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A Rare Case of Isolated Pleural Metastasis of Osteosarcoma

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INTRODUCTION

Osteosarcoma is the most common primary bone tumor in children and young adults arising from primitive mesenchymal bone-forming cells. Metastasis from osteosarcoma is most commonly to lungs, bone, brain and other organs. [1,2]. Classic osteosarcoma represents about 15% of all biopsy-analyzed primary bone tumors.[3] It is the third most common type of neoplasia, preceded by leukemia and lymphoma among older children and adolescents aged 12 to 18 years. [4].

Plain Radiograph

Conventional radiography continues to play an important role in diagnosis. Typical appearances of conventional high grade osteosarcoma include medullary and cortical bone destruction, wide zone of transition, moth-eaten appearance and aggressive periosteal reaction.

Computerized tomography scan CT scan delineates the bony anatomy/architecture like cortical integrity more clearly and is helpful in assessing ossification and calcification. However, the soft tissue component and medullary extent is best defined by an MRI.

Demonstration of osteoid directly formed by the malignant cells in histopathology is essential for making the diagnosis of osteosarcoma.

Although the exact cause of osteosarcoma is still unknown, defects in RB and p53 genes play an important role in the process. Patients with germline mutations in RB have approximately 1000-fold increased risk of osteosarcoma and similarly patients with Li-Fraumeni syndrome.

CASE REPORT

A 27 YR old male patient diagnosed with osteosarcoma of left leg, presented to chest and TB OPD with complaints of low grade fever x 10 days, SOB, swelling over left side of chest with chest pain x 2 months and significant weight loss (15 kg in 1 month).

ON GENERAL PHYSICAL EXAMINATION

Patient was asthenic and pale. On percussion Dull notes were there and on and auscultation breath sounds were decreased on left side. On CBC RBC count was reduced while TLC was normal.

ON RADIOLOGICAL EXAMINATION

On X Ray Chest:- Massive pleural effusion was suspected. Pleural tapping was tried but was negative.

On Chest USG:- A well defined soft tissue density with internal calcifications and multiple thick septations is seen in left hemithorax with collapse of left lung.

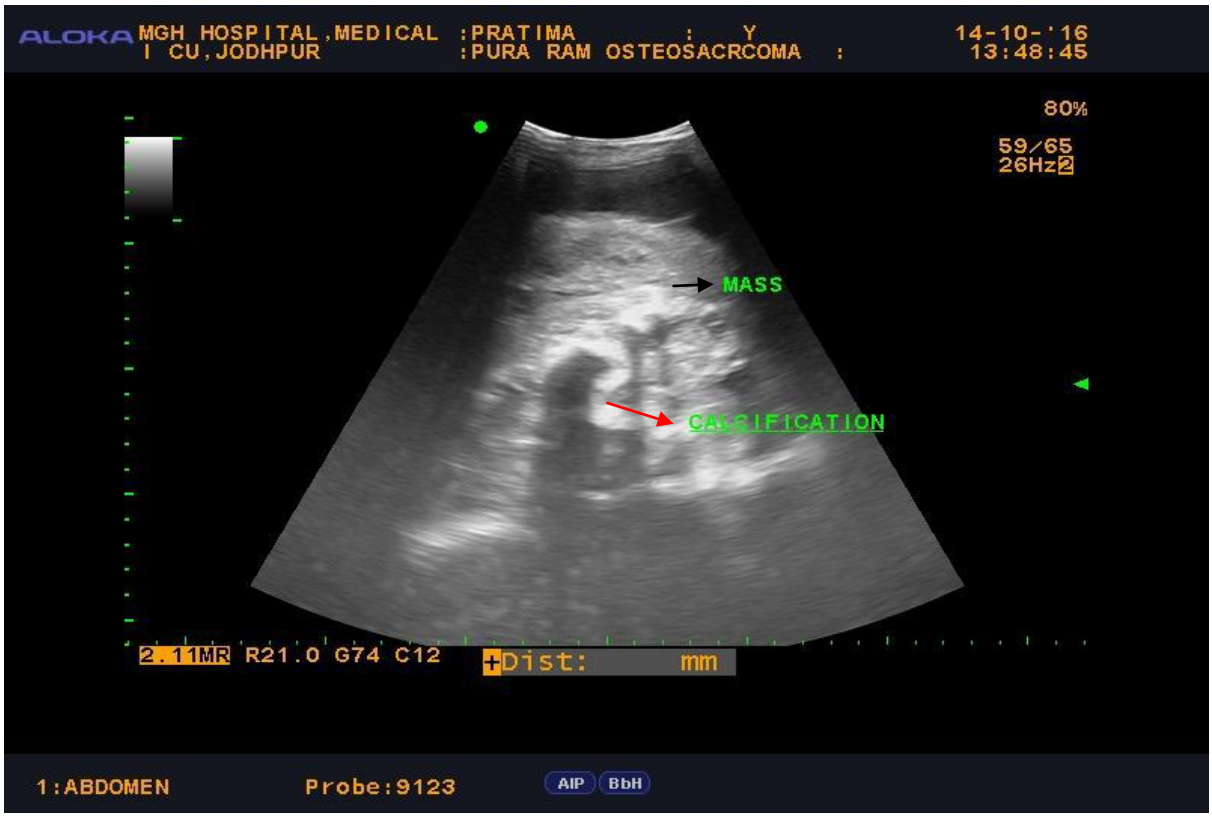

Fig.1 Chest USG showing echogenic lesion (black arrow) and calcification (red arrow).

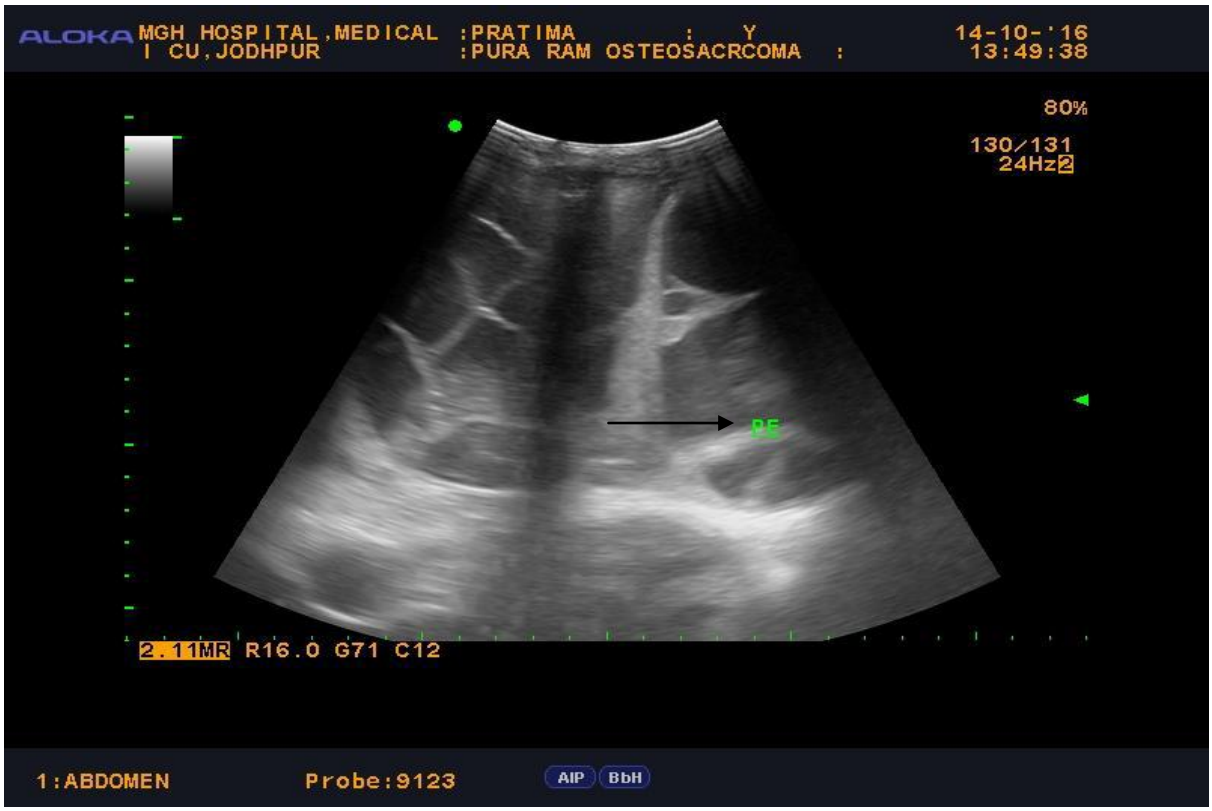

Fig 2. Chest USG showing septated pleural effusion(black arrow)

On CECT Chest **:-**Well defined well marginated mass lesion having internal soft tissue density as well as fluid density in it with peripheral calcification and internal multiple linear and rounded calcifications (sunburst calcification) in soft tissue component, noted occupying almost complete left hemithorax. The soft tissue density component of mass is pleural based along left lateral lower costal pleura extending from left 6th to 11th rib, showing mild enhancement on post contrast study and measuring 30 x 19 x 12.6 cm (CC x AP x TD).There is collapse of left lung with mediastinal shift towards right.

Fig 3. CECT chest arterial phase axial reconstruction showing well defined mass lesion having internal soft tissue density (black arrow) as well as fluid density (white arrow) in it with peripheral calcification.

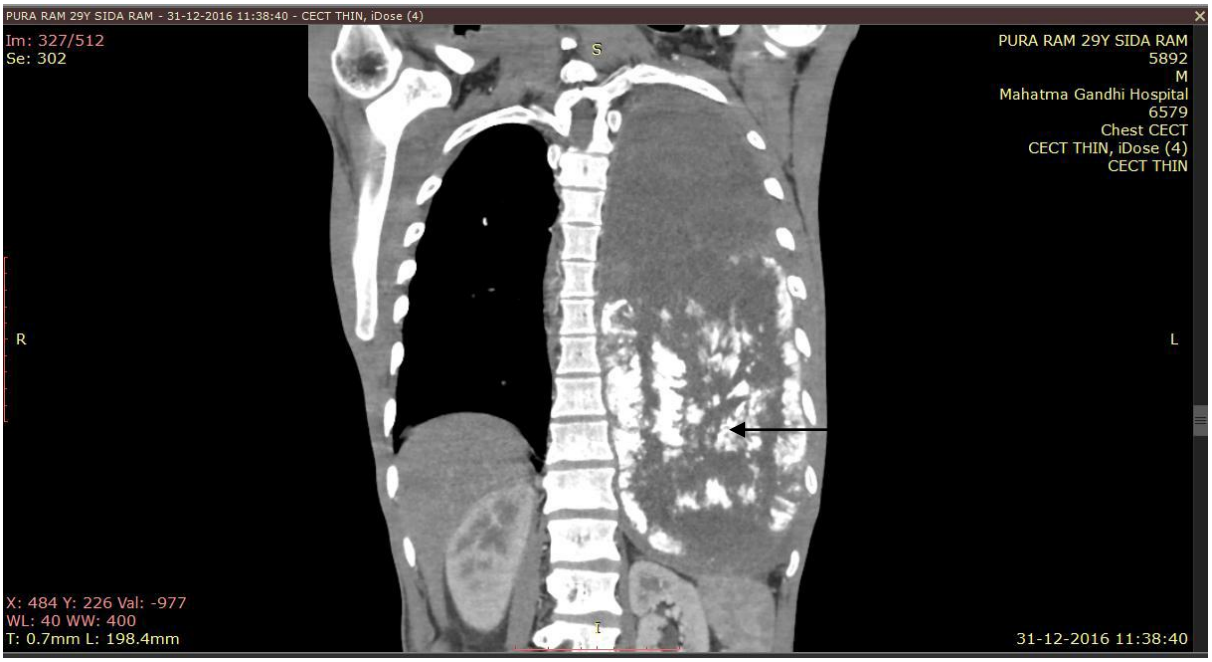

Fig 4. . CECT chest arterial phase coronal reconstruction showing well defined mass lesion occupying left hemithorax having sunburst calcification(black arrow)

Fig 5. CECT chest arterial phase, axial reconstruction showing mediastinal shift towards right (white arrow)

DISCUSSION

In our case patient was having osteosarcoma of left leg with metastasis to the left parietal pleura which presented as large mass with calcifications. After CECT chest findings the pleural mass was resected and biopsy of the mass was carried out. On biopsy, metastatic pleural lesion suggested. Presently the patient is on chemotherapy.

In literature, only few cases of isolated pleural metastases and been reported one of which is 18 year old woman with osteosarcoma of the left humerus presenting with shortness of breath. Imaging of the lungs revealed pleural effusion and calcification of the case of an left pleura[5].

At presentation, 80% of the patients with osteosarcoma have localized disease at presentation and 10% have distant metastasis [6]. Osteosarcomas show a dramatic response to treatment. Approximately 25-30% of the tumours recur after treatment.[7] The lung is the most common site of initial recurrence after treatment. Isolated pleural metastasis in patients with osteosarcoma is rarely reported. Pleural metastasis in patients with osteosarcoma may occur due to two reasons: (1) Due to direct contact of pleura with the lungs and (2) hematogenous spread of osteosarcoma.

Chemotherapy using multiple drugs, called combined chemotherapy, followed by surgery to remove as much of both the primary and metastatic cancer as possible, may be the most promising treatment for metastatic osteosarcoma. [8]. As localized pleural tumor can be removed surgically with better prognosis, pleural cavity should be looked into carefully in every patient of osteosarcoma

In conclusion, we want to report the case as isolated pleural metastasis in osteosarcoma is rare.

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