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Management of Peripheral Osteoma of Hard Palate: A Case Report

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ABSTRACT

INTRODUCTION

Osteoma is a benign osteogenic neoplasm arising from proliferation of compact or cancellous bone. Because of its extreme slow growth rate, it often remains undetectable until attains a large size to cause significant facial asymmetry or other difficulty.

OBJECTIVE

The objective of this study is to report an unusual case of palatal peripheral osteoma in a 33-year-old male patient who had a nodular, hard palatal swelling of about 4.5 mm diameter between teeth #16 and 17, about 7 mm apical to the tip of the papilla since last 2 months.

METHODOLOGY

The visible whitish hard mass resembling an odontome within the swelling had been removed by reflecting full thickness palatal flap and found to be attached with the palatal bone. After removal, it was immediately sent to the oral pathology department for histological analysis.

RESULT

On the basis of radiographic analysis and histologic examination, the lesion appeared as a peripheral osteoma. The healing was uneventful in 3 months follow up, and upto 6 month, no recurrence was found.

CONCLUSION

Cranio-maxillofacial osteomas are benign tumor and not very common entities. Proper diagnosis and precise management alleviates symptoms without any post-surgical complications.

KEYWORDS: benign, osteogenic neoplasm, facial asymmetry, whitish hard mass, swellingpalatal bone, full thickness palatal flap

I. INTRODUCTION

Osteoma is a benign, slow growing tumor composed of mature compact and/or cancellous bone.[1,2] It can be classified as central, peripheral, or extra-skeletal on the basis of the location and origin of the tumor. Central osteoma originates from the endosteum, while peripheral and extra skeletal types originate from periosteum and soft tissue respectively.[3, 4] Osteomas are found mainly in the cranio maxillofacial bones. Peripheral osteomas (PO) are uncommon. Clinically, the PO is usually an asymptomatic slow growing lesion which can produce swelling and asymmetry.[5]The pathogenesis of PO is unclear. Some investigators considerit a true neoplasm, while others classify it as a developmental anomaly. [6] Varbonceur et al.[7] consider that this pathology has a developmental origin and arise from the embryological cartilaginous rests, persistent embryological periosteum cells or the suture between bones. The possibility of a reactive mechanism, triggered by trauma or infection has also been suggested.[8]The association between maxillofacial osteomas, cutaneous sebaceous cysts, multiple supernumerary teeth and colorectal polyposis is known as Gardner's syndrome.[5]Osteomas are usually asymptomatic and appear to have a very slow growth rate. They often remain undetected unless accidentally found on a routine radiographic survey or until they cause facial asymmetry or functional impairment.The osteomas are reported to occur at any age but young adults are more commonly affected by the tumor with no gender predilection.Radiographic appearance of the osteoma is characterized by an oval, radiopaque, well-circumscribed mass approximately 1-4 cm in diameter, with a density similar to that of normal bone. The presence of an 'mushroom shaped'[9] oval, radiopaque well circumscribed mass, attached by a broad base or pedicle to the affected cortical bone is the hallmark of peripheral osteoma.[3] Peripheral osteomas in most cases are fairly easy to recognize and diagnose, because of their unique presentation as radiopaque masses protruding from the periphery of the jawbone.[10]

The purpose of the article is to present a rare case of peripheral osteoma on the palate causing neither facial asymmetry nor pain, but only an irritational factor impinging the pshychologyof the patient.

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II. CASE HISTORY

A 33 years old male patient came to the outpatient department of Periodontology of Kothiwal Dental College and Research Centrewith the chief complaint of irritation with tongue movement caused by the presence of a hard, painless swelling on the right posterior region of palate in relation to first and second molar. This swelling was observed accidentally one week back and since then the size of the mass was constant in size.Patient was psychologically obsessed with the growth in the maxilla and was getting constant irritation in the palate due to constant involuntary movement of the tongue over the growing mass. There was no history of trauma in that region. Medical history was non-contributory. Patient did not feel any pain or difficulty while taking food.

Intraoral examination revealed a well-defined boney hard mass on the palatal aspect of right maxilla in posterior region, which extended from mesio-palatal aspect of upper right first molar to distal end of upper right second molar. The lesion was hard on palpation, sessile and measured 20 x 15 mm in diameter. Lesion was non-tender on palpation with blanching of overlying mucosa.All teeth in upper right quadrant responded normally to electric pulp testing. No regional lymphadenopathy was detected clinically.

On the very first day, after scaling and root planing, curettage had been performed on the interproximal region of 16 17.

After 7 days, when patient had been recalled for surgical removal, it was found that the size of the regional swelling had considerably decreased with prominence of a visible white hard mass in the region. It was completely smooth on palpation, giving entirely a tooth bud like texture and appearance, providing the provisional diagnosis to be odontome or any supernumerary tooth. The tooth like structure was tiny in size [approximately 2x2x2 mm] with no soft tissue covering over it. [Figure 1]

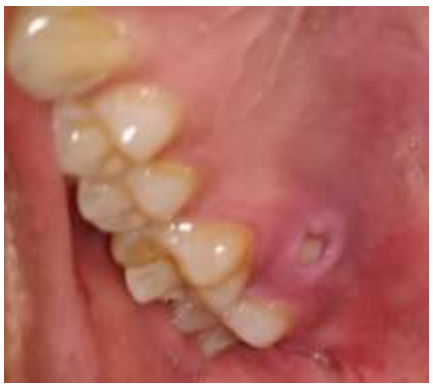

Figure – 1 Pre-Operative view showing a bony hard nodular mass circumscribed with inflamed palatal mucosa

CBCT had also been performed to know the extent of the hard tissue abnormality or regional bony deformity. It showed presence of a solitary, raised, slightly projected radio-opaque hard tissue mass on the interdental palatal aspect of right maxillary first and second molar measuring approximately 4.6 mm antero-posteriorly, 3.5 mm supero-inferiorly and 3.2 mm bucco-palatally with no loss of palatal cortex. [Figure – 2] The lesion seemed to be pedunculated without involvement of any tooth.The radiographic interpretation for this lesion was appreciated to be a palatal exostosis.

On the basis of history and clinical examination the provisional diagnosis was made as palatal exostosis or odontome.

The mass was approached intra-orally under local anesthesia. After giving intracrevicular incision from mesial surface of #15 to distal surface of #17, palatal mucoperiosteal flap was reflected to expose the underlying bone and the tooth like mass. [Figure 3 and 4]The hard tissue mass was tried to get separated from its surrounding bonyattachment, but was in vein because of its firm association with the underlying periosteum. Holding the tooth like mass with tissueforcep, it was tried to detach from its base and it came out separately. [Figure 5]The bony bed was properly debrided and trimmed to give it a healthy contour and then the flap was closed with 4-0 silk suture. [Figure 6] Coe pak was placed

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[Figure 7] and post-operative instruction was given. The mass was 4.5x3x3 mm in size. [Figure 8] The tooth like mass was placed into 10% buffered formalin and sent to the department of Oral Pathology for histological analysis.

The hematoxilin – eosin stained decalcified hard tissue section showed areas of bone demonstrating lamillization and was consisting of –osteocytes within osteocytic lacunae. Foci of section also had shown marrow spaces, [Figure 9] giving final diagnosis in favour of peripheral compact osteoma.

The lesion was reevaluated on 7th [figure – 10]and 15th day [figure – 11], when complete healing was not found. But on 3 month follow up [figure – 12], complete healing was found. On six months follow up, no recurrence was noticed.

III. DISCUSSION

Osteoma is a rare pathologic entity which was first described by Jaffe in 1935.[11]Osteomas are usually asymptomatic, often remain undetected unless incidentally found on a routine radiographic survey or until they cause facial asymmetry or functional impairment.[12]

It is mainly found in the cranio-maxillofacial bone, most frequently in the para nasal sinuses in the maxillofacial area. The most common site is the frontal sinus, followed by the ethmoidal and maxillary sinuses. PO has also been described in the external auditory canal, and rarely in the temporal bone and pterygoid plates.[5]In case of jaw bone, it is more common in mandible rather than maxilla.[12]In the maxilla, osteomas arise from the maxillary sinus, from the buccal plate in molar region and the tuberosity of the maxilla, and from the anterior or posterior part of the maxilla.[13] in our case, this lesion was found inposterior part of maxilla.

Peripheral osteoma can be distinguished into two different types [14], compact and cancellous. The compact or "ivory" osteoma, usually has a sessile base with normal-appearing dense bone with minimal marrow spaces, and occasional haversian canals. The size may range from several millimeters to several centimeters; however, part of the lesion may be in bone, masking the true size. All these features are quite similar with our case but no part of the lesion was embedded within the bone.

Patients with osteomas should be evaluated for Gardner's syndrome [5]. The common symptoms associated with this syndrome include rectal bleeding, diarrhea, and abdominal pain. Patients with

Gardner's syndrome may also show symptoms like colorectal polyposis, skeletal abnormalities, and multiple impacted or supernumerary teeth. Disease usually starts at second decade, and there is a chance of malignant transformation of the colorectal polyps by the age of 40. The skeletal involvement includes peripheral and endosteal osteomas in the skull, ethmoid sinuses, mandible andmaxilla. The mandibular osteomas are usually lobulated and located at the angle of the mandible.[15]

In our case, the patient underwent thorough oral and physical examination to rule out Gardner`s syndrome. Radiograpic evaluation of craniofacial region was done and no impacted and supernumerary teeth and osteomas and odontomes had been found. Patient also gave no history of any gastrointestinal complaints.

Usage of the most effective imaging modality pose a crucial role in the conservative management of the osteomas. Different imaging modalities like occlusal and panoramic radiographs, Waters view, computerized tomography (CT), magnetic resonance imaging (MRI), or CBCT can be used for the radiographic examination of POs.[16] In our case we chose CBCT for achieving better understanding of the lesion.

Management of this type of lesion is not specific, rather it will differ from person to person. Definite treatment should be removal from base of the bone, but in selected cases, for future prosthetic rehabilitation, we can go for a partial removal of bone, and known asymptomatic cases should be evaluated frequently for observing size enlargement.Surgery is indicated if there is painful or active lesion growth, or in order to correct asymmetry or other secondary problems. In our case we have decided to go for surgical excision as it was creating hindrance in tongue movement.

Recurrence of PO after surgical excision is extremely rare. In this case, within 6 month no recurrence had been reported.

IV. CONCLUSION

Peripheral osteoma in palate is extremely rare. Their etio-pathogenesis is still controversial, but definite treatment is surgical excision. Ruling out the possibility of Gardner`s syndrome is important.

Though recurrence is never reported, but periodic checkup is of extreme importance. Asymptomatic lesions may not be excised, but periodic evaluation for size enlargement is of extreme important.

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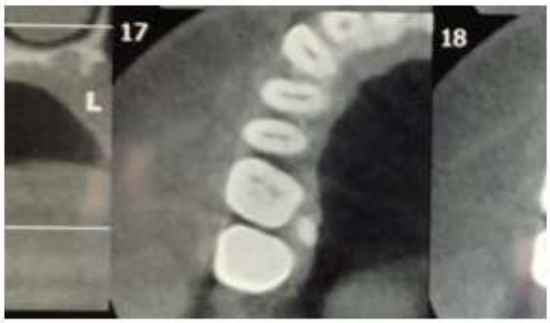

Figure 2 – CBCT showing isolated mass

Figure 3 – Crevicular Incision to expose the mass

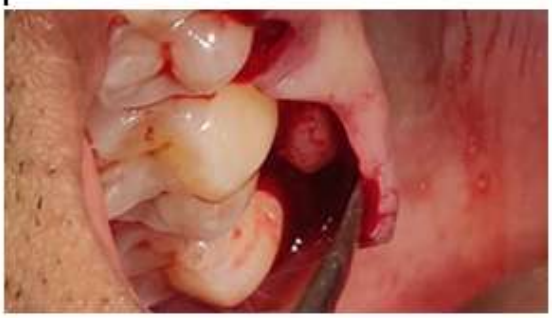

Figure 4 –After reflection ofMucoperiosteal Flap

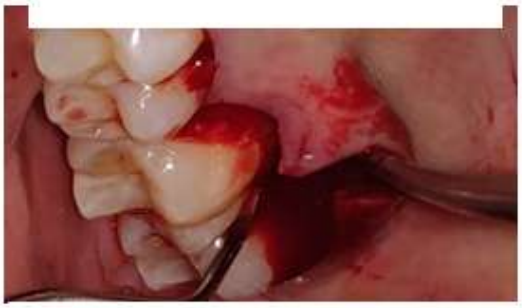

Figure 5 – Tooth like mass removal

Figure 6 – Suture Placed to close the wound

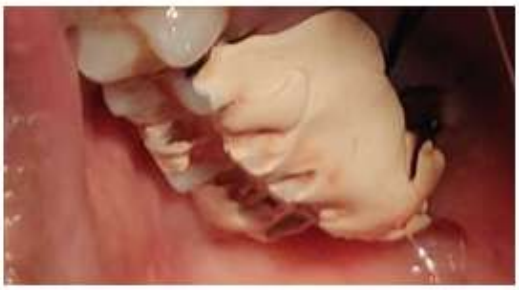

Figure 7 – Co Pack placed as dressing

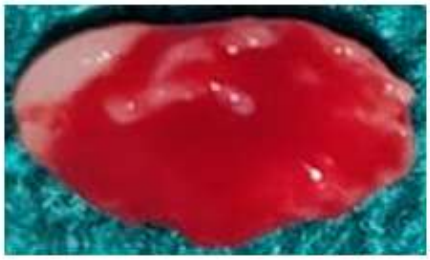

Figure 8 - The Removed Mass

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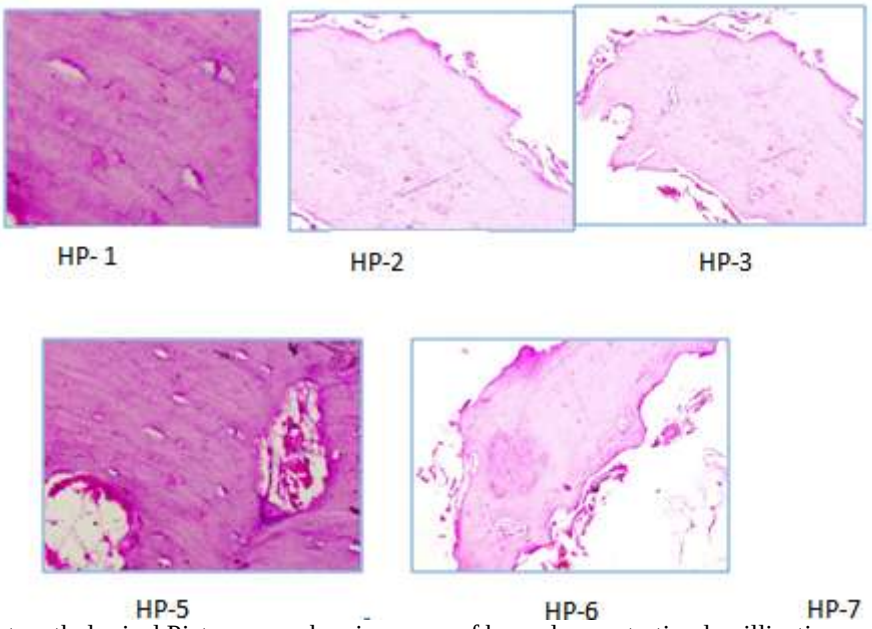

Figure 9 – Histopathological Pictures are showing areas of bone demonstrating lamillization and was consisting of –osteocytes within osteocytic lacunae. Foci of section also had shown marrow spaces

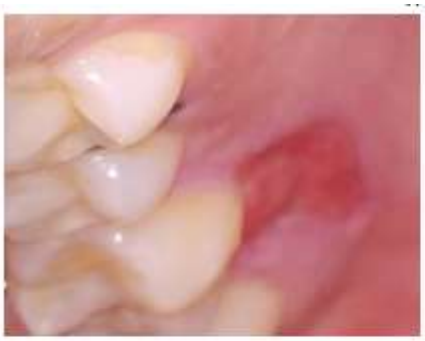

Figure 10 - 7 Days Post Operative view, wound is in healing stage

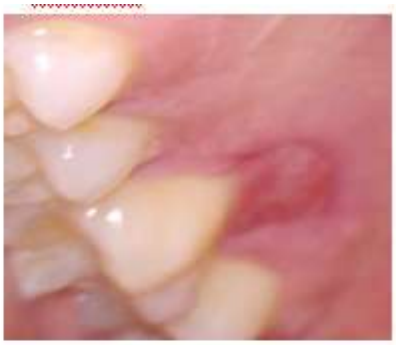

Figure 11 - 15 Days Post Operative, lesion is healing without any complication

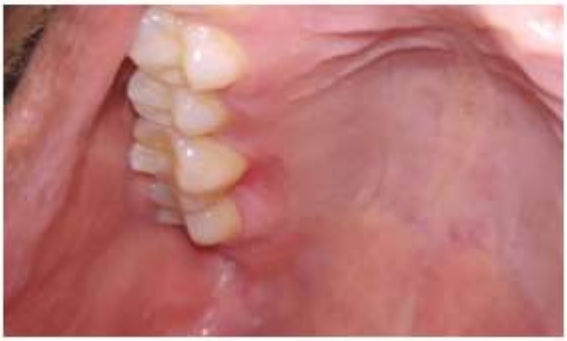

Figure 12 – 3 month Post Operative picture showing complete healing

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