CASE REPORT

A Rare Case of Middle Mediastinal Thymoma Mimicking Left Lower Lobe Lung Tumor

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Introduction

Thymomas are usually found in the anterior mediastinum and rarely in the middle mediastinum[1]. We present a rare case of middle mediastinal thymoma. A 47-year old man presented with chronic cough and left sided chest pain. Investigation revealed a left lower lobe lung tumor. However, during thoracotomy a mass originating from the middle mediastinum was noted and was totally removed. The patient recovered uneventfully.

Histology showed a malignant thymoma with complete invasion of capsule and into the pericapsular fatty tissue. He was referred to oncology for further management.

Case Report

A 47-year old Malay man presented in October 2002 with complaints of left sided chest pain radiating to the back, mild unproductive cough and shortness of breath. There was no hemoptysis, night sweats or recent history of loss of appetite or weight. He had no palpitations, sweating or diarrhea. He had hypertension and gout for 3 years and was medically treated. He smoked cigarettes occasionally. He was initially treated empirically for pneumonia in several medical clinics without success and subsequently referred to Hospital University Kebangsaan Malaysia (HUKM) for further management.

On examination, he was comfortable with stable vital signs. Chest examination revealed reduced air entry at bases, reduced vocal fremitus and dullness to percussion on the left side. Examination of the cardiovascular system was normal.

Chest x-ray showed a lobulated left lower zone mass. CT Thorax showed left lower lobe lung tumor with a single nodule in the apicoposterior segment of right lower lobe suggestive of metastatic focus. CT Brain and bronchoscopy were normal. He had a CT guided needle biopsy of the left lower lobe mass which was inconclusive; indicating either a benign stromal or carcinoid tumor.

After consultations it was decided the best option would be to do a wedge resection of right lung lesion and wait for histology before proceeding further. In March 2004 he underwent right mini thoracotomy and a wedge resection of 3cm rim of lung tissue from posterior part of right lower lobe.

Histopathology, however, showed no evidence of tumor. In October 2004, he further underwent a left thoracotomy under one-lung anesthesia. Unexpectedly, a large lobulated mass attached to a pedicle originating from the middle mediastinum was noted. The mass was densely adherent to the tracheal surface, the left main stem bronchus, pericardium and had fibrous attachments to the aortic-pulmonic window. It was solid, well encapsulated and moderately difficult to excise. No other lung masses were palpated. There were no intra or post-operative complications. He was discharged well after three days.

The resected specimen was a dumbbell shaped mass measuring 10.0 x 7.5 x 5.0cm. The capsule was smooth and shiny with multiple dilated veins. Cut surface showed two prominent solid tumor nodules measuring

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7.0cm and 6.0cm in diameter. No areas of necrosis were seen. Microscopically it was composed of epithelial and lymphoid components. The epithelial cells were fairly uniform, with spindle shaped neoplastic cells arranged in sheets and cribiform pattern were evident. The lymphocytes were small and found to have round to oval nuclei with dense chromatin. A few mitotic figures were also noted. Foci of tumor cell clusters showing complete invasion of the capsule and into the pericapsular fatty tissue were also noted. The neoplastic cells showed positivity towards CK and CEA antigen markers. The lymphocytes were positive for CD3 and CD20 receptors. These findings were consistent with type AB (mixed thymoma) of WHO classification. The pathologic staging was stage II based on Masaoka staging system.

Discussion

Thymomas occur most frequently in the anterior mediastinum (75%), both anterior and superior mediastinum (15%), mainly superior mediastinum (6%), posterior mediastinum and neck (4%). Based on our literature review, middle mediastinal thymoma has rarely been reported[1,2].

Thymic epithelium originates from third pharyngeal pouch and progresses caudally to join with the other side to produce a bilobed thymus gland. Ectopic thymus occurs due to failure of this migration. Sometimes it is found in the retroinnominate vein area and the adipose tissue surrounding the thymus often in continuity with hilar and pleural adipose tissue.

Most of the reported cases of middle mediastinal thymoma were asymptomatic. However, our patient presented with cough and chest pain which was most likely due to compression of left bronchial tree and left lower lobe. Symptomatic cases are more likely to be malignant in nature. In our case, pre-operative needle diagnosis was attempted but did not produce the correct diagnosis. Fine needle aspiration cytology is considered inferior to a larger mass in the diagnosis of a mediastinal mass. If the diagnosis of thymoma is suspected on imaging studies, surgery is normally undertaken without pre-operative diagnosis[3,4].

Complete surgical excision with surrounding mediastinal fat remains the mainstay of treatment for thymoma. In our case due to the misleading presentation, a left thoracotomy was performed but we were able to remove the tumor completely. However, due to microscopic invasion to the capsule and surrounding fat the patient was referred to the oncology service for post-operative radiotherapy. Based on the Memorial Sloan Kettering Experience survival for stage II thymoma is 90% at 5 years and 80% at 10 years[5].

Relapse after primary therapy for thymoma may occur after 10-20 years, therefore, follow–up should continue throughout the patient's life.

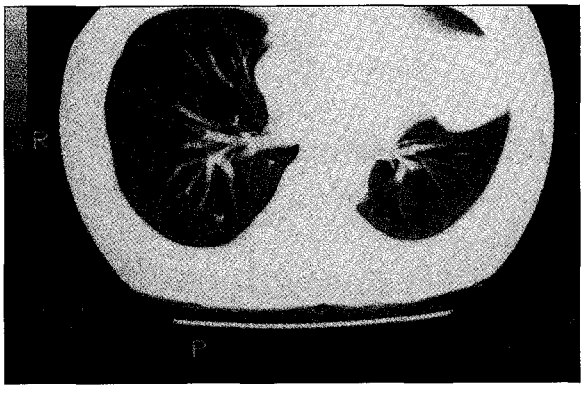

Fig. 1: CT Scan showing, mass appearing like left lower lobe tumour

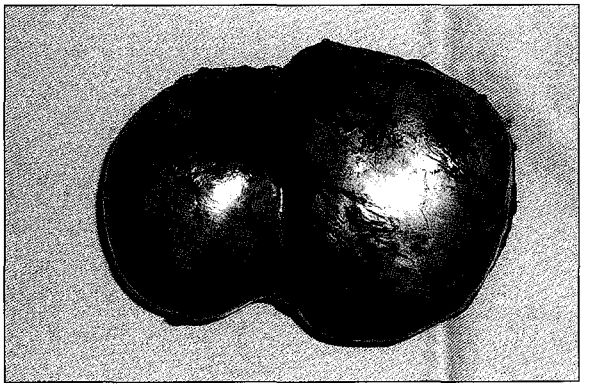

Fig. 2: Dumb bell shaped thymoma

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