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Case Report

Giant Thymolipoma Tackled with Clamshell Thoracotomy

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Abstract

Thymus gland tumour with mature adipocytes named thymolipoma, is a slow growing benign tumour in the mediastinum which does not cause any symptoms till it grows to a significant size. This case report is about a patient presented with respiratory distress requiring intubation and intensive care admission due to a giant tumour in the mediastinum. It was diagnosed a thymolipoma after computed tomography imaging of the thorax showed a fat density tumour and a core biopsy revealing benign lipomatous lesion. Patient made a complete recovery after undergoing a clamshell thoracotomy and resection of tumour.

Keywords: Giant Thymolipoma; Clamshell Thoracotomy

Introduction

Thymolipoma is a rare anterior mediastinal tumour composed of adipocytes and benign thymic tissue. It is usually quiescent in the majority but starts manifesting symptoms when it grows to compress adjacent structures in the thoracic cavity [1]. Surgical resection is the method for curation of the disease. There are many surgical approaches for such resections and here we report a case of giant thymolipoma which was cured with a clamshell thoracotomy.

Case Report

We present a 46 year old gentleman with no comorbidities, who presented to the emergency department with worsening dyspnoea for 1 month associated with fever and chest pain. The patient had no history of cough, haemoptysis, loss of weight, constitutional symptoms or family history of malignancy. Upon presentation, appeared to be dyspnoeic with excessive use of accessory respiratory muscles. Respiratory rate was 40 breaths per minute and blood oxygen saturation pressure attainable was 78% despite on high flow reservoir bag mask delivering 100% oxygen. Local examination revealed dullness on percussion and reduced breath sounds over bilateral chest up to the upper zone level. Airway and breathing were secured with endotracheal intubation in view of worsening respiratory fatigue and impending collapse.

Chest radiograph showed homogenous opacity occupying both the lung fields, up to the level of the 4th intercostal space on the right and 6th intercostal space on the left. The trachea and cardiac silhouette were central. Initial impression of chest radiograph was bilateral massive pleural effusion. Contrast enhanced computed tomography (CECT) of the chest revealed an extensive mediastinal fat mass that was occupying the superior and inferior mediastinum mainly the anterior part (Figure 1). The mass was encasing the heart and great vessels with mass effect over the bilateral upper lobe bronchus, lower lobe bronchus and its branches causing luminal narrowing. Both main bronchi were patent and not com-

Figure 1: Contrast enhanced computed tomography of the thorax revealing a fat density tumour occupying almost the whole bilateral hemithorax leaving just a small area of lung tissue over the posterior part on left side.

pressed. Superior pulmonary vessels were displaced superiorly but remained patent. Ultrasound guided biopsy of the mediastinal mass was done, and histopathology examination revealed a benign lipomatous lesion with adipose tissue that was composed of mature adipocytes and local lymphocytic infiltration within intervening fibrous septa. No lipoblasts or atypical stromal cells seen.

Clamshell thoracotomy (bilateral 4th intercostal space) and excision of the mediastinal mass was performed. A large mediastinal tumour measuring 40 x 30cm on the right hemithorax and 30 x 20cm over the left hemithorax occupying nearly 90% of the thoracic cavity was removed. The tumour weighed 3600 grams (Figure 2 and 3). There was no tumour infiltration to the surrounding structures. The draining veins from the tumour were to the innominate vein. Post tumour removal, the left lung expanded whereas the right lower and middle lobes did not fully expand. Intraoperative blood loss was 800 mililiters and received blood transfusion. Duration of surgery was 200 minutes.

Post-operative care was in intensive care unit where he developed severe pneumonia and tracheostomy was performed on post-operative day 5. He was weaned off ventilator support on post-operative day 9 and step down care to surgical ward on day 10. On post-operative day 20, the tracheostomy was removed and discharged home on day 25 of surgery. Histopathological examination confirmed a thymolipoma (Figure 4). There was no limitation in the activities of daily living at 6 months follow up.

Figure 2: Intraoperative picture of the tumour as it was removed out from the thoracic cavity and placed just below the thoracotomy wound.

Figure 3: A: Good surgical exposure in a clamshell thoracotomy. B: The clamshell wound seen post closure with bilateral chest drains placed at the sides.

Figure 4: Histopathology slide of the tumour with haematoxylin and eosin stain, and 20x magnification. Mature adipose and thymic tissue confirming the diagnosis.

Discussion

Thymolipomas are very rare cause of mediastinal tumors, with an incidence of about 0.12 cases per 100 000 per year [2]. These tumours are composed of mature adipose and thymic tissue arising from the thymus gland, accounting for 2-9% of all thymic tumours with no predilection to a specific sex or age group [3]. Albeit its rarity, it should be considered as a differential diagnosis for any anterior mediastinal mass with fat density. Patients present with subtle symptoms till the tumour grows to a large size causing compressive symptoms to the lungs and mediastinal structures. That could be the cause for this patient to present late till he had a bout of pneumonia leading to respiratory distress and imaging workup revealing his mediastinal lesion.

Thymolipoma grow slowly till they reach large size. Chest x-rays are usually misinterpreted for various causes and likewise in this patient was diagnosed for a massive pleural effusion [4]. A CECT scan of the thorax differentiated the lesion for a fat density tumour, which could have been a lipoma, thymolipoma, epipericardial fat pad or even a teratoma. A surgical biopsy will determine if the lesion is malignant and a more conservative and palliative approach may have been decided instead of performing a major surgery like this.

Surgical resection of thymolipoma can be accomplished via various methods. The method of access for resecting such tumours must be tailored to the tumour size and the structures it encompasses. The incisions are sternotomy, anterolateral thoracotomy, clamshell incision or sternotomy accompanied by anterolateral thoracotomy, hemiclamshell, and even thoracoscopic approaches have been employed [5,6]. In this patient, clamshell thoracotomy was decided as his tumour was involving both hemithoraces compressing nearly 90% lung parenchyma extending down to bilateral costo-diaphragmatic recesses [7]. A clamshell incision will enable total control of the bilateral hilum if the need arises while handling huge tumor like this. Hence this approach is safe and confers a good access to the upper as well lower parts of the thoracic cavity [8].

Conclusion

Thymolipoma is a benign tumour with good prognosis and outcome if careful planning and proper surgical resection is performed. Clamshell thoracotomy provides an excellent surgical field for safe resection of huge mediastinal tumours.

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