INTRODUCTION

Osteosarcoma (OS) is a rare but highly malignant bone tumour. Excluding multiple myeloma, it is the most frequent primary malignant bone tumor accounting for about 20% of all sarcomas, although its occurrence in the jaw is rare. It shows typical clinical behaviour but varied radiological and histopathological features. It presents various histological aspects. We report a case of 30-year male presented with a painful swelling of mandible, diagnosed as OS after histopathological evaluation.

CASE REPORT

A 30-year male presented with the chief complaint of painful swelling in the right back region of his lower jaw for 6 months. Initially, the swelling was small and asymptomatic but from last 2 months, it started increasing in size and pain started from last few days. The past medical history and family history were not relevant to the present swelling. Extra-oral examination revealed a noticeable facial asymmetry on the right side of the face. Intra-oral examination revealed a large swelling extending from tooth #44 to the ramus of the mandible, measuring about 5 x 4 cm antero-posteriorly and medio-distally. On palpation, it was hard and fixed to the underlying structure. The overlying mucosa varied in color from yellowish to reddish (Figure 1a). The cervical lymph nodes were hard and painful on palpation. Panoramic radiograph revealed a mixed radiopaque - radiolucent lesion extending from tooth #33 to #44 with irregular attenuation of lamina dura, irregular areas of osteolysis and localised widening of periodontal ligament (Figure 1b). On the basis of clinical and radiographic features, a provisional diagnosis of OS with the differential diagnosis of osteoblastoma was given. Patient was referred to the Department of Oral and Maxillofacial Surgery. An incisional biopsy was performed and the tissue was sent to the Department of Oral and Maxillofacial Pathology for the microscopic evaluation. Histopathological examination revealed malignant osteoblasts and neoplastic bone formation in the connective tissue stroma (Figure 2a). The malignant osteoblasts were pleomorphic, hyperchromatic, and had few mitotic figures (Figure 2b). The overlying epithelium was normal stratified squamous epithelium which was hyperplastic at places (Figure 2c). The histopathological features confirmed the diagnosis of osteoblastic OS. After histopathological confirmation, other investigations like chest radiograph, lung and body scans were performed which were negative for other primary as well as metastatic lesions.

Radical hemi-mandibulectomy was performed (Figure 2d) with a supportive chemotherapy. Reconstruction of the defect was performed using supraclavicular flap and reconstruction plates. The resected margins were negative for tumor and 6 months follow-up period was uneventful.

CASE REPORT

Osteogenic Sarcoma of Mandible

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ABSTRACT

Osteosarcoma (OS) is a malignant neoplasm characterised by the formation of osteoid matrix by neoplastic cells. It is the most common primary malignant bone tumor accounting for 20% of all sarcomas, although its occurrence in the jaw is rare. It shows typical clinical behaviour but varied radiological and histopathological features. It presents various histological aspects. We report a case of 30-year male presented with a painful swelling of mandible, diagnosed as OS after histopathological evaluation.

Key Words: Osteosarcoma. Osteoblasts. Mandible.
DISCUSSION

Primary OS represents a heterogeneous group of malignant bone tumors, characterised by the diversity of histological aspects and clinical and biological behaviour. Differentiation of OS from other bony lesions like Paget's disease, fibrous dysplasia, multiple myeloma, and metastatic tumors is based more on microscopical than clinical evidence. Besides the size of the lesion, the histologic type and grading of the tumor are important factors in determining the prognosis. Conventional OS can be subdivided into osteoblastic, chondroblastic, and fibroblastic histologic variants depending on the extracellular matrix produced by the tumor cells. Other histologic variants include the myxomatous type, telangiectatic type, small cell OS, giant cell OS, giant cell predominant OS, large cell type, fibrous histiocytoma-like type, and epithelioid OS. The present case showed typical pattern of conventional OS osteoblastic variant.

Jaw OSs are unusual and comprise of only 6.5% of all OS. Unlike extragnathic OSs, jaw OSs usually affect the individuals of 4th decade and they show a high survival rate. Forteza et al. studied 81 cases of OS. As per his study, maxillary OSs occurred in females with the ratio of 4:1; whereas, mandibular lesions occurred only in males. The widening of periodontal ligament space and inferior dental canal, together with sunburst effect, are almost pathognomonic of OS of jaw bone. Not all the lesions show such peculiar characteristics. The present case also showed localised widening of periodontal ligament space and a mixed radiopaque - radiolucent lesion on a radiographic examination. Hemimandibulectomy is the preferred way of treatment for OS of mandible. Adjuvant chemotherapy is required in some lesions as in the present case.

The prognosis of jaw OS is better than that of long bone, with a 5-year-survival rate of 25.8% for the maxilla and 34.8% for the mandible. The median survival time for the maxilla is 2.9 years and 6.5 years for the mandible. More accurate definitions of the biological behaviour of OS in maxillary bones are required to establish an effective therapeutic regimen in order to increase the survival rate of patients.

REFERENCES