Unusual Mediastinal Tumour of Thymic Origin

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Introduction

Thymus is a principally lymphoid organ located in anterosuperior mediastinum and one of the main elements of the immune system. Most common thymic tumours are thymomas, but other types such as lymphomas, thymolipoma, germ cell tumours, cysts, and neuroendocrine carcinomas may also arise in thymus. Here we are presenting a case of huge thymolipoma with unusual presentation of being asymptomatic. On English literature search we found only three such case reports and none from Indian Institutes.

Case Report

A 21 year old male athlete patient was incidentally detected to have a large mass with mediastinal shift, on Chest X-ray (Fig. 1) done after road traffic accident, occupying the left side of chest. The patient had no chest symptoms even on direct questioning. On examination, air entry was absent on left side of chest. The computed tomography (CT) scan of chest revealed superior mediastinal mass arising from the region of thymus measuring $16 \times 10 \times 15$ cm, occupying most of the left hemithorax with collapse of underlying lung—suggestive of mediastinal lipomatous lesion (Fig. 2). CT guided trucut biopsy was suggestive of lipoma or thymolipoma. Patient underwent left thoracotomy with excision of mediastinal mass along with total thymectomy in May 2012. Intraoperatively there was a large encapsulated mediastinal mass

(Fig. 3) occupying left side of chest compressing left lung & pericardium. Left phrenic nerve was adherent to the tumor, but preserved during surgery. He was extubated after 3 h following surgery. Post operative recovery was uneventful. The post operative chest X-ray showed good left lung expansion with normal mediastinum. The weight of the tumor was 1.8 kg. Histopathological examination confirmed it as thymolipoma showing abundant mature adipose cells and thymic tissue epithelium (Fig. 4).

Discussion

Thymolipoma is an uncommon benign neoplasm that accounts for 2 % to 9 % of thymic tumours [1, 2]. First case was documented by Lange in 1916 and described as a lipoma of the thymus; the term ‘thymolipoma’ is attributed to Hall, as described in 1948 [3].

Fig. 1 Pre-operative Chest X-ray showing large mass occupying the left side of chest with gross mediastinal shift

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Fig. 2 CT scan of chest in lung windows showing mass arising in the superior mediastinum from thymus

Most commonly accepted theory regarding its pathogenesis is the transformation of thymic hyperplasia to fatty tissue. Thymolipomas may cause symptoms such as cough, shortness of breath, hoarseness, hemoptysis and cyanosis, but 30 to 50 % of the cases are asymptomatic and found incidentally [4] as seen in our case.

Thymolipomas can be confused with the more common lesions like mediastinal teratomas, thymic hyperplasia, ectopic goitre and cardiomegaly on radiological investigation. They are seen as soft tissue densities containing fat with fibrous septae on thoracic CT. The differential diagnosis includes other lesions seen on thoracic CT as fatty tissue density such as lipoma, liposarcoma, teratoma, epicardial fat tissue, and diaphragmatic hernias [2, 4].

Thymolipomas are yellow masses with well-defined borders, a capsule, and lobulated contours on macroscopy [4]. Thymolipomas usually grow slowly and attain enormous dimensions by the time of diagnosis [1, 2, 4]. In our case, tumour weighed 1.8 kg. On extensive literature search we

Fig. 3 Large encapsulated thymolipoma being delivered out of chest through thoracotomy

Fig. 4 Histopathology of thymolipoma showing both large adipose cells and epithelial component of thymoma

found only three case reports of such tumours weighing more than 2 kg [1, 3].

Thymolipomas are abundant in mature adipose tissue and thymic tissue remnants on histopathology. The fatty tissue consists of mature adipocytes with no atypical features. The thymic tissue component can vary from atrophic thymic epithelial components to areas of large thymic parenchyma consisting of Hassall corpuscles. The differential diagnosis on histopathology includes lipoma, well-differentiated liposarcoma and thymic hyperplasia [4].

Occasional symptoms are related to compression of adjacent structures [2]. Surgical resection is the treatment of choice, which can be accomplished via sternotomy, thoracotomy, clamshell incision or sternotomy accompanied by anterolateral thoracotomy (hemiclamshell incision) and offers the only possibility of cure [1, 2].

Conclusion

Thymolipoma is a rare thymic tumour which can attain massive dimensions before presentation. Large size of the tumor does not reflect inoperability. Complete excision with thymectomy is the curative surgery.

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