Journal of Advanced Medical and Dental Sciences Research

@Society of Scientific Research and Studies ***NLM ID:*** *101716117*

Journal home page: www.jamdsr.com doi: 10.21276/jamdsr Index Copernicus value = 85.10

(e) ISSN Online: 2321-9599; (p) ISSN Print: 2348-6805

Case Report

Peripheral Osteoma an uncommom bony lesion of Maxilla- A Case Report

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ABSTRACT:
Peripheral osteoma of the jaw bones is uncommon. It is a benign osteogenic lesion with a very slow growth, characterized by proliferation of either compact or cancellous bone. Peripheral osteomas of maxilla are relatively rare. Here we are discussing a case of maxillary peripheral osteoma which was treated with surgical intervention. The post surgical follow-up should include periodic clinical and radiographic studies. Patients with osteoma associated with impacted or supernumerary teeth, should be evaluated for the possible Gardner's syndrome.
Key words: Peripheral osteoma, bone neoplasm, maxilla.

Received: 02/05/2020 **Modified:** 10/06/2020 **Accepted:** 15/06/2020

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This article may be cited as: Malhotra Y, Ohri N, Godara S, Malhotra PU. Peripheral Osteoma an uncommom bony lesion of Maxilla- A Case Report. J Adv Med Dent Scie Res 2020;8(7):139-142.

INTRODUCTION

The proliferation of compact and/or cancellous bone can lead to the formation of benign osteogenic neoplasms called osteoma. Osteomas can develop as

a) peripheral (periosteal) masses attached to the cortical plates
b) central lesions arising from endosteal bone surfaces.
c) extraskeletal

Multiple osteomas of the jaws are a hallmark of Gardner syndrome (familial adenomatous polyposis).[1] Nonsyndromic cases are typically solitary and very rare.[2] Whereas peripheral osteomas are fairly easy to diagnose, central osteomas pose a more challenging diagnostic problem and need to be differentiated from other similar lesions of the jaws, such as central ossifying fibroma, condensing osteitis, idiopathic osteosclerosis, osteoblastoma, cementoblastoma, and complex odontoma.

Peripheral Osteoma of the maxillofacial areas is uncommon. These occur frequently in the sinuses, most common in the frontal sinus, followed by the ethmoidal and maxillary sinus.[3] Osteomas grow at a slow and gradual rate, often asymptomatic but can produce swelling and asymmetry if the size enlarges.

CASE REPORT

A 45-year-old man was referred to the Department of Dentistry; Dr. RPGMC Tanda, with a complaint of facial and intraoral swelling on the posterior buccal aspect the right-side maxilla. He had been aware of the slow but steady increase in the size of the lesion over the last 1 $^{1}/_{2}$ year. Initially the swelling was of peanut size but has progressed gradually to the present size.

Patient was psychologically obsessed about the growth in the maxilla and was irritated with the constant involuntary movement of the tongue over the growing mass. There was no history of trauma in that region with non contributory medical history.

On intraoral examination a well defined, immobile mass was seen buccally on the alveolar process of the right posterior maxilla with no vestibular obliteration. It extended from mesial aspect of upper right first premolar to distal end of upper right second molar. The lesion was bony-hard and non tender on palpation and measured 3.5 x 1.5 cm in dimension. The overlying oral mucosa was normal. Lymph node examination was insignificant. No other marked deformity was noted. The panoramic radiograph revealed no obvious changes.[Fig-1].

A CT scan demonstrated evidence of bony overgrowth arising from the alveolar plate of the maxilla on the right side. The cortex of the overgrowth is seen in the continuity with the cortex of maxilla [Fig-2 (a) (b)]. These clinical and radiographic features were sufficiently supportive of the working diagnosis of peripheral osteoma. The lesion was excised under local anesthesia [Fig-3 (a) (b)]. The gross specimen was bony hard, semicircular in shape and measured about 3 cm x 1.5 cm. The superficial surface appeared pale and smooth [Fig-4] whereas the cut surface was rough [Fig-5]. The tissue was fixed in 10% neutral buffered formalin, decalcified in 5% formic acid and was routinely processed. The patient was scheduled for regular follow up.

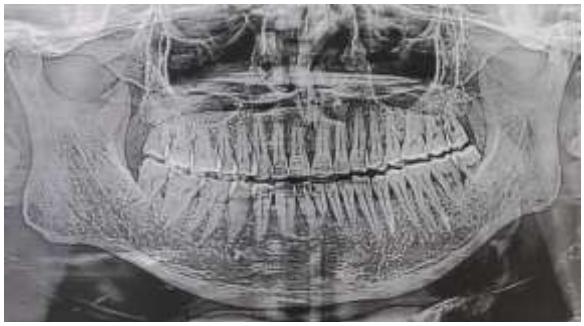

Figure 1: Panoramic radiograph showing no obvious changes.

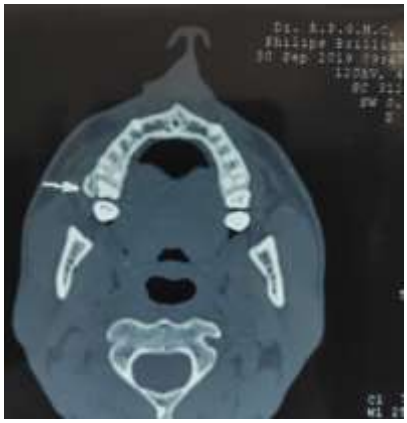

Figure 2 (a): Coronal Computed tomography (CT) showing a large, well-circumscribed, pedunculated mass attached to the buccal surface of the right maxillary body.

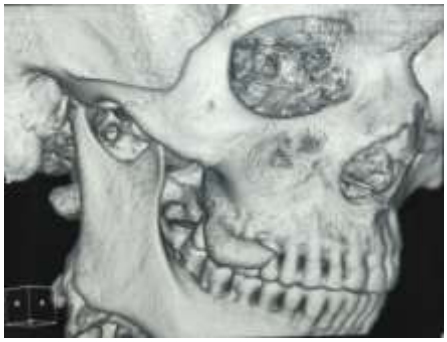

Figure 2 (b): Three-dimensional reconstruction image showing localisation and extension of the lesion.

Figure 3: Mucoperiostal flap was raised exposing the entire lesion.

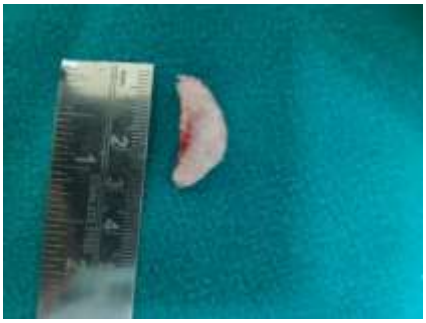

Figure 4 (a): Gross surgical specimen showing the superficial smooth surface.

Figure 4(b): Gross surgical specimen showing the rough cut surface.

DISCUSSION

Osteoma is a rare benign neoplasm which is characterized by excessive and persistent proliferation of either the medullary bone (endosteal) or on the bone surface as a polypoid or sessile growth (periosteal). These lesions usually appear as a unilateral pedunculated mushroom-like mass. The mandible is more commonly affected than the maxilla.[3] In the maxillofacial region, these tumors are mainly located on the skull most frequently in the sinuses, of which the frontal sinus is the most common site, followed by ethmoidal and maxillary sinuses.

It is usually slow growing and is asymptomatic but local sensitivity, malocclusion and difficulty in mastication have also been reported. The size of the tumor may or may not cause facial deformity. However, there is no gender predilection but it is seen to be more prevalent in females. The mean age range of the patients with osteoma in the maxillofacial region has been reported to be 29.4 and 40.5 years.[4]

The pathogenesis of Peripheral Osteoma is unclear. Some investigators consider it a true neoplasm, while others classify it as a developmental anomaly.[3] Though the exact pathogenesis and etiology of Peripheral Osteoma is still unclear, the possible etiologic factors can be traumatic, congenital, inflammatory and endocrine.[5] Traditional radiography (i.e.: panoramic radiograph, Water's view) can be used as imaging techniques for Peripheral Osteoma but the best diagnostic tool to diagnose is CT scan as it shows more details about the relationship between the tumor and the adjacent structures with better resolution, when compared to conventional radiographies. In our case, the peripheral osteoma was diagnosed clinically and confirmed by panoramic radiograph; nonetheless, the CT scan complemented image investigation, with the goal of enabling a more adequate surgical planning, showing the relationship between the tumor and the adjacent structures.

Differential diagnosis for peripheral osteoma[6]:

a) exostoses (bony excrescences that usually stop growing after puberty, differentiating them from osteomas)
b) osteoblastoma, and osteoid osteoma (more frequently painful and grow more rapidly than peripheral osteoma)
c) late-stage central ossifying fibroma (borders are well-defined, and a thin, radiolucent line may separate it from the surrounding bone. A sclerotic border may be present in the bone next to the lesion)
d) complex odontoma (presents as a well defined radiopacity situated in bone, but with a density that is greater than bone and equal to or greater than that of a tooth. It is also surrounded by a narrow radiolucent rim).

Removal of an asymptomatic peripheral osteoma is not generally necessary. Surgical intervention is indicated only if it becomes large enough to cause facial asymmetry, pain and/or functional impairment.[7] The surgical approach should be case specific. Intraoral or extraoral approaches are used for the mandible. Whenever possible, the intraoral approach is preferable mainly for cosmetic reasons. The sub-labial gingivo-buccal (Caldwell- Luc) approach is convenient for the maxillary antrum. In selected cases Endoscopic techniques have been advocated. For the fronto-orbito-ethmoidal, frontal and temporal lesions the coronal or bi-coronal approaches have been classically used. However, these require an extensive amount of dissection, and carry the potential for significant morbidity, especially considering that the lesion to be resected is benign.[4] In this case an intraoral surgical approach was used for the removal of the lesion.

Recurrence of peripheral osteoma after surgical excision is extremely rare and malignant transformation is not seen. It is always better to keep patient on regular follow ups.

The Gardner's syndrome is consistent with triad of colorectal polyposis, skeletal abnormalities and multiple impacted or supernumerary teeth. The skeletal involvement includes endosteal and peripheral osteomas, mostly found in the skull, ethmoid sinuses, mandible and maxilla. As the osteomas often develop before the colorectal polyposis, thus early recognition of the syndrome may be a life saving event in some cases.[4]

CONCLUSION

Peripheral osteoma is a rare benign osteogenic lesion found in the Oral and Maxillofacial region. The differential diagnosis for any peripheral, solitary, bony hard, slowly growing painless swelling encountered in the maxilla or mandible could be peripheral osteoma. Recurrence rate of peripheral osteoma is extremely rare

after its surgical excision. However, it is advisable to provide both periodic clinical and radiographic follow up after surgical excision of a peripheral osteoma.

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