ORIGINAL RESEARCH PAPER
Volume - 9 | Issue - 9 | September - 2020 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

PRIMARY CHONDROBLASTIC OSTEOSARCOMA OF RIB- AN UNUSUAL PRESENTATION OF USUAL BONE TUMOUR IN ADULT.

Radiology

Dr. Aditi Gandhi Assistant Professor, SCL Hospital, NHL Medical college

Dr. Jigar Chaudhary* 3rd year resident, NHL Medical college *Corresponding Author

Dr. Jivnesvari Rajat (2nd year resident, NHL Medical college

ABSTRACT

Introduction- Osteosarcoma are the most common primary malignant bone tumour exclusive of multiple myeloma, principally arises in metaphysis of long bones of children and adolescent. Rarely, tumour may arise in flat bone, and rib involvement is very infrequent.

Case report- we reported a rare case of primary chondroblastic osteosarcoma in 35 year old female present with rapidly growing mass over chest wall without associated history of any trauma. Radiological imaging suggest diagnosis of chondroblastic osteosarcoma, subsequent HPE correlation confirmed the same.

Conclusion- Osteosarcoma though common tumour arising from long bones, can arise from flat bone like ribs. Main modality of treatment is surgical excision followed by adjuvant systemic chemotherapy with high cure rates.

KEYWORDS

Primary chondroblastic osteosarcoma, ribs, Chemotherapy

INTRODUCTION

Primary osteosarcoma is one of the most common malignant bone tumours. It most commonly affects long bones in children and adolescents. They arise in metaphysis of long bone mainly lower end of the femur and upper end of tibia. (1) Other bones that may be affected are sacrum, pelvis, mandible, maxilla, scapula, clavicle and ribs, however the incidence is less frequent. (1, 2, 3)

Primary Chondroblastic osteosarcoma of rib in adult is very rare. We present such rare case of Chondroblastic osteosarcoma in 35 year old female which posed a diagnostic difficulties due to its unusual location.

Case report

A 35 year old woman presented with a 5 year history of slow growing mass over chest wall on right side. According to the patient, there was rapid increase in size of lump noted in last six months. There was no history of trauma or pre-existing bone lesion. There was no history of weight loss, cough, dyspnoea or fever.

Physical examination a large mass in right hemithorax measuring approximately 12x9 cm. The mass was bony hard in consistency and separately palpable from overlying breast parenchyma.

A chest radiograph showed homogeneous opacity in right lower lung field as shown in (Figure 1).

Computed tomography (CT) scan of thorax was done which demonstrated lobulated calcified mass arising from right 5th rib (Figure 2). Lesion had a large soft tissue component associated as well which displaced right breast parenchyma supero-laterally without infiltration. Presumed diagnosis was either Chondrosarcoma or Osteosarcoma.

Needle core biopsy was performed which showed spindle cell proliferation and mature bony trabeculae with mild pleomorphism, so possibility of ossifying fibroma or fibromatosis infiltrating bone was given. However possibility of underlying osteosarcoma could not be ruled out.

Therefor subsequent J needle biopsy was performed which demonstrated Osteosarcoma, Chondroblastic type with evident areas of fibroblastic component. (Figure 3).

Staging work up was normal. There was no evidence of lung metastasis on CT thorax imaging.

An en bloc resection of mass was performed with wide excision of involved rib followed by chest wall reconstruction. Patient was started on adjuvant chemotherapy consisting of doxorubicin and cisplatin.

At present, she is doing well and on regular follow up.

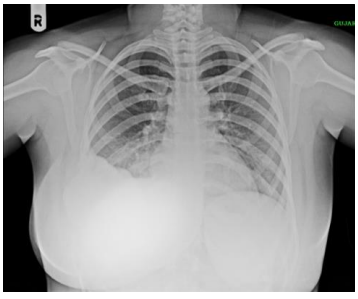

Figure 1 Chest X-ray demonstrating lobulated opacity in right lower hemithorax.

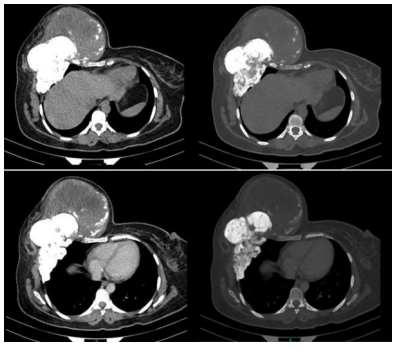

Figure 2 Axial CT scan image demonstrating dense calcified mass centred on right 5th rib with adjacent soft tissue component.

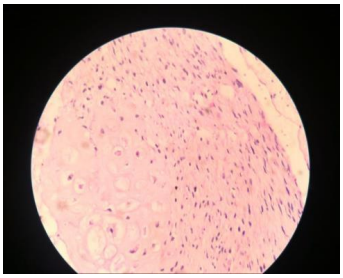

Figure 3 Histopathology slides demonstrating malignant appearing cartilage with peripheral spindling and osteoid production.

DISCUSSION

Primary osteosarcoma arises most commonly from metaphysis of long bones. Distal end of femur and proximal end of tibia are most common involved sites. Approximately 10% of osteosarcoma arises in flat bones in which pelvis is the most common site. Osteosarcoma arising from rib is less frequent and mainly involves paediatric population. (4-6)

Chondroblastic osteosarcoma arising from rib in adults is a rare occurrence and only few cases have been reported in literature. This tumour has comparatively better prognosis then conventional osteosarcoma. Treatment with wide excision and adjuvant chemotherapy provides very good prognosis. Therefore survival of these patients depend on accurate diagnosis of these tumours radiologically, pathologically and surgically.

The typical features of conventional osteosarcoma is not present in low grade osteosarcoma of flat bones. (7) Due to varying in radiological appearance of these tumours, they can be confused with other tumours like fibrous dysplasia, desmoplastic fibroma or even chondrosarcoma. According to some authors, osteosarcoma should be suspected when there is a mass centered on rib with dense calcification. (8)

Diagnosis of this tumour by small biopsy often gives false results and multiple biopsies and sometimes excisional biopsies are required. (9)

Possibility of distant metastasis in flat bone osteosarcoma is very low however it should be ruled out by performing computed tomography scan of thorax, bone scan and ultrasound abdomen & pelvis.

After excision of the tumour, post-operative adjuvant chemotherapy improves survival in these patients. Adjuvant chemotherapy reduces risk of local and distant recurrence of the lesion. Doxorubicin and cisplatin are chemotherapeutic agents used for the treatment. (10)

Our patient underwent wide local excision and received post-operative adjuvant chemotherapy for 6 cycles & currently doing well 9 months after surgery.

In conclusion, this case highlights the fact that primary osteosarcoma should be included in the differential diagnosis in patients presenting with chest wall tumour. With careful histological examination, wide local excision and adjuvant chemotherapy, outcome in these patients is encouraging.

Financial support and sponsorship
Nil.

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