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Case Report

Osteoblastoma of mandible: A unique entity case report

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ABSTRACT:
Osteoblastoma is an uncommon osteoblastic tumor that rarely involves facial bones. It is an uncommon lesion that accounts for 1% of all bone tumors and about 3% of all benign bone tumors. Here, we present a case of 62 year-old female with benign osteoblastoma on the right side of the mandible which was growing for the past 2 months. Clinical presentation, radiologic and histologic features, and treatment and follow-up of this patient are discussed in this paper. Proper diagnosis of this lesion is very important because of its similarity to others lesions. There are very few reported cases of this rare entity; the primary aim of this article is to add more cases of this rare phenomenon to literature and provide a descriptive review.
Key word: Mandible, osteoblastoma, tumour

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INTRODUCTION

Benign osteoblastoma is a rare benign tumor of bone. In 1956, the term benign osteoblastoma was coined by Jaffe and Lichtenstein.[(1)]Etiology of osteoblastoma is unknown; however it is considered to be a true neoplasm of bone.[(2)]It is a unique osteoblastic tumor with osteoid and bone deposition, cytologically characterized by the abundant presence of osteoblasts.It most commonly affects vertebral column, sacrum, calvarium, long bones and small bones of hand and feet. First case in the jaws was reported by Borello and Sedano in 1967.[(3)]Within jaws mandible is more commonly affected than maxilla. Most of them affect mandibular posterior region. However there is one report of the lesion affecting mandibular incisor region. Males are most commonly affected than females 2:1.[(4)] Seventy five percent of the lesions occur under the age of 20 yrs average age is 18 yrs. Size is between 2-4 cm but may be as large as 10 cm.[(5)]

CASE REPORT

A 62-year-old female reported to our department with a slow growing, painless swelling of her left lower jaw for 3months with difficulty in chewing and swallowing. On extra examination, the swelling was approximately around 4cm x3 cm in size, non tender, skin overlying appears normal and hard in consistency. Extraorally, swelling extending supero-inferiorly from left side preauricular region to angle of mandible, Anteroposteriorly from malar prominence extending posteriorly post auricular area[Figure 1].There was restricted mouth opening with no transitional movement possible. There were no significant family and systemic history. On palpation cervical chain of lymph nodes level 1b and level IIwas palpable and tender.

Fig. 1: Patient profile showing facial asymmetry, diffuse swelling involving the left side of the lower jaw

During intraoral examination, the swelling was originating from the region of the left lower premolar, extending lingually and continued posteriorly beyond the lower left third molar. The swelling was a single, firm, stony hard growth, with well-demarcated borders, displacing the involved tooth.The overlying mucosa was firm and blanched, although no ulceration or discharge was found.

RADIOLOGICAL EXAMINATION

Computated tomography reveals large well defined high density bony lesion with lobulated outline seen arising from the ramus of the left mandible and projecting into the masticator and para pharyngeal space. Cortical thickening of the inner table of body of the mandible noted. lesion displacing the left ICA medially & displacing the styloid process posteriorly and left condyle of mandible laterally with possible subluxation of temporomandibular joint (fig:2). Lesion measures approx. 4.8cm (AP) x 5.9cm (CC) x 4.6cm (ML). Subcentimeter nodes seen in level IB, II, and V bilaterally.

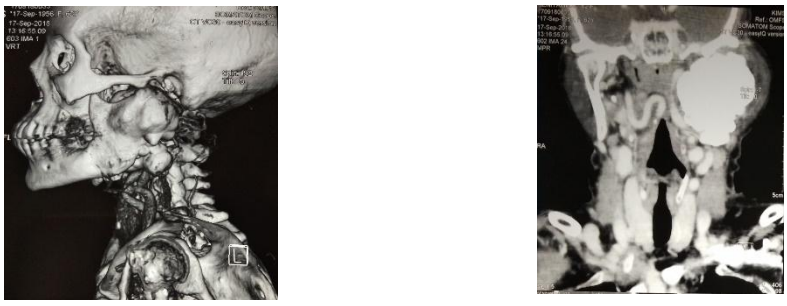

Fig 2: Computed tomography showing non-homogeneous radiopaque mass

HISTOPATHOLOGICAL EXAMINATION.

Lamellar bony trabecular of mature bone rimmed by osteoblast. No atypical nuclear features made out under 10x microscopic magnification.(fig 3)Osteoid tissue with varying degree of mineralization and a highly vascular connective tissue was revealed by an incisional biopsy.

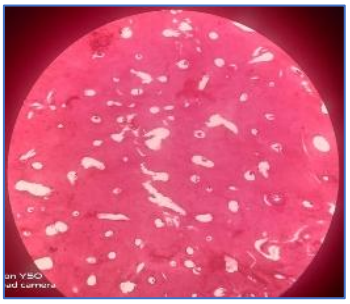

Fig. 3: Histopathology showing Lamellar bony trabecular of mature bone rimmed by osteoblast

SURGICAL TREATMENT

Under general anaesthesia lip split incision was given. Subplatsmal flap was raised mandible was exposed from symphysis region the condylar region on the left side. Hemimandibulectomy was done from symphysis region to condylar region on the left side.(fig 4)

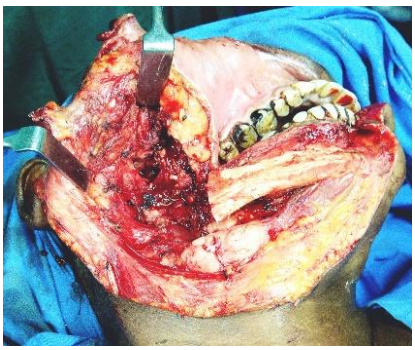

Fig. 4: Hemimandibulectomy of the affected site

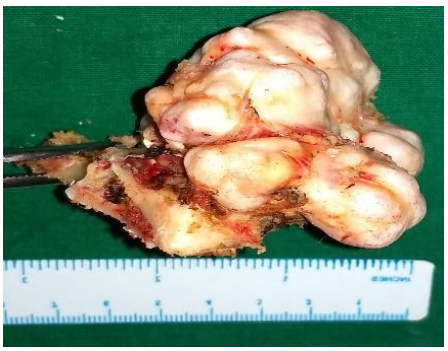

Fig. 5: Specimen of size 7.5 mm

DISCUSSION

Although osteoblastoma could affect any bone in the human skeleton, it usually develops in long bones followed by the cervical spine (47-69%). Only about 10% of cases occur in maxillo-mandibular complex, with an apparent predilection for jaw[(1)]. In 2006, Jones et al. 10 reviewed 77 cases of osteoblastoma and observed that only 28.6% of cases occur in maxilla. It usually occurs in young adults, with the mean age of 20 years6 , so our case is unusual because of its location of development and age of diagnostic.

Clinical presentation of this pathology is quite varied. Pain, often mild and longstanding, is the most present symptom[11]. In the case reported here, the patient complained of pain only when using his total prosthesis. Regarding the clinical alterations, it is generally presented as an expansion of slightly painful cortical bone to palpation, and limited growth does not exceed four centimeters in diameter, in most cases[6,11]. This report shows a lesion with slow but continuous growth, assuming dimensions that resulted in asymmetry and facial deformity.

Radiographically, its presentation is quite varied, and there is no pattern. Normally, a mixed pattern of radiopacity/radiolucency can be found, depending on the calcification degrees and duration of the frame, in addition to the absence of perilesional sclerotic border. Therefore, fibro- osseous lesions and odontogenic tumors can be included in a differential diagnosis. Normally, fibrous dysplasia has a ground glass appearance with poorly discernible borders, diverging from the aspects generally observed in osteoblastoma. In contrast, ossifying fibromas manifest as central radiopaque masses surrounded by a radiolucent rim akin to osteoblastoma, although they have a predilection for jaw and are generally well delimited[13,14].

According to the histopathological features, osteoblastoma has been subdivided into conventional (benign) and aggressive. The term benign osteoblastoma was first proposed by two authors in 1956, Jaffeand Lichtenstein[16]. At that time, they used this term to identify an osteoid matrix forming osteoblastic lesion similar to osteoid osteoma, but with higher growth potential. Later, in 1972, Dorfman included osteoblastoma in a review of malignant transformation of benign bone lesions. In a review of his osteoblastoma cases, he noted that some of them exhibited recurrent behavior and non-specific histologic features that would deserve the name of aggressive osteoblastoma. Since then, the term has been used for clinical patterns of greater aggressiveness and speed, having a higher rate of recurrence after conservative therapies[16].

Osteoblastoma can be included in the microscopic differential diagnosis of fibro-osseous lesions, such as fibrous dysplasia, by the possibility of observing certain similar patterns in these pathologies and also of osteoid osteoma, which can be distinguished only by adding the clinical characteristics[19]. The literature shows that the central feature to distinguish osteoblastoma from other fibro-osseous lesions is that the stroma does not consist of cellular spindle cells but rather is a loose vascular stroma with numerous prominent epithelioid-type osteoblasts[18]. In the case presented by us, the lesion was treated conservatively, by means of excision and curettage. In the literature, the therapeutic modality employed ranged from more conservative to more aggressive excision in the block, such as maxillectomies or mandibulectomies. The most aggressive treatment, with a safety margin, has been indicated in order to reduce recurrence. However, in 2001, Gordon et al. described the likelihood of recurrence for conventional lesions around 13.6%.[6,11,13]

However, recurrences of the lesions, when described in the literature, were related to the difficulty of access, facilitating incomplete approachesor even inadequate initial treatment due to incorrect preoperative diagnosis.[22,23]

Therefore, the possibility of recurrence would be more related to these factors than to the pathological behavior of osteoblastoma. Therefore, due to the rarity and the difficult diagnosis, describing cases like this one and their presentation characteristics is extremely important to enhance knowledge of this pathology among professionals in the area of diagnosis and maxillofacial surgery. In our case, the correct diagnosis was only possible when a maxillofacial pathologist was consulted, highlighting the importance of such professional.

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