

# Osteosarcoma of Maxilla: A Case Report

Shrooq Magbol Almasudi, Wafa Muslih Almalki

MBBS, Intern, College of Medicine, Umm AlQura University, Mecca, Saudi Arabia.

## ABSTRACT

Osteosarcoma known to be a malignant neoplasm of the bone which commonly affected the long bones. The involvement of osteosarcomas of the jaws specifically is rarely noticed representing only in 4-7% of all osteosarcomas cases. A 21-year-old female patient medically free. Reported with a left upper maxillary alveolar mass that started one year back as a small infected mass over the left maxillary alveolar ridge. Incisional biopsy done showed a histopathological picture of osteosarcoma and osteoblastoma. Neoadjuvant chemotherapy was given as 4 cycles of Doxorubicin/Cisplatin, followed by left inferior maxillectomy histopathological examination which revealed high grade chondroblastic osteosarcoma, 3.5 x 2.5 x 2.0 cm in size. All margins were negative. The purpose behind writing of this case report was to highlight the diagnostic difficulties encountered in a patient of osteosarcoma which presented as small infected mass over the left maxillary alveolar ridge.

**Key Words:** Osteoblasts, Osteosarcoma, Jaws, Mandible.

## \*Correspondence to:

Shrooq Almasudi,  
MBBS, Intern,  
College of Medicine,  
Umm AlQura University, Mecca, Saudi Arabia.

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## INTRODUCTION

Osteosarcoma, also called osteogenic sarcoma known to be rare, aggressive and malignant tumor. However, in primary malignant bone tumors the osteogenic sarcoma is considered to be the second most common tumor, accounting for approximately 1-5% of all primary bone tumors.<sup>1,2</sup>

Distal femur, proximal parts of humerus and proximal tibia are the common sites to be affected in Osteosarcomas.<sup>3</sup>

Osteosarcomas of the jaws (OSJ) are very uncommon tumours in maxillofacial region, representing only 6 to 9% of all osteosarcomas.<sup>2</sup> Affect more commonly the mandible more than maxilla.<sup>4</sup> Incidence of OSJ is low, for this it is difficult to assess the treatment protocols and prognosis.

In maxilla, lesions are commonly seen at the alveolar ridge, sinus floor, and palate than at the superior aspects.<sup>5</sup>

Multimodal treatment of Osteosarcomas by extensive surgery which preceded by the preoperative chemotherapy then followed by the postoperative chemotherapy is modern treatment protocol.<sup>6</sup>

Drugs used for chemotherapy are high-dose combinations of methotrexate, cisplatin, Adriamycin, doxorubicin and ifosfamide. Early diagnosis and adequate surgical resection are the keys to high survival rates.<sup>7</sup>

The purpose behind writing of this case report is to highlight the diagnostic difficulties encountered in a patient of Osteosarcoma which presented as small infected mass over the left maxillary alveolar ridge.

## CASE REPORT

21-year-old female patient, medically free. Presented with left upper maxillary alveolar mass that started one year back as a small infected mass over the left maxillary alveolar ridge. She denies any swallowing difficulties or breathing issues.

On physical examination, there was a firm mass in the left anterior maxillary alveolar ridge around (2 \* 2 cm). Missing of upper incisura and canine with intact not ulcerating mucosa. Spacing between the upper left teeth. No pus coming out. No palpable cervical lymph nodes.

Radiological work up showed no evidence of distant metastasis. Incision and drainage done. Later, she came back with bigger mass and the lesion did not heal.

This provoked us to give a serious thought to this clinical entity as osteomyelitis or other mixed lesions like metastatic carcinoma or even sarcoma. After the patient's written consent, an incisional biopsy was performed under local Anaesthesia.

The biopsy showed High grade (G3), chondroblastic osteosarcoma.

After metastatic work up, the surgical option was offered to her. The patient was reluctant to follow the treatment protocol and she went to seek a second opinion outside the kingdom. After a few months, she presented to the combined head and neck clinic with no treatment done and the mass increased in size. At this time, she agreed to follow the treatment protocol.

Four cycles of neoadjuvant chemotherapy were given which composed of 4 cycles of Doxorubicin / Cisplatin. Followed by Left inferior maxillectomy with 1.5 cm safety margin + tracheostomy+ Left side supra-omohyoid neck dissection. Intraoperative frozen section showed all margins were negative.

Reconstruction done with obturator prosthesis which was planned due to lack of plastic surgeon availability. Postoperatively, patient was doing well shifted to ICU for few days then to the ward one week later discharged home in good stable condition.

She will follow with the Oncology centre for adjuvant chemotherapy.

**Radiology**

CT neck showed the maxillary lesion with small growth 3 mm.

The lesion is seen in the alveolar process of the left maxilla and appears mostly lytic with no material and some sunburst changes.

The lesion seen between the left incisor and the left canine. The left lateral incisor is not seen. The lesion is not extending to anterior nasal septum or incisive canal. There is no superior extension to the submucosa of the left nasal cavity however the palate is not invaded. The lesion is separate from the orbicularis aureus muscle with no infiltration of the skin and subcutaneous tissue.

There are diffuse bilateral mildly enlarged lymph node mainly noted at level 2A and few sub centimetric occipital lymph nodes. The adenoid is enlarged and is causing mild narrowing of the airway, but the airway still patent.

Neck MRI result Showed interval millimetric increase in the size of the osteolytic soft tissue mass of the left maxillary alveolar ridge with improvement of the bilateral cervical lymph node.

CT CAP no evidence of metastasis.



Fig-1: Intraoral Photograph showing the swelling



Fig-2: Intraoral Photograph showing the swelling after the patient returned



Fig-3: Intraoral Photograph showing the swelling after the Chemotherapy cycles



Fig-4: Clinical situation after surgery



Fig-5: clinical situation after obturator prosthesis

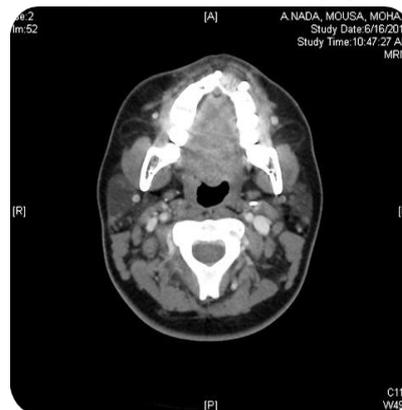


Fig-6: Head CT scan (Axial view) showing maxillary lesion with small growth 3 mm

**Histopathology**

The histopathological examination revealed high grade chondroblastic osteosarcoma, 3.5 x 2.5 x 2.0 cm in size. All margins were negative. Necrosis is present >99% as the tumour was inviable. Treatment effect: Present. Lymph vascular invasion is not present.

**DISCUSSION**

OSJ are extremely rare and represent only 3% to 4% of all OS.<sup>8</sup> Osteosarcomas are very challenging lesion specially if they occur at anatomical sites that define individual the most, so this may affect the person psychologically and in many ways.

Osteosarcomas of the jaw (OSJ) present later in age compared to osteosarcomas in other locations unlike in the case presented she

is 21-year-old, whereas OS of the extremities shows a slight male preponderance, it is known that OSJ have an equal gender ratio.<sup>9</sup> The cause of OSJ still unknown but It could be secondary to Paget's disease, fibrous dysplasia, enchondromatosis and hereditary multiple exostosis and with previous radiation therapy to the jaw region.

Regarding the presentation most of the patient presented with a mass which can be painful or painless with mobile teeth and numbness and they are mostly misdiagnosed as an infected mass, so it is important to maintain an index of suspicion.<sup>10</sup> In this case when presented at first, treating doctors thought it was an infected mass so that why they did an incision and drainage, but the lesion did not heal which provoked us to give a serious

thought to this clinical entity as osteomyelitis or other mixed lesions like metastatic carcinoma or even sarcoma.

The diagnostic difficulties are well documented with osteosarcoma. In the case presented diagnosis was made after an incisional biopsy. OSJ has different variant and the most common is (i.e., osteoblastic, fibroblastic and chondroblastic).<sup>11</sup> The patient who has been reported here was diagnosed as having osteoblastic osteosarcoma. OSJ has lower incidence and high survival rate. However, the risks of local recurrence very high.<sup>12</sup> OSJ should be treated with radical resection as the primary modality. Unlike long bone osteosarcomas, jaw osteosarcomas therapy of choice is radical surgical excision since it provides a 5-year survival rate of over 80%.

## CONCLUSION

Osteosarcomas of the jaws (OSJ) are very uncommon tumours in maxillofacial region, with low Incidence and difficulties to assess the treatment protocols and prognosis.

The OSJ can be presented only with small infected mass over the maxillary alveolar ridge as in our patient, for this the diagnostic difficulties came across this patient.

Multimodal treatment by preoperative chemotherapy then extensive surgery followed by the postoperative chemotherapy is modern treatment protocol which has been performed in this case.

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