past 4 Months. She was referred due to left anterior mediastinal mass detected incidentally on chest xray for her visa processing 1 Month back. She denied any weight loss or fevers. She described non-drenching night sweats. A clinical examination was unremarkable. An Xray of the chest was subsequently done (Figure 1).

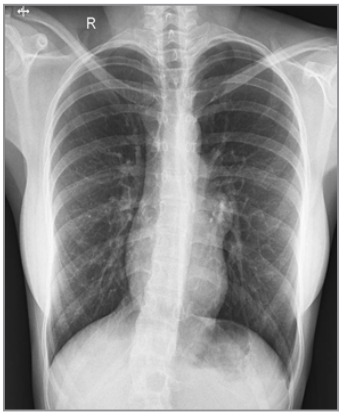



**Figure 1**: Showing a well Circumscribed Lobulated Soft Tissue Opacity Overlying the Left Hilum with Broad Based Towards the Mediastinum.

A further Chest CTscan showed anterior mediastinal mass of 3.5 cm suspicious for thymoma which was suspicious to have a deep connection with the left phrenic nerve (Figure 2).

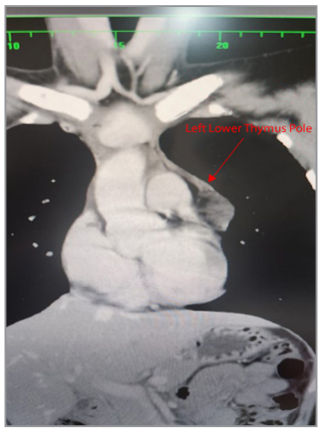



**Figure 2:** Biopsy was not possible technically due to the small mass with no access window for Ct-guided true-cut biopsy, and high risk as it was abutting the heart.

The patient was also referred to the PET-CT scan which showed Left anterior mediastinal soft tissue lesion, displaying coarse calcifications without expressing FDG avidity.

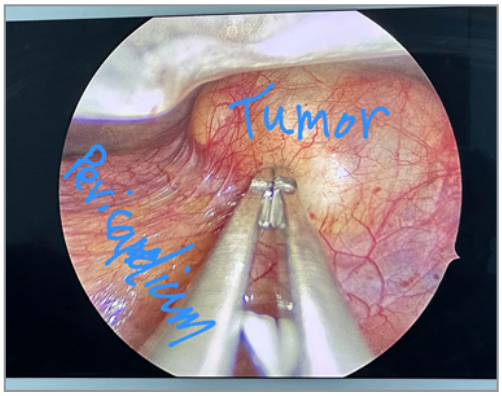



**Figure 3**

Intraoperatively, the left pleural cavity was entered through a trans single port 3.5 cm. The anterior mediastinal tumor was noticed occupying the left lower pole of the thymus gland compressing over the left phrenic nerve. Careful dissection of the tumor was done away from the phrenic nerve, then a total thymectomy was done enbloc with the thymic tumor. footage of the tumor next to the pericardium (Figure 3).

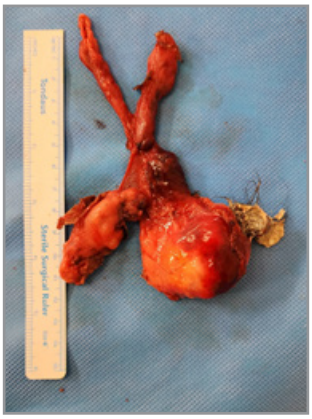
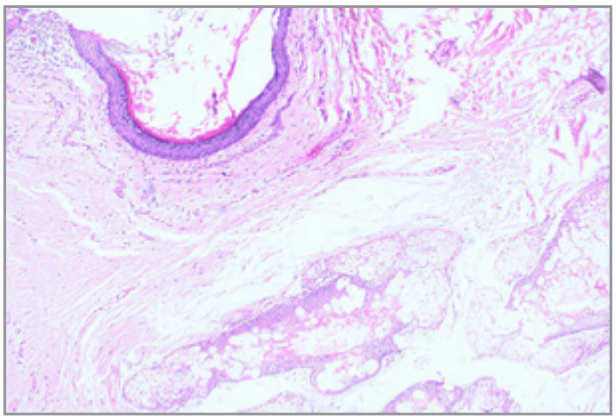


**Figure 3**

The specimen measured to be 5 x 5 x 1.5 cm in dimension with rupture of capsule (Figure 4).

Histopathology reported thymus tissue with cystic neoplasm. The cysts are lined mostly by stratified squamous epithelium and keratinous material. The wall contains epidermal appendages, cartilage and bone depicting a thymic teratoma (Figure 5a and Figure 5b).



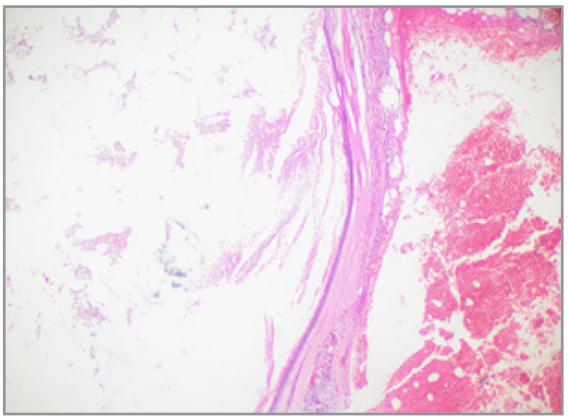


**Figure 5a and Figure 5b**

Patient was followed post op after 1 week with a successful recovery and now doing well.

## Discussion

The anterior mediastinum is the most common site for extra-gonadal germ cell tumors, with teratomas being the most prevalent type found there [1]. Mediastinal teratomas are typically made up of ectodermal tissues like hair and teeth, although they may also contain mesodermal and endodermal tissues. In rare cases where immature embryonic tissue is present in the teratoma, the tumor is classified as an immature teratoma, which requires different management and has a different prognosis compared to a mature teratoma [2, 3].

Due to their slow and subtle growth, mediastinal teratomas often remain asymptomatic until they are large enough to exert pressure on nearby structures, causing symptoms. Common symptoms include substernal chest pain, difficulty breathing, and cough [4]. along with fever, weight loss, nausea, vena cava occlusion, and fatigue [5].

A chest CT scan is the preferred diagnostic tool for mediastinal teratomas [6, 7]. as it helps determine the mass's size, location, and any extension to surrounding structures, as well as identifying hypervascularization of the mass [8]. Other common masses in the anterior mediastinum, such as lymph nodes, germ cell tumors, and thymic or thyroid masses, must be considered as differential diagnoses, including thymoma, lymphoma, and bronchogenic cyst [9]. On a CT scan, mature teratomas appear as large, heterogeneous masses containing fat, calcification, and areas of enhanced soft tissue, or as irregular cystic tumors with thick walls and extensive hemorrhage and necrosis.

Some studies have shown that, unlike mature teratomas, the combination of cisplatin-based chemotherapy followed by post-chemotherapy surgery for complete resection improves the prognosis [10]. Chemotherapy can reduce tumor size, alter tumor markers, and affect immature tumor components [11].

In this case, the patient underwent surgical resection, which has been shown in previous studies to be effective for managing benign intrapulmonary and mediastinal teratomas [12]. The decision to proceed with surgery was influenced by the large size of the tumor and the symptoms, including dyspnea and chest pain. During surgery, dense adhesions between the tumor and surrounding tissues are often noted, which guided the choice of thoracotomy approach. If a lobectomy or wedge resection of the lung is needed, a posterolateral thoracotomy is typically preferred for tumors in the mediastinum, especially if the tumor is large, involves the lung, or affects the pericardium.

## Conclusion

In conclusion, the incidence of immature mediastinal teratoma is uncommon, and due to its rarity, the diagnosis needs more profound evaluation studies such as radiological and pathological assessments. Immature teratomas are optimally treated by a combination of chemotherapy and complete resection.

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