

# CASE REPORT

## MANDIBULAR OSTEOSARCOMA

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### HISTORY:

**LOCAL EXAMINATION:** A diffuse swelling on right side of lower jaw measures 12 X 9 cm in size, skin over the swelling is erythematous but intact without any ulceration/sinus tract/fistula. Borders of the swelling are poorly demarcated.

On palpation, the swelling has firm-hard consistency, non-tender, non-fluctuant Non-compressible & non-reducible. Local rise of temperature noted.



**Intra Oral Examination:** An ulcero-proliferative exophytic growth present in the right side of oral cavity.

**Extension:** From Canine to 2nd molar tooth antero posteriorly.

From buccal sulcus to the floor of the mouth mediolateral, obliterating the buccal vestibule.

Borders of the lesions are poorly demarcated.

Teeth are displaced due to this lesion and are mobile.

Tongue is slightly shifted to left side

Floor of the mouth is raised on right side.



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## DIFFERENTIAL DIAGNOSIS:

AMELOBLASTOMA  
OSTEOSARCOMA  
EWING'S SARCOMA  
CHONDROSARCOMA  
FIBROSARCOMA  
FIBROUS DYSPLASIA  
BONE METASTASIS  
OSTEOMYELITIS

## INVESTIGATION RADIOLOGICAL :

OPG

AP view of skull

CECT

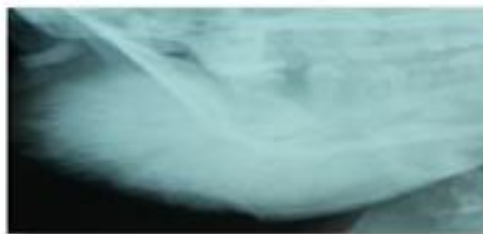
MRI

NON-RADIOLOGICAL :

Routine Blood Ix

Histopathology

OPG

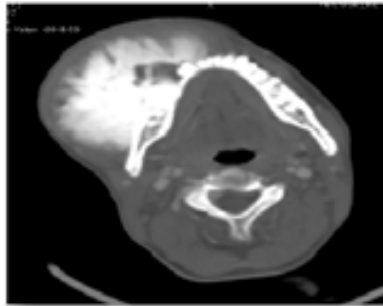
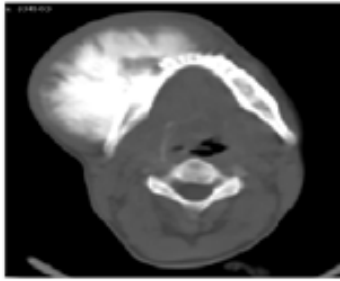


An ill defined sclerotic expansile lesion in right side of mandible causing cortical destruction with wide zone of transition and aggressive periosteal reaction. The lesion is displacing the adjacent teeth.

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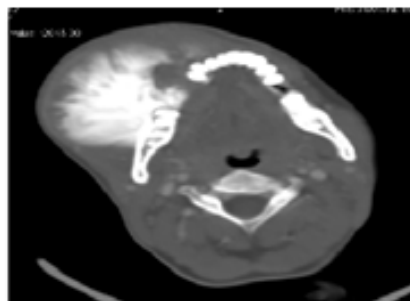
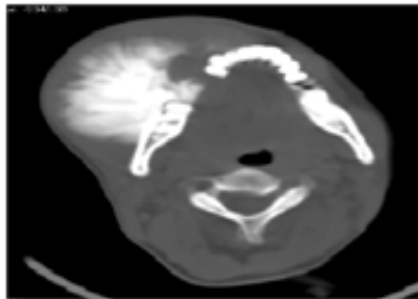
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## PLAIN & CONTRAST AXIAL CT



An ill defined hyperdense bony lesion with few lytic areas within it, arising from buccal surface of right ramus of mandible causing cortical destruction with typical “SUN-BURST” type of periosteal reaction. No enhancement in post-contrast image.

## PLAIN & CONTRAST AXIAL CT



Lower section shows destruction of the lingual surface of mandible as well

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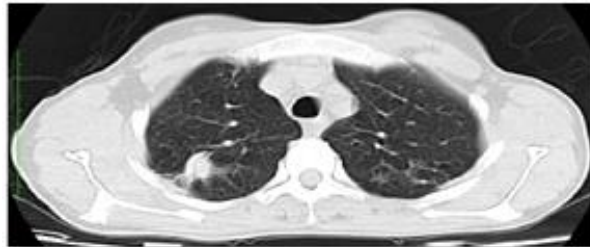


3D Reconstruction

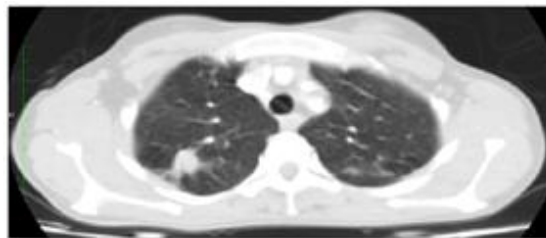


3D Reconstruction

## PLAIN CT CHEST



A hyperdense lesion noted in posterior segment of RUL with e/o fibrosis around it. There is also fibrotic area noted in posterior segment of LUL

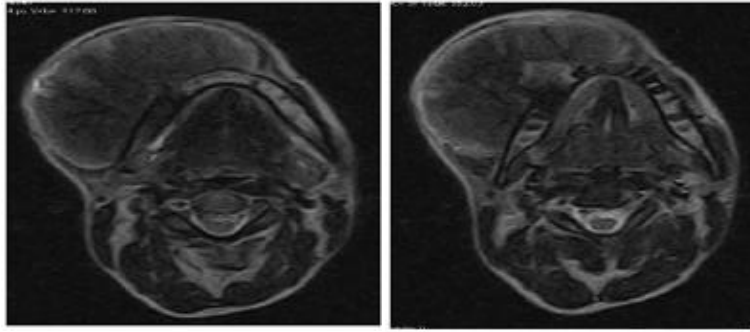


No evidence of post-contrast enhancement

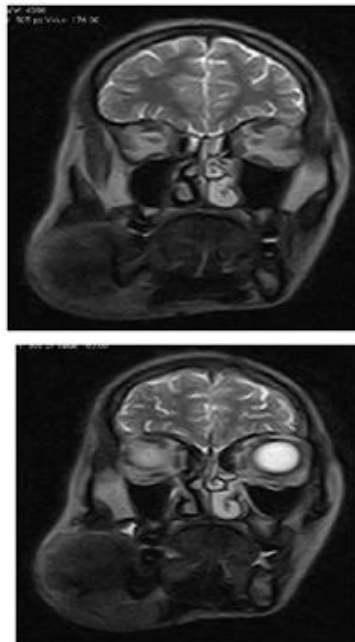
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## MRI

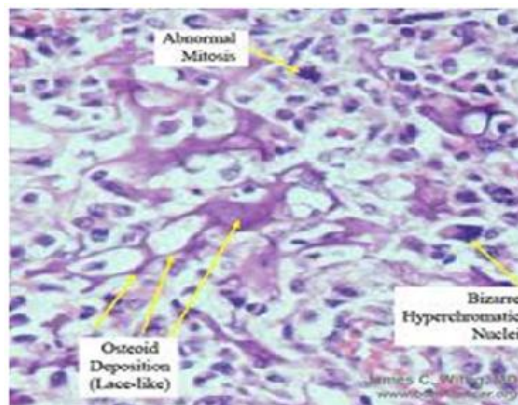


Axial T2WI show mixed signal intensity predominantly hypointense lesion arising from body of mandible on right side, involving the lingual surface of mandible



Coronal T2WI

## HISTOPATHOLOGY:



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H & E stained soft tissue specimen shows hypercellular areas of spindle shaped osteoblasts exhibiting marked pleomorphism, hyperchromatism and increased mitotic activity.

Presence of malignant osteoid showing variable mineralization interspersed among the tumor cells.

## HISTOPATHOLOGY REPORT – OSTEOGENIC SARCOMA

**DISCUSSION:** Although osteosarcoma is generally the most common malignant bone tumour, the lesions of the jaw are rare and despite its histopathologic similarities with osteosarcoma of the long bones, it is biologically different. Therefore, small retrospective studies and case reports are opportunities to report and discuss issues of clinical and diagnostic significance.

Osteosarcomas arise in several clinical settings, which include pre-existing bone abnormalities such as Paget's disease, fibrous dysplasia, giant cell tumour, multiple osteochondroma, bone infarct, chronic osteomyelitis, osteogenesis imperfecta, and a history of radiation exposure. In the present case, however, the aetiology remained unknown.

The diagnosis of osteosarcoma is typically suspected by the radiographic appearance of the affected bone. Ossification in the soft tissue component of the bone, which manifests as a "sunburst" pattern is classic for osteosarcoma, but is not a sensitive or specific feature. Periosteal new bone formation with lifting of the cortex leads to the appearance of a Codman's triangle.

Garrington et al. mentioned that the roentgenographic evidence of a symmetrically widened periodontal membrane space was a significant early finding in osteosarcoma of the jaw, although the same features had been seen in some chondrosarcomas.

In the present case, the occlusal radiograph of the mandible showed the sunburst pattern. The extent of the tumour in both the bone and the soft tissue was best appreciated as was shown by cross sectional imaging techniques such as computerized tomography (CT) or magnetic resonance imaging (MRI). This is particularly important prior to a definitive surgery.

A CT scan of an osteosarcoma often shows the formation of irregular endosteal and extra cortical bone as well as a destroyed or obliterated cortex. However, CT scan cannot differentiate between osteosarcoma and fibrous dysplasia. Atypical sunray spiculations were seen in this case, which were highly suggestive of osteosarcoma.

Although MRI is generally accepted to be superior to CT scanning in the evaluation of the local tumour spread, Panicek and colleagues showed that CT scanning and MRI were equally accurate in the staging of the local disease in bone tumours. However, in the present case, MRI could not be done due to financial limitations, as the patient belonged to a lower socioeconomic group. In the present case, it was observed that the lesion was mixed (radiolucent-radiopaque) in appearance.

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