

An Unusual Osseous Lesion of Mandibular Condyle

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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. The first case of peripheral osteoma involving condylar process was reported by Ivy in 1927. Since then only 13 cases of osteoma arising in condylar process have been reported in literature. Osteoma of condyle is relatively rare and it may cause a slow progressive shift in patient's occlusion with deviation of the midline of the chin toward unaffected side. Here, a case of peripheral osteoma of mandibular condyle is presented.

Keywords: Osteomas, Osteoblastomas, Bone tumors.

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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 anomaly.³ 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} They occur most frequently in paranasal sinuses⁸ 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 group.³ 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. The peripheral type osteomas originate from periosteum and extraskeletal osteomas generally develop within muscle.^{9,10}

CASE REPORT

A 45-year-old female patient (Fig. 1) reported to outpatient section of Department of Oral Medicine and Radiology, Government Dental College, Trivandrum, with presenting complaint of a swelling in left parotid region since 15 years. The patient was conscious of swelling due to its slow increase in size causing a mild degree of disfigurement of face on left side. The patient was well-nourished and well-oriented. She had no significant past dental history. Extraoral examination showed a swelling of 2 × 2 cm in left parotid region of face (Fig. 2A). On palpation swelling was found to be bony hard in consistency. It was immobile and attached to underlying tissue but with opening and closing of mouth swelling was moving with jaw movements. The skin over the swelling was freely mobile. It was not causing any color or temperature change on skin overlying left parotid region. There was no lifting of left ear lobe (Fig. 2B). No abnormality had been detected on intraoral examination. On the basis of clinical finding a provisional diagnosis of bony exostoses or condylar hyperplasia has made. Osteoma, osteoid osteoma, monostotic fibrous dysplasia, osteosarcoma, osteoblastic metastasis, Paget's disease are included in differential diagnosis. The patient was advised for radiographic investigations. In panoramic view (Figs 3A and B) a radiopaque mass of 1.5 × 1.5 cm was present superimposing on neck of condyle on left side. In reverse towne's view (Figs 4A and B) a radiopaque mass of 1.5 × 1.5 cm was attached to outer cortex of neck of condyle on left side. The margin of radiopacity was smooth and continuous with outer cortical plate. The Coronal sections (CT) showed (Fig. 5) a large hyperdense rounded bony mass arising from



Fig. 1: Extraoral photograph of patient



Fig. 2A: Extraoral profile view showing a swelling of 2 × 2 cm in left parotid region of face

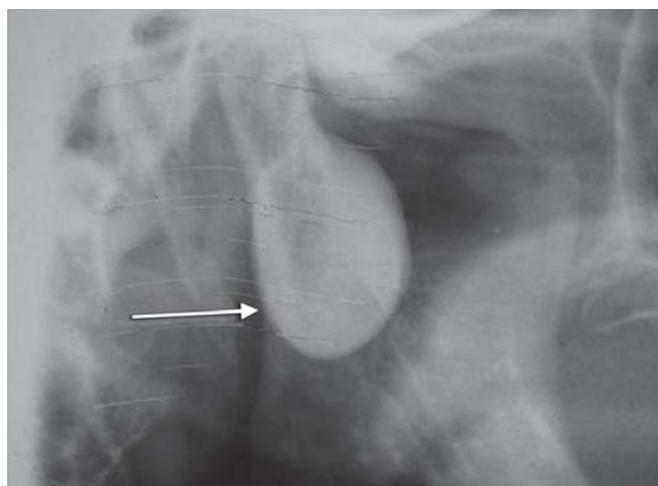


Fig. 3B: Cropped panoramic radiograph showing radiopacity of 1.5 × 1.5 cm superimposed on neck of condyle



Fig. 2B: Extraoral profile view showing no lifting of left ear lobe

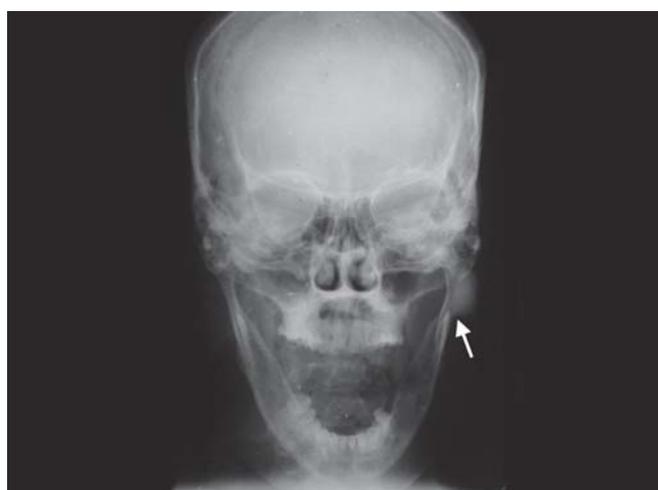


Fig. 4A: Reverse Towne's radiograph showing radiopacity attached to outer cortex of neck of condyle



Fig. 3A: Panoramic radiograph showing radiopacity of 1.5 × 1.5 cm superimposed on neck of condyle

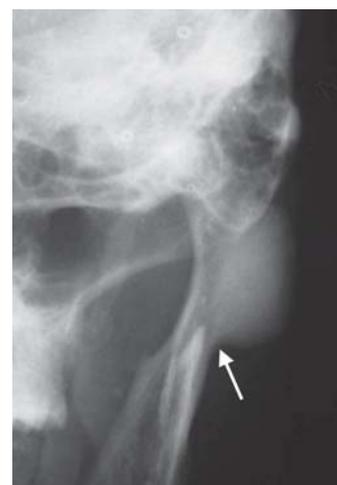


Fig. 4B: Cropped reverse Towne's radiograph showing radiopacity attached to outer cortex of neck of condyle

upper end of the neck of left mandibular condyle having dimension of 1.5 × 1.7 × 2.2 cm. CT with 3D reconstruction showed rounded bony mass projects out from the lateral cortex of upper end of the neck of left mandibular condyle (Figs 6A to C). The clinical and imaging findings were highly suggestive of peripheral osteoma of condylar neck. Patient was referred

to department of oral and maxillofacial surgery for biopsy and further management but patient has declined any surgical intervention. Therefore patient was conservatively managed

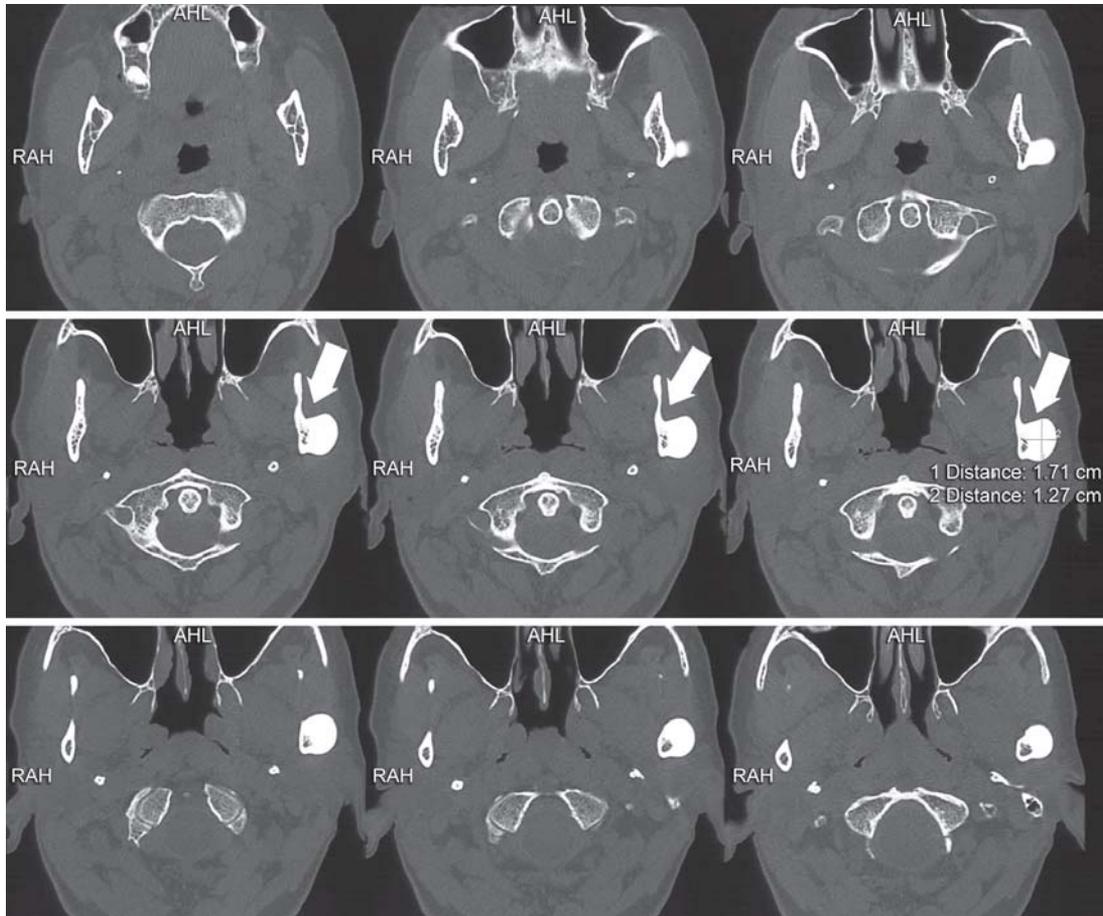
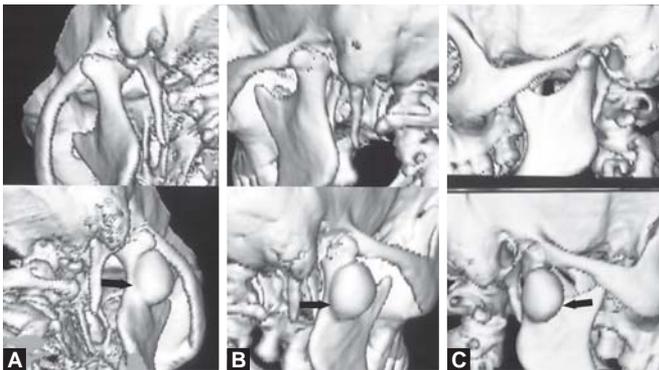


Fig. 5: Cropped coronal CT showing 1.5 × 1.7 × 2.2 cm hyperdense rounded bony mass arising from upper end of the neck of left mandibular condyle



Figs 6A to C: Cropped CT with 3D reconstruction showing rounded bony mass projected out

with clinical and radiological follow-up. There was no significant finding during 8-month follow-up.

DISCUSSION

Osteomas of jaw bones are rare tumors. These lesions appears as unilateral, pedunculated or seesile mushroom-like masses, well-marginated and varying in diameter from 10 to 40 mm. Although osteomas are generally asymptomatic, osteomas of mandible may cause facial assymetry.³ Osteoma of condyle may cause a slow progressive shift in patient’s occlusion with

deviation of the midline of the chin toward unaffected side. This results in facial asymmetry and TMJ dysfunction. The most common clinical manifestation involving condyle are malocclusion and facial asymmetry.⁴ 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 meta-analysis 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 al³ 35 new cases of peripheral osteomas of oral and maxillofacial region were reported. Of these cases eight occurred in mandible and five in maxilla and most of them appeared as unilateral, mushroom-like masses. The first case of peripheral osteoma involving condylar process was reported by Ivy¹² in 1927. Since then only 13 cases of osteoma arising in condylar process have been reported in literature.^{4,13} Accordingly osteomas can be classified into two types, first type of osteomas are those that proliferate and cause replacement of condyle by osteoma and second type of osteomas are those that form a pedunculated or osseous mass

on the condyle or neck of mandible.⁴ However, a combination of above two types has been reported by Chong-Huat Siar et al¹⁴ in a case report in which condyle is having bilobed structure, one lobe presenting as a pedunculated mass and other lobe seen as replacement of condyle. They classified it as a third type of osteoma in classification of osteomas occurring in condylar process. 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. Hemopoietic cells are rarely observed and osteomas present variable osteoblastic and osteoclastic activity.¹⁵

Histologically an osteoma consists of either normal appearing dense mass of lamellar bone with minimal marrow tissue (compact type osteoma) or of trabeculae of mature lamellar bone with intervening fatty or fibrous marrow (cancellous osteoma).¹

Differential diagnosis of osteomas include osteosarcoma, osteoblastic metastasis, Paget's disease, osteoid osteoma and monostotic fibrous dysplasia. The radiological margin of these lesions are less evident than that of osteomas.¹⁶ Imaging of peripheral osteomas can be achieved by different imaging modalities including panoramic radiograph, reverse towne's view or 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.¹⁷ 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, hyperdense and large pedunculated mass located on lateral surface of condylar neck was demonstrated by CT and 3D reconstruction. These findings were highly suggestive of a peripheral osteoma of condyle of mandible. 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.¹⁸ Further there are no reports of malignant transformation of peripheral osteoma in literature.¹⁸

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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