

Peripheral Osteoma of Mandible Arising from Lower Border in Angle Region: A Rare Case Report

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Abstract

Peripheral osteomas are rare tumors of jaws arising from proliferation of cancellous or compact bone increasing in size by continuous bone formation. These lesions appear as unilateral, pedunculated or sessile mushroom like masses, well marginated and varying in diameter from 10 to 40 mm. Osteomas are essentially restricted to craniofacial skeleton and are rarely if ever diagnosed in other bones. Osteomas are found mainly in craniofacial bones. They occur most frequently in paranasal sinuses followed by external ear canal, orbital wall, temporal bone and pterygoid processes and rarely in mandible. Mandibular osteomas originate mainly from lingual aspect of body of mandible and lower border in region of angle being the most common site. A rare case of peripheral osteoma of mandible arising from lower border in angle region has been presented here.

Keywords: Osteomas; Osteoid Osteoma; Bony Exostoses; Bone Tumors.

Introduction

Osteoma is a benign osteogenic tumor arising from proliferation of cancellous or compact bone increasing in size by continuous bone formation [1,2]. It is a usually slow growing, asymptomatic solitary lesion which mainly affects young adults [3,4]. The pathogenesis of peripheral osteoma is unclear. Some investigators consider it is a true neoplasm while others classify it as developmental anomaly³. Osteomas are thought to occur reactively after trauma or as a result of muscle traction on periosteum [5]. Osteomas are essentially restricted to craniofacial skeleton and are rarely if ever diagnosed in other bones [6,7]. Osteomas are found mainly in craniofacial bones. They occur most frequently in paranasal sinuses [8] followed by external ear canal, orbital wall, temporal bone and pterygoid processes and rarely in mandible [5]. Mandibular osteomas originate mainly from lingual aspect of body of mandible and lower border in region

of angle being the most common site [2,3]. The incidence is similar between genders and can present across all age group³. However in a recent serial study of 35 new cases of peripheral osteomas of the oral and maxillofacial region, males were twice as commonly affected as females with age of presentation ranging from 14 to 58 years with a mean age of 29.4 years. Three different types of osteomas have been described in literature. Central type of osteomas are characterized by their origin from the endosteum, peripheral type osteomas originate from periosteum and extraskeletal osteomas generally develop within muscle [9,10]. Removal of peripheral osteoma is not necessary. Osteomas causing pain, facial asymmetry, malocclusion and actively growing lesions are indicated for surgical excisions whereas for small, asymptomatic lesions periodic observation is needed. Recurrence after surgical excision is extremely rare [3].

Case Report

A 25 year old male patient (Fig.1) reported to outpatient section of Department of Oral Medicine and Radiology, Government Dental College, Trivandrum, with presenting complaint of a swelling involving left side of lower jaw since 3 years. The swelling was progressively increasing in size and causing mild facial asymmetry in lower left region.

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The patient was well nourished and well oriented. He had no significant past dental history. There was no history of trauma or any inflammatory disease. Extra-oral examination showed a swelling of 3cm x 2.5cm involving mandibular lower border anterior to angle region in left side (Fig.2). On palpation swelling was found to be hard to stony hard in consistency. It was immobile and attached to lower border of mandible with broad base. It was not causing any color or temperature change on overlying skin and no other associated symptoms noted. No abnormality had been detected on intra-oral examination. The patient was conscious of swelling due to its slow increase in size causing a mild degree of disfigurement of face on left side. On the basis of clinical finding provisional diagnosis of idiopathic osteosclerosis has made. In panoramic view (Fig.3) a radio-opaque, well circumscribed, sessile mushroom like mass of 2cm x 2.5cm was attached to lower border of mandible (left side) anterior to angle region with broad base. In postero-anterior view (Fig.4) a radiopaque mass of 2.0cm x 2.5cm was attached to outer cortex of lower border of mandible anterior to angle region in left side. The margin of radio-opacity was smooth and continuous with outer cortical plate. The lateral cephalogram (Fig.5) of patient showed radio-opaque sessile mushroom like mass of 2cm x

2.5cm was attached to lower border of mandible (left side) with broad base. The clinical and radiological findings were highly suggestive of peripheral osteoma of lower border of mandible. The differential diagnosis of osteomas include osteosarcoma, osteoblastic metastasis, paget's disease, osteoid osteoma and monostotic fibrous dysplasia. Patient was referred to department of oral surgery for biopsy and further management. The histopathology shows interconnected bony trabeculae lined by osteoblastic rimming and bone marrow suggestive of osteoma (Fig.6). There was no significant finding during 6 month follow up.

Fig. 2: Lateral view of patient showing a swelling of 3cm x 2.5cm involving mandibular lower border anterior to angle region in left side.



Fig. 3: Panoramic view showing a radio-opaque, well circumscribed, sessile mushroom like mass of 2cm x 2.5cm was attached to lower border of mandible (left side) anterior to angle region with broad base.

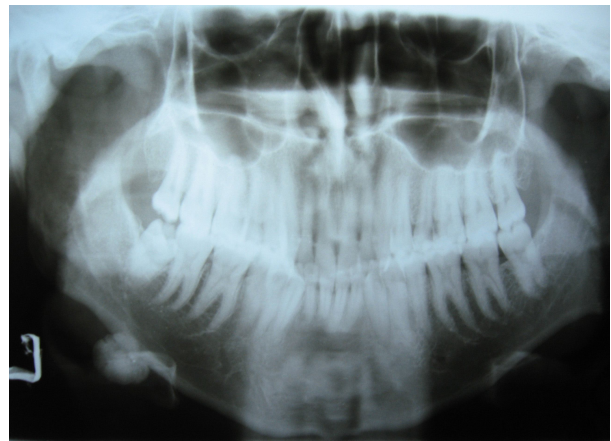


Fig. 1: Profile photograph of patient



Fig. 4: Postero-anterior view showing a radiopaque mass of 2.0cm x 2.5cm was attached to outer cortex of lower border of mandible anterior to angle region in left side. The margin of radio-opacity was smooth and continuous with outer cortical plate

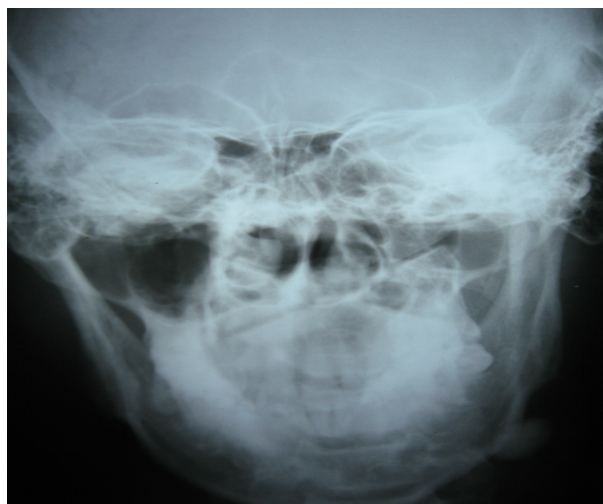


Fig. 5: The lateral cephalogram of patient showed radio-opaque sessile mushroom like mass of 2cm x 2.5cm was attached to lower border of mandible (left side) with broad base

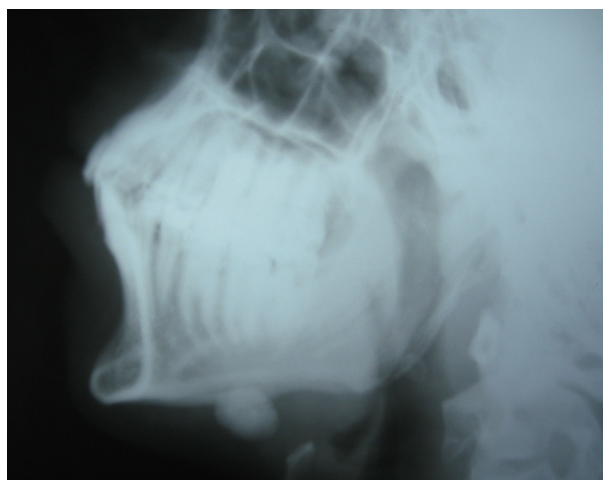
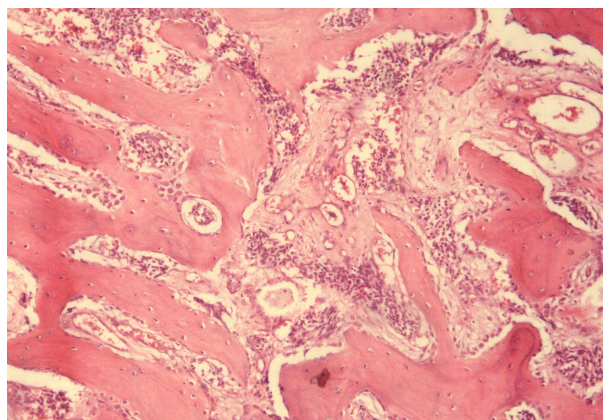


Fig. 6: Photomicrograph showing interconnected bony trabeculae lined by osteoblastic rimming and bone marrow suggestive features of cancellous osteoma . (x100) (haematoxyline and eosin staining)



Discussion

Osteomas of jaw bones are rare tumors. These lesions appears as unilateral, pedunculated or sessile mushroom like masses, well margined and varying in diameter from 10 to 40 mm. Although osteomas are generally asymptomatic, osteomas of mandible may cause facial assymetry [3]. Osteomas can arise from surface of bone (periosteal osteoma) as a polypoidal or sessile mass or may be located within medullary bone (endosteal osteoma) [6]. According to metaanalysis of osteomas of mandible, 63 cases were reported in english literature from 1927 to 2003 and 30.5% of these osteomas arose from posterior body, 28.5% from the condyle, 14.2% from the angle region, 11.1% from ascending ramus, 7.9% from coronoid process, 6.3% from anterior body and 1.5% from sigmoid notch [11]. In a study by Sayan et al [3], 35 new cases of peripheral osteomas of oral and maxillofacial region were reported. Of these cases 8 occurred in mandible and 5 in maxilla and most of them appeared as unilateral, mushroom like masses.

Though exact etiology and pathogenesis of peripheral osteoma is still unclear, Traumatic, Congenital, Inflammatory and endocrine causes have been considered as possible etiologic factors [1]. However regarding pathogenesis a combination of trauma and muscle traction which may initiate an osteogenic reaction has been suggested as underlying mechanism [3]. However we have no information as to the possible cause in our case.

Histologically Osteomas are composed of mature bone tissue with dense lamellae and organized haversian channel. Although they contain osteoblasts, fibroblasts and giant cells in intertrabecular stroma. Haemopoitic cells are rarely observed and osteomas present variable osteoblastic and osteoclastic activity [12].

Differential diagnosis of osteomas include osteosarcoma, osteoblastic metastasis, paget'disease, osteoid osteoma and monostotic fibrous dysplasia .The radiological margin of these lesions are less evident than that of osteomas [13]. Imaging of peripheral osteomas can be achieved by different imaging modalities including panoramic radiograph, postero-anterior view, water's view or CT scan. The use of CT scanning with 3D reconstruction makes it possible to achieve better resolution and more precise localization [14]. Radiographically osteomas are seen as circumscribed, oval, radiopaque,well demarcated masses similar in density to normal bone attached to cortex by a broad base or a pedicle [3]. In our case a

well demarcated, mushroom like mass attached to outer cortex of lower border of mandible is shown in postero-anterior view and lateral cephalogram. These findings were highly suggestive of a peripheral osteoma of mandible. Bone scan is not routinely performed for diagnosis of osteomas but when used it will be able to disclose the physiological activity of peripheral osteomas enabling to determine whether it is long standing, mature lesion with no further growth or relatively young lesion that is actively growing [15]. Smaller endosteal osteomas are difficult to differentiate from foci of condensing osteitis or focal chronic sclerosing osteomyelitis or idiopathic osteosclerosis [6]. Removal of peripheral osteoma is not necessary. Osteomas causing pain, facial asymmetry, malocclusion and actively growing lesions are indicated for surgical excisions whereas for small, asymptomatic lesions periodic observation is needed. Recurrence after surgical excision is extremely rare [3]. To date there is only one reported case of recurrence of a peripheral osteoma of mandible following surgical excision [16]. Further there are no reports of malignant transformation of peripheral osteoma in literature [16].

Conclusion

Peripheral osteomas are rare tumors of jaws. Whenever bony swellings will be encountered in jaws of young and adult ones osteoma should be included in differential diagnosis.

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