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THYMOLIPOMA CASE SERIES WITH A RARE CASE OF GIANT MEDIASTINAL MASS

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ABSTRACT Thymolipoma is an uncommon benign neoplasm of the thymus composed of mature adipose and thymic tissue. The appropriate surgical approach for a large mediastinal tumour is controversial. Median sternotomy is the standard approach for thymomas. We herein report the clinical data from 6 cases of thymolipoma, diagnosed at our centre between September 2018 and December 2020 with retrospective analysis. There were four female and two male patients, whose ages ranged from 22 to 54 years, with a mean age of 40.4 years. Two patients had pulmonary symptoms and one patient had myasthenia gravis. All thymolipomas were localized in the anterior superior mediastinum except one, which was extending upto the diaphragm. The surgical approach was thoracotomy/antero lateral approach in all cases. Thymectomy was performed on all patients.

The anterolateral incision was less invasive and more versatile, as the incision could be extended to a hemi clamshell or posterolateral incision depending on exposure and relationship to adjacent organs and vascular structures.

KEYWORDS : Mediastinal tumor, Thymolipoma, Anterolateral incision

INTRODUCTION:

Diagnosis of thymolipoma should be considered in the case of a mediastinal mass with fat density, especially if it is interspersed with strands of soft tissue attenuation on computed tomography (CT) scans.[1] Less than two hundred cases have been described in the literature. Complete surgical resection is the mainstay of treatment. While median sternotomy has been the standard approach for thymectomy, the best incision is controversial for so-called giant thymomas.[2] Here we report the case series of thymolipomas along with emphasis on a special case of a giant thymoma in the anterior-inferior mediastinum, all successfully resected via anterolateral thoracotomy approach.

CASE SERIES:

The anterior mediastinal masses were taken up for en-block excision via thoracotomy/antero lateral approach with minimal adjacent viscera or vascular involvement. They were diagnosed based of imaging study of the thorax following persistent chest discomfort in 3 patients and one with history of progressive weakness since 4 months. The unusual thymolipoma presented in a 35-year-old female who was referred to our centre for evaluation of a giant mediastinal mass with presenting complaints of dyspnoea on exertion for three months. The patient was vitally stable and the only finding of interest in the physical examination was the complete absence of vesicular breath sounds on the right side. The laboratory findings were not remarkable. Chest CT-scan revealed large heterogenous mass of size 15*16*11 cm (AP*TR*CC) is seen in the right lower hemi thorax, mainly of fat density with thick soft tissue strands within. The lesion is seen extending upto the anterior inferior mediastinum and is abutting lobar branches of right pulmonary artery. Inferiorly the lesion is indenting the diaphragm. There was no infiltration of the adjacent structures (Fig. 1a & 1b). Preoperative needle biopsy was not performed because of the risk of dissemination or bleeding.

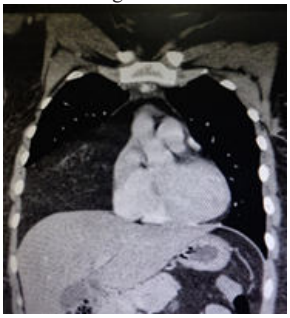

Fig. 1a: CT thorax image showing the giant thymolipoma in the right hemithorax.

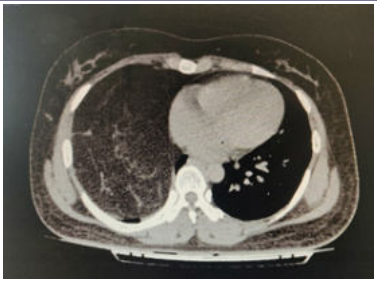

Fig. 1b: CT thorax image showing the giant thymolipoma in the right hemithorax.

Surgical resection was thus recommended. We elected to perform an anterolateral thoracotomy in the fifth intercostal space in the semi-lateral decubitus position, which could be extended to a posterolateral thoracotomy or hemi-clamshell thoracotomy depending on the relationship of the tumour to the inferior pulmonary vein or superior vena cava, respectively. An anterolateral incision of 20 cm in length, was made in the fifth intercostal space. The tumour was excised from the anterior mediastinal fat tissue and thymus. The tumour was resected without involvement of the superior vena cava or inferior pulmonary vein.

Macroscopically, the resected tumour was measuring 30×17×5 cm, consisting of encapsulated but a soft smooth elastic surface and composed of a yellowish tissue (Fig. 2a & 2b). The histopathological diagnosis revealed a benign thymolipoma consisting of mature fatty tissue and hyperplastic thymic structures with Hassall's corpuscles. No signs of malignant disease were observed. The post-operative period was incident-free, and the patient was discharged 5 days after surgery. The patient remains alive and disease-free, 18 months after the intervention.

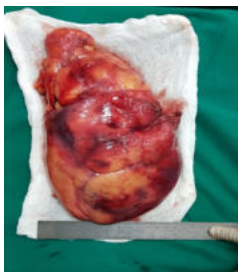

Fig. 2a: En-mass pathological specimen of the giant thymolipoma

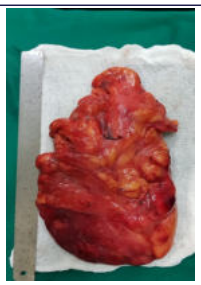

Fig. 2b: En-mass pathological specimen of the giant thymolipoma.

The other cases of thymolipoma too were operated with the similar anterolateral thoracotomy approach with uneventful post operative period. All patients are healthy and and regular in their follow-ups.

DISCUSSION:

The first reported case of a lipoma of the thymus was published by Lange in 1916 and in 1948, Hall introduced the term thymolipoma into the literature.[3] Thymolipoma is an uncommon benign neoplasm that accounts for 2-9% of thymic tumors.[4] Thymolipomas are characterized by mesodermal (fatty) and endodermal (thymic epithelium) elements. They are lobulated and well encapsulated, with septal divisions.

Thymolipomas usually present as asymptomatic tumors. Thymolipomas usually grow slowly and can reach large sizes before the diagnosis. When the patient experiences symptoms, they are usually related to compression of adjacent structures, such as the heart, the great vessels, the lungs or the bronchi.[5] This benign neoplasm can be associated with some autoimmune disorders, such as myasthenia gravis, systemic lupus erythematosus, hypogammaglobulinemia, Graves' disease and red cell aplasia.[6]

Although the finding of soft fatty tissue within the tumour with no invasion of adjacent structures on imaging studies clearly suggests a diagnosis of thymolipoma, it is impossible to make a definitive diagnosis or to even distinguish benign disease from malignancy. Preoperative diagnosis is frequently based on CT and MRI findings. The use of FNAB remains controversial.

Surgical intervention is the only cure and also provides the definitive diagnosis based on histopathological findings. Various surgical approaches have been described, including thoracotomy, sternotomy or video-assisted thoracoscopy.[7] The decision must be tailored to tumour size and site. Some groups have reported a thoracoscopic approach, but we disagree with this method because it would nevertheless be necessary to perform a relatively large thoracotomy in order to remove the mass from within the thorax.

CONCLUSION:

In the present case series, surgical resection for all the thymolipomas including the giant thymolipoma were successfully performed via an anterolateral approach, which is relatively less invasive and more versatile due to the ability to extend the incision posteriorly or to add a median sternotomy.

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