



Chondroblastic Osteo Sarcoma of Mandible: A Rare Case Report

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ABSTRACT

Osteosarcoma is a malignant aggressive tumour with slow growth rate & formation of osteoid by the tumour cells. Their occurrence in maxillofacial region is extremely rare. Although exact etiology is not known, previous radiotherapy, Pagets disease, Retinoblastoma and fibrous dysplasia are considered as attributable etiological factors. Here we present a case of chondroblastic osteosarcoma of mandible in 80 year old lady patient with the clinical, radiographic and histological findings. The patient underwent hemi mandibulectomy and radiotherapy.

Keywords: Osteosarcoma, Chondroblastic, Mandible.

INTRODUCTION

Among all the bone tumours Osteosarcoma is the second most common primary malignant tumour and is commonly seen in long bones 42% in femour, 19% in tibia, and 10% in humerus. Skull and jaw bones are involved in 8% cases, rest 8% are found in pelvis.^[1,2] Osteosarcoma is a malignant aggressive tumour which is very rare in jaws and is identified by formation of osteoid tissue. Age of occurrence is usually 3rd and 4th decade of life.^[1] Tumour cells in Osteosarcoma can produce bone, cartilage or fibrous tissue as extracellular matrix depending on this it can be classified as osteoblastic, chondroblastic and fibroblastic osteosarcoma.^[1,3] Osteosarcomas in jaws when compared to long bones have some differences like, occur at much older age group, survival rate is longer, metastasis is rare and control of local reoccurrence is very difficult.^[4,5] Mandible is involved more commonly than the maxilla. When

mandible is involved descending order of occurrence frequency includes body, symphysis, angle and ramus. When maxilla is involved order of frequency in descending order is alveolus, maxillary sinus and pre maxilla. Frequent subjective complaints for lesions in mandible are painful facial swelling, paresthesia of cheek or face, tooth ache and loose teeth. For lesions in maxilla apart from above complaints patients will have nasal obstruction and epistaxis.^[6] Radiological features of this lesion include mixed radiolucent & radio opaque appearance, periodontal widening, radio opaque mass with moth eaten appearance, codman triangle and sunburst appearance.^[1,7]

Case report:

An 80 year old lady patient reported with a complaint of swelling in left lower jaw since 4-5 months. Swelling was painless and was slow growing but

patient noticed since one month the swelling was growing faster and became painful [Fig 1]. Pain was continuous, non radiating and throbbing in nature. Patient did not give any history of trauma or tobacco related habits. Upon intra oral examination patient was edentulous. Left mandibular alveolus was enlarged from midline till angle of mandible. Overlying mucosa was intact and there was no change in colour. Extraoral examination revealed huge diffuse swelling of left half of mandible with intact skin. However the skin was shiny and tense. On palpation the swelling was firm to hard and tender. Medical history was non contributory. CT examination of mandible showed enlarged mandible on left side from midline till mid ramus. The enlargement was associated with radiolucent and radio opaque appearance [Figure 2]. Clinical and radiographic examinations were in favour of fibro osseous lesion. Intra oral incisional biopsy was performed, tissue was sent for Histopathology.

Histopathology: Sections from the tumour showed predominantly cartilaginous element [Figure 3] with foci of malignant osteoid (Osteoid rimmed by malignant cells) [Figure 4&5]. Foci of tumour necrosis and calcifications were also noted. Tumour was infiltrating through the mandible into surrounding soft tissue and was causing ulceration of overlying alveolar mucosa. Based on these morphological features a diagnosis of Osteogenic Sarcoma of left mandible was made.

Following final diagnosis left hemimandibulectomy was performed and patient was subjected to radiation [Figure 6].

Discussion:

Frequency of occurrence of osteosarcoma in maxillofacial region is 1/1,00,000 person per year.^[1,8] Osteosarcoma may arise as a sequelae of radiation or it may arise De novo. It is also found in existing paget's disease of bone and fibrous dysplasia. Osteosarcoma in maxillomandibular region is invariably osteoblastic type, with deposition of osteoid matrix.^[1,3,8] Histologically our case was chondroblastic variant of osteosarcoma. Diagnosis of the tumour at an early stage & wide local excision plays important role in prognosis of maxillomandibular osteosarcomas.^[9] Treatment of choice for osteosarcoma in jaw bones is radical surgery.^[9] Surgical resection is usually followed by

radiotherapy or chemotherapy. It is challenging to get free surgical margins in maxillofacial regions due to difficult anatomy. For this reason 33 to 39% recurrence is present. Surgical margin free of tumour, chemotherapy with multidrugs and radiotherapy play vital role in prognosis of osteosarcoma.^[9,10] Slootweg and muller found that treatment outcome and prognosis is better in older patients due to increased resistance to tumor.^[4] Histologic diagnosis of chondroblastic osteosarcoma is quite difficult by differentiating it from other tumors like chondroma, chondromyxoid fibroma, chondroblastoma, and chondrosarcoma. Other clinical and radiographic differential diagnosis includes ewings sarcoma, metastatic tumors, fibrous dysplasia and osteomyelitis.^[11] Metastasis to regional lymph nodes is very rare so neck dissection is usually not done.^[6]

In our case, the tumor was diagnosed and surgical treatment was provided with hemi mandibulectomy followed by radiotherapy.

References

1. Shubhangi Kedar, Smita Nagle, Saurabh Agarwal, Sunita Bage, Amey Kothekar, Rohini Kashide et al. Giant Chondroblastic Osteosarcoma Mandible - A Rare Case Report. Otolaryngology 2013;3:146.
2. Ottaviani G, Jaffe N. The epidemiology of osteosarcoma. Cancer Treat Res. 2009;152:3-13.
3. Bennet J.H, Thomas G, Evans AW, Speight PM. Osteosarcoma of the jaw: A 30- yr retrospective review. Oral Surg Oral Med Oral Pathol Oral Radiol Endod. 2000;90(3):323-32.
4. Khadse Smita Vasudeo. Chondroblastic Osteosarcoma of Jaw Bone. Journal of case reports 2013; 3(2):480-484.
5. Meredith August, Patrick Magennis, Duane Dewitt. Osteosarcoma of the jaws: factors influencing prognosis. Int J Oral Maxillofac Surg. 1997;26:198-204.
6. Bruce M Wenig, Atlas of Head and Neck pathology, 2nd ed. Philadelphia: Saunders/Elsevier; 2008: 633-637
7. Joseph Meina Diagnosis & treatment. Philadelphia: Lippincot; 1980 Osteo.

8. Chindia ML, Guthua SW, Awange DO, Wakoli KA, Osteosarcoma of the maxillofacial bones in Kenyans. *J Craniomaxillofac Surg.* 1998;26(2):98-101.
9. Sukumaran Anil, Anitha P. Krishnan, and R. Rajendran. Osteosarcoma of the Mandible Masquerading as a Dental Abscess: Report of a Case. *Case Reports in Dentistry*, 2012, Article ID 635062, 5 pages, doi:10.1155/2012/635062
10. August M, Magennis P, Dewitt D. Osteogenic sarcoma of the jaws: Factors influencing prognosis. *Int J Oral Maxillofac Surg.* 1997;26:198–204.
11. Kusuma Venkatesh, Tushar Priyanka, Niveditha Shankaran Rukmini, Jagannath Bisanna. Chondroblastic Variant of Osteosarcoma of Mandible: Report of a Rare Case. *J Clin Diagn Res.* 2016 Aug; 10(8): ED12–ED14

Legends:

Fig 1: Pre operative patient with mandibular swelling.

Fig 2: CT scan showing involvement of left half of mandible.

Fig 3: H&E X 10X photograph showing chondroid differentiation.

Fig 4: H&E X 40X photograph showing nuclear atypia & mitosis.

Fig 5: H&E X 10X photograph showing osteoid.

Fig 6: Left Hemimandibulectomy

FIG 1



FIG 2

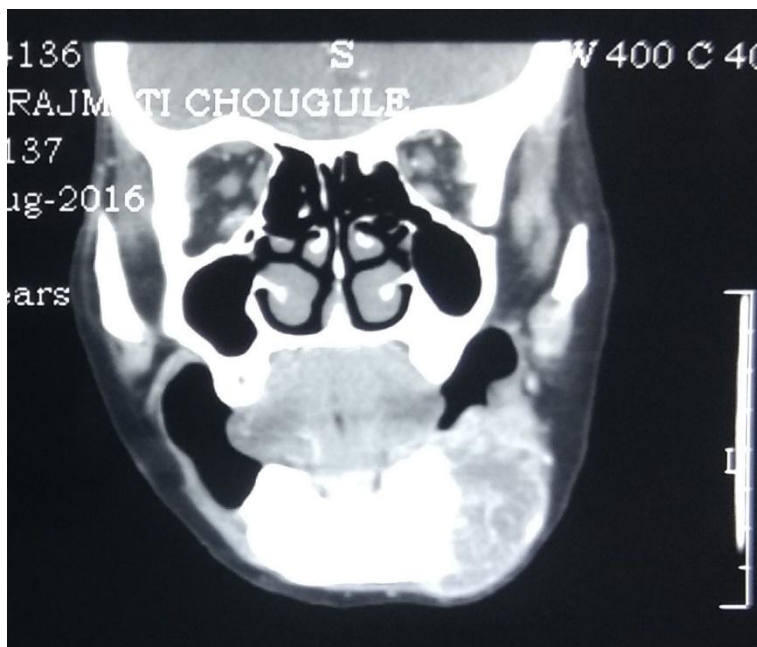


FIG 3

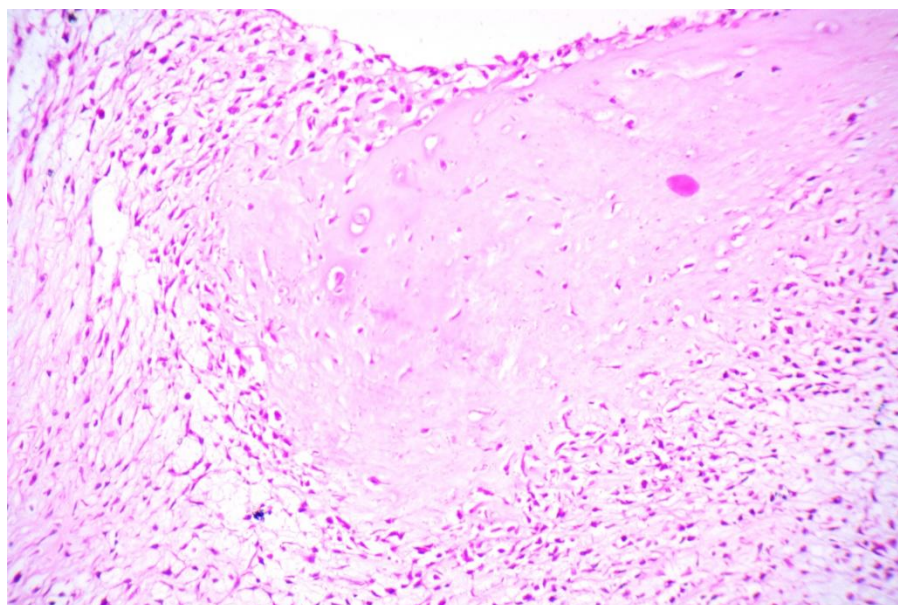


FIG 4

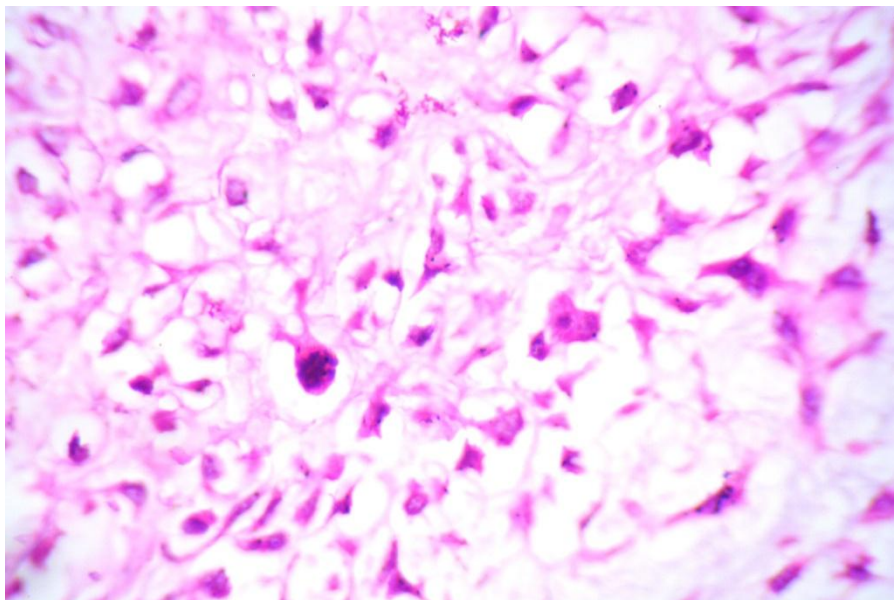


FIG 5

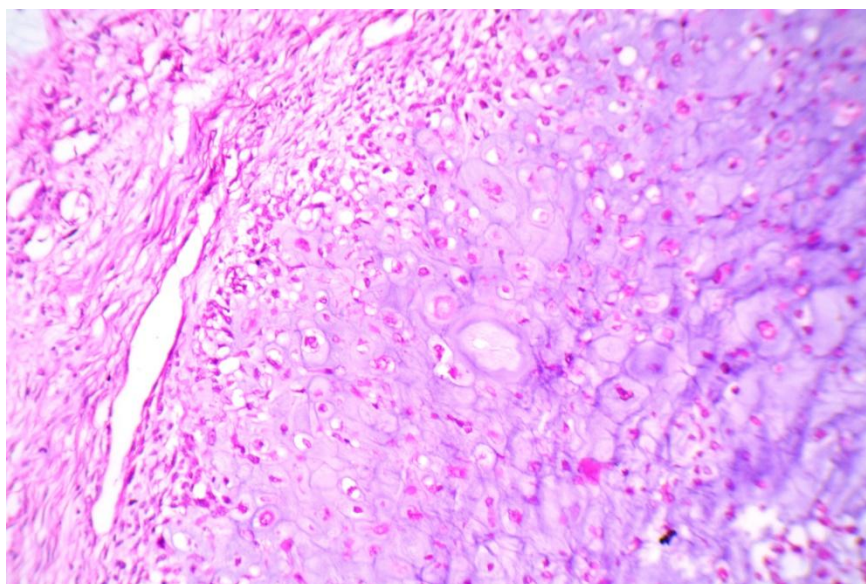


FIG 6

