Carcinoma Lung Presenting as Sternal Mass- An Unusual Presentation

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ABSTRACT

Tumours of sternum are very rare. A 60 year old man presented with painless sternal mass of 3 months duration without any respiratory illness. On CECT scan besides sternal mass there was an intra pulmonary mass on left side, on biopsy both the lung mass and sternal mass revealed adenocarcinoma of lung with metastasis. Lung carcinoma presenting as sternal mass without respiratory symptoms is quite unusual and rare.

Key words: bronchogenic carcinoma, Tumours of sternum, metastasis

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INTRODUCTION

Lung cancers frequently present with bone metastasis. The bone involvement is either by direct extension through adjacent vertebra or ribs or by metastasis. The incidence of bone metastasis in lung cancers ranges from 10-40%.The bones commonly involved are vertebrae 70%, pelvis 40% and femora 25%[1].

Sternum is quite unusual site of metastasis from lung cancer. Though the primary tumours of the sternum are uncommon, most of them are malignant that include Chondrosarcoma, Lymphoma, plasma cell myeloma and skeletal metastasis.

CASE REPORT

A 60 year old male presented with painless mass in the sternum of 2months duration. There was no history of cough, shortness of breath, fever or hemoptysis. On clinical examination 3 to 4cm sized non pulsatile mass arising from anterior chest wall was noted (Figure 1).

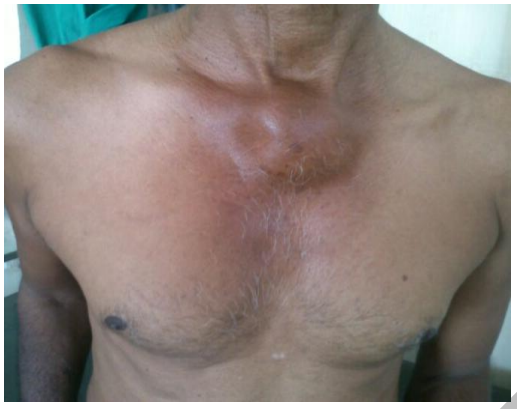

Figure 1: Clinical photograph of the patient depicting sternal mass

Routine laboratory investigations were normal. Chest Radiographs (PA and Lateral) reveal widening of superior mediastinum, retrosternal soft tissue mass with sternal erosion and small left pleural effusion. Right lung and heart normal (Figure 2).

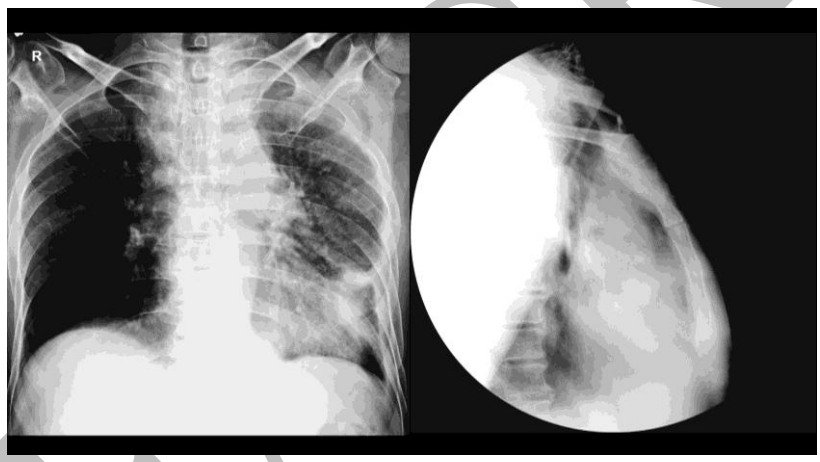

Figure 2a and 2b: Chest radiograph AP and Lateral views showing widened superior mediastinum, small left pleural effusion and sternal erosion with soft tissue mass.

High resolution ultrasound of the sternal mass showed heterogenous lesion with increased vascular flow (Figure 3).

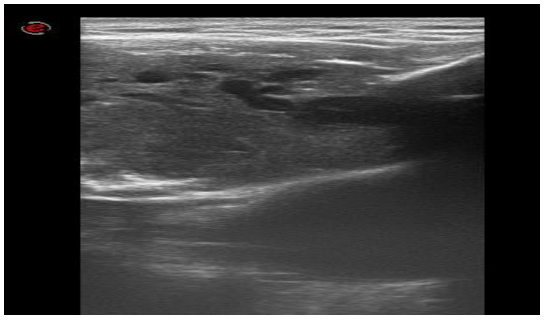

Figure 3: Ultrasound of sternum showing large hypoechoic heterogenous mass

On Non contrast and Contrast enhanced CT there was a mildly enhancing well defined mass measuring 4.4 × 3.9cm was noted in the left upper lobe. There was moderate left sided pleural effusion with associated pleural based nodules. Manubrium sternum was enlarged showing gross destruction with intralesional osseous matrix. A few enlarged peritracheal lymph nodes also noted. The rib cage and spine show no abnormality (Fig.4a&b) (Fig.5a&b).

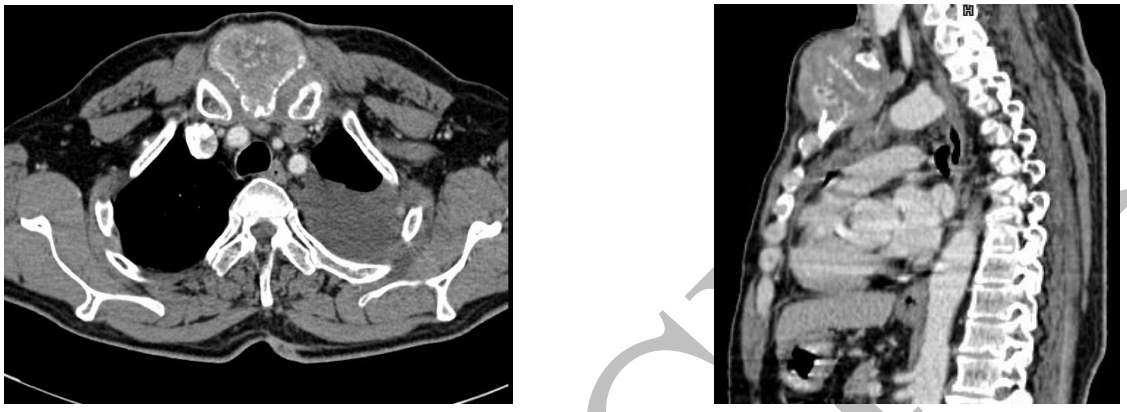

Figure 4a&4b: CECT Thorax showing expansile lytic lesion of sternum with enhancing soft tissue mass

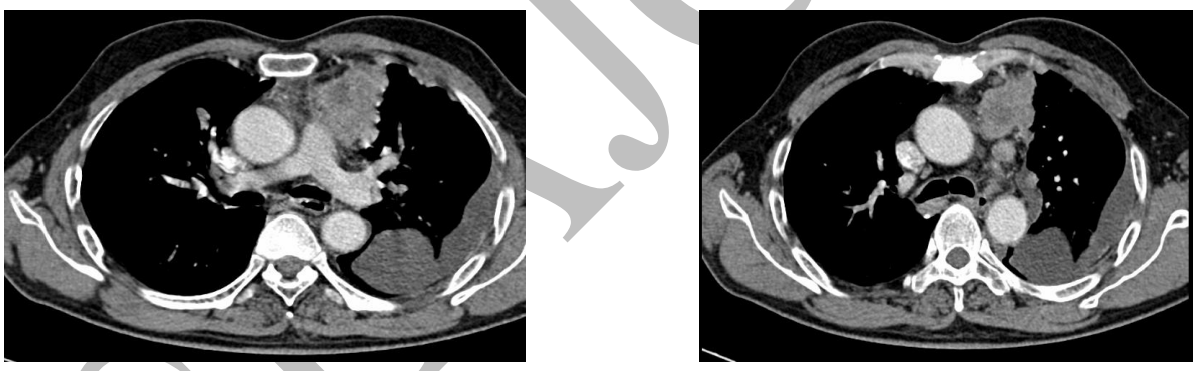

Figure 5a & 5b: CECT thorax showing left upper lobe bronchial mass with pleural effusion and enlarged mediastinal lymph nodes

FNAC and CT guided biopsy from the lung mass and sternum revealed clusters of cells with scant cytoplasm, hyperchromatic nuclei and nuclear pleomorphism suggesting Adenocarcinoma lung with metastasis

DISCUSSION

Primary bone tumour of sternum is very rare (0.6%).There are several types of sternal masses: primary tumours, 1% (chondrosarcoma, osteogenic sarcoma, Ewing's sarcoma) metastatic tumours, 60-70% (breast,lung,kidney,thyroid) direct invasion 5-10% (lymphoma, bronchogenic carcinoma) and benign tumours 2-

3%(osteomyelitis, sternal fractures with hyperostosis, eosinophilic granuloma.)

The sternal metastases are usually caused by hematological dissemination or by direct extension due to parasternal lymph node involvement. Sternal metastases remain solitary confined to sternum as it does not have contact with paravertebral venous plexus unlike, vertebral metastases which show multicentric lesions

Bone metastasis is relatively frequent site of extra thoracic metastasis from bronchial carcinoma. Bone scintigraphy, though highly sensitive in detecting the metastasis has a high false positive rate and should be advised only in patients with symptoms suggesting bone metastasis.MRI is very sensitive and specific for diagnosing skeletal metastasis but is not cost effective[2]. Most of the bone metastasis are osteolytic, sometimes osteoblastic lesions can be seen. The cell type that presents with bone metastasis are either adenocarcinoma or small cell carcinoma and there may be associated bone marrow involvement. Bones commonly involved are vertebra, pelvis, femora. Sternal involvement as metastasis is extermely rare[1]. Bronchogenic carcinoma presenting as sternal mass has already been reported in the literature[3,4,5]. Toussiret[6] reported a case of bronchogenic carcinoma as initial presenting feature of sternal deposit in a review of 10 cases. In the present case the sternal mass was seen separately without any extension from the adjacent upper lobe lung tumour. The sternal mass was the main presenting feature and the patient did not have any respiratory symptoms. The treatment methods include surgery, radiotherapy and chemotherapy basing on the extent of tumour.

CONCLUSION

In the investigation of sternal masses metastasis from lung cancer has to be strongly considered.

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