Case Report

Rare cause of large anterior mediastinal mass—Thymolipoma

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Abstract

Background: Among the diverse causes of anterior mediastinal masses, thymolipoma is not a common entity. It largely comprises of adipose tissue and remnants of thymus tissue. Most patients are asymptomatic and are diagnosed incidentally.

Case Summary: Sixty-six-year-old female presented to the Emergency Department with a week of worsening shortness of breath, palpitations, diarrhea, palpitations & over 30 kg of unintentional weight loss in the last 1 year. Her investigations were in line of thyrotoxicosis with other lab findings correlating to the disease. However, during investigations, a chest radiograph showed left lower zone opacity and on follow-up CT scan it was revealed to be a huge fatty mass comprising of soft tissues arising from the anterior mediastinum, pushing the left diaphragm inferiorly and the lower lobe of left lung was entirely collapsed.

Conclusion: Thymolipoma can occur as a single entity and patients are often clinically asymptomatic. Biopsy is the definitive diagnostic tool, but it can also be challenging, especially if adequate samples are not obtained. CT scan can play an important role in supporting the diagnosis, with findings of fat containing structure arising from the anterior mediastinum along with internal fat stranding & nodularity. Treatment is surgical with excision of the entire mass.

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Introduction

Thymolipoma is a rare, slow growing benign neoplasm accounting for 2%-9% of all thymic tumors. It constitutes of thymic epithelium and adipose tissue, therefore appears as a fatty tissue with soft tissue attenuation of thymus in a CT scan [1]. This patient was admitted for thyrotoxicosis and was incidentally diagnosed with thymolipoma.

Case presentation

A 66-year-old Caucasian female presented with progressive shortness of breath, palpitations, unintentional weight loss of over 30 kg in 1 year, diarrhea and palpitations that has been notably worsening over past week. Her family history was significant for “thyroid disease” in both of her parents. She was tachycardic and was saturating at 92% in room air. Her TSH

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was undetectable while free T3 was 27.05 pg/mL and free T4 5.72 ng/dL. She was subsequently diagnosed with thyrotoxicosis and was managed with standard therapy. She also had an elevated BNP to 799 pg/mL corresponding to volume overload. Chest x-ray showed some pulmonary vascular congestion along with obliteration of left costophrenic angle by a left lower zone opacity with mediastinal shift concerning for a moderate pleural effusion, diaphragmatic hernia or a mass. A point-of-care ultrasound ruled out fluid and raised suspicion for a mass.

Chest CT then revealed a fat containing structure occupying the lower half of left hemithorax with internal stranding and nodularity that appeared to be arising from the anterior mediastinum. The mass was pushing the left hemidiaphragm inferiorly and the left lower lobe was completely atelectatic. The lesion did not however extend below the diaphragm.

After patient became more stable from the thyrotoxicosis with proper management, patient underwent ultrasound guided left percutaneous lung biopsy. The histopathology demonstrated a well-differentiated adipose tissue with mesothelial cells. Immunohistochemical studies were negative for MDM2. Differentials from the pathology report were thymolipoma and thymoma, but given presence of adipose tissue and supportive radiological findings, thymolipoma was diagnosed and patient was referred for surgery (Figs. 1–5).

**Discussion**

Among the diverse causes of anterior mediastinal mass, thymoma, teratoma, and lymphoma are the commonest [2]. CT scan is usually the diagnostic modality of choice and
considering the findings, fat attenuation is limited to germ cell tumors, thymolipoma, lipoma, liposarcoma, and Morgagni hernia [1,3,4]. Thymolipomas are rare benign neoplasms comprising of remnants of thymic tissue and abundant adipose tissue. It can be mistaken for a pleural effusion in a chest radiograph given its homogenous appearance and contralateral displacement of mediastinum. Majority of patients are asymptomatic and are diagnosed incidentally as observed in a review of 33 similar cases [5].

Thymolipoma along with hyperthyroidism has been previously described in a case report from Japan by Takahashi et al., which in 2009 was reported as the second case worldwide [6]. It can also cause compression of the heart leading to chronic heart failure, as reported in a case in Italy and interestingly bears commonality with our patient who had mediastinal displacement, elevated BNP levels and bilateral pulmonary vascular congestion [7].

**Conclusion**

Thymolipomas can present as large mediastinal masses extending to the lungs and is mostly diagnosed as part of investigation of a secondary disease. Diagnosis can be made from classic radiographic findings and confirmation with a biopsy. Treatment involves surgical removal of the entire tumor.

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Fig. 4 – CT chest sagittal view demonstrating large fat containing structure with internal stranding and nodularity.

Fig. 5 – Hematoxylin & Eosin staining at 100x magnification: Well-differentiated, non-atypical adipose tissue with a small focus of benign mesothelia.