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PERIPHERAL AMELOBLASTOMA-A RARE ODONTOGENIC ANOMALY IN THE SPOTLIGHT

Maxillofacial Surgery

Dr. Valarmathi Murugesan*	CSI college of dental sciences and research Post Graduate Trainee, Oral and Maxillofacial surgery. *Corresponding Author
Dr.Kalaiselvan Sundarrajan	CSI college of dental sciences and research. Reader, MDS, Oral and Maxillofacial surgery.
Dr.Ganesh mithun Rajasekaran	CSI college of dental sciences and research. Senior Lecturer, MDS, Oral and Maxillofacial surgery.
Dr.Nagalingam Duraisamy	CSI college of dental sciences and research Post Graduate Trainee, Oral and Maxillofacial surgery.
Dr. Ruthishankari Chandran	CSI college of dental sciences and research Post Graduate Trainee, Oral and Maxillofacial surgery.

ABSTRACT

Background: Extra-osseous or Peripheral ameloblastoma (PA) is a relatively rare subtype of ameloblastoma, representing 1-2% of all ameloblastomas which is reported with maximum incidence between the fifth and sixth decades of life. Peripheral ameloblastoma develops in the soft tissues of the gingiva and oral mucosa with or without bony invasion coating the tooth bearing areas. **Methods:**In this report we presented a case of 56 year old male patient with a growth over the right mandibular premolar region. On examination, exhibited as a solitary sessile exophytic nodule over the gingival area with tenderness on palpation. Initially the case was misdiagnosed as irritational fibroma underwent conservative excision using diode laser with narrow margins of normal tissue. The final histopathological report confirmed the diagnosis as peripheral ameloblastoma. **Results:** Conservative excision was done as a treatment considering irritational fibroma however it served as a mainstay treatment for peripheral ameloblastoma itself. Patient is scheduled with regular follow-up considering the recurrence of the tumor and as of now we encountered satisfactory healing with no signs of recurrence. **Conclusion:**Although exceptionally rare, the peripheral ameloblastoma represents an interesting variant of the centrally occurring ameloblastoma and appears to have a peculiar predilection for the gingival mucosa often leading to misdiagnosis as normal soft tissue growth.

KEYWORDS

Benign, Jaw tumor, Laser excision, Mandibular gingiva, Peripheral ameloblastoma, Polypoidal growth.

INTRODUCTION:

Peripheral ameloblastoma (PA) is a benign neoplasm or hamartomatous lesion confined to the soft tissues overlying the tooth-bearing areas of the jaws or alveolar mucosa in the edentulous area and considered to be originated from the cell rest of Serres, the remnants of reduced enamel epithelium and the basal cells of the surface epithelium. The term "peripheral ameloblastoma" was first coined by Kuru in 1911 and until 2014 less than 200 cases of PA have been reported [1].

In this article we discussed about a case of extra-osseous ameloblastoma over the mandibular gingiva mimicking fibrous overgrowth and treated surgically by means of conservative excision.

CASE DESCRIPTION AND RESULTS:

A 56 year old male patient presented to the Department of Oral and Maxillofacial Surgery with pain over the lower right back tooth region of the jaw for the past 4 months. He experienced localized dull-aching pain with gradually progressive swelling associated with malodour. On examination, a well defined solitary sessile exophytic growth which was pale pink with erythematous margins of size 1.5 x 1 cm approx. evident over the lingual aspect of 45,46 region along with tenderness on percussion. On palpation, consistency was firm with no bleeding or pus discharge (Figure 1). Provisional diagnosis was made as irritational fibroma owing to its clinical presentation and local factors.

Cone Beam Computed Tomography (CBCT) was taken which reveals exophytic soft tissue growth with evidence of bony remnant involving crestal cortex of 45 region suggestive of irritational fibroma (Figure 2). In accordance with the radiological and clinical features conservative surgical excision was planned under Local Anesthesia (LA).

Under LA, excision of the fibrous overgrowth was done by means of Diode laser to achieve precise removal of the lesion with narrow margins of normal tissue (Figure 3). Histopathological examination reveals hyperkeratotic stratified squamous epithelium with hyperchromatic follicular islands in odontogenic stroma suggesting Peripheral Ameloblastoma as final diagnosis (Figure 4).

6 months post-operative healing was satisfactory and patient is scheduled on regular follow up visits to rule out recurrence of the tumor (Figure 5).

DISCUSSION:

Peripheral ameloblastomas form a rare sub type, comprising only 1% - 5% of all ameloblastomas and they feature more benign behaviour than other types with minimal bony involvement. Peripheral ameloblastomas occur primarily in the mandible (70.9% vs. 29.1% in the maxilla) and most frequently present in the gingival tissue with a male:female ratio of 1.9:1 [2] and a reported maximum incidence between the fifth and sixth decades of life [3]. Clinically presented as a painless, sessile, firm and exophytic growth of the gingival which is relatively smooth but in cases granular or warty with normal pink to reddish in colour [4].

Tumour depth, local invasion, and margin boundaries are challenging to assess accurately either clinically or radiographically and the decision to include healthy surrounding tissue in the margin is guided partly by tumour location (for example, proximity to important anatomical structures) and patient factors [2]. Prompt formal diagnosis of the tumor requires histological examination to exclude other peripheral odontogenic tumours.

Differential diagnosis considered were Pyogenic granuloma, Ossifying fibroma and Osteoid osteoma based on the clinical presentation and we highlighted the importance of histopathological examination in differentiating the tumor variants. Conservative excision was done as a treatment considering irritational fibroma however it served as a mainstay treatment for peripheral ameloblastoma itself. On review of current literature [2]:

- Primary surgical excision of peripheral ameloblastoma should involve the lesion in its entirety, including a cuff of normal tissue,

generally without the removal of teeth
- Long-term follow up of at least 10 years of both primary and recurrent lesions.
- Significant bony resection or the removal of teeth is rarely necessary and should be avoided where possible to reduce surgical morbidity.

On the other hand, dense fibrous tissue of the gingiva, periosteum, and the cortical plate of the alveolar process forms an effective barrier to the infiltration of peripheral ameloblastoma justifying conservative local excision of the tumor [4].

However, the recurrence rate of PA is 16% with an average follow-up of about 3 years added to malignant transformation as reported in several cases [5]. Ide et al, reported a case of malignant peripheral ameloblastoma with metastasis and they suggested that large size (more than 2 cm in diameter) is a powerful predictor of aggressive behavior [6].

In our case we encountered a tumor of size less than 2 cm which favours the local excision using diode laser serving less intraoperative bleeding and swelling, better coagulation, minimal operative time and post surgical pain. Recent reviews suggest the significance of surgical excision with a narrow margin of normal tissue with a minimum follow-up of 10 years [7].

CONCLUSION:

Several reports of peripheral ameloblastoma are either incomplete or diagnostically unacceptable [8]. Complete surgical excision of the tumor is advised with thorough microscopic evaluation of the margins for any odontogenic islands, which may contribute to recurrences. Long term follow up is critical to monitor for both recurrence and potential malignancy.

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DECLARATION OF THE PATIENT CONSENT:

Patients consented to clinical case report and images been discussed as part of this publication.

CONFLICTS OF INTERESTS:

We declared that no known competing financial interests or personal relationships appeared to influence the work reported in this paper.

FIGURES:

FIGURE LEGENDS:
Figure 1: Pre-operative picture of the growth in relation to the mandibular gingival region

Figure 2: CBCT reveals an exophytic soft tissue growth with evidence of bony remnant involving crestal cortex of 45 region.

Figure 3: (a) Excision of the lesion with diode laser. (b) Denuded base of the lesion after excision.

Figure 4: Histopathological examination reveals hyperkeratotic stratified squamous epithelium with hyperchromatic follicular islands in odontogenic stroma

Figure 5: Post-operative (6 months) picture showing satisfactory healing and no signs of recurrence

Figure 1:

Figure 2:

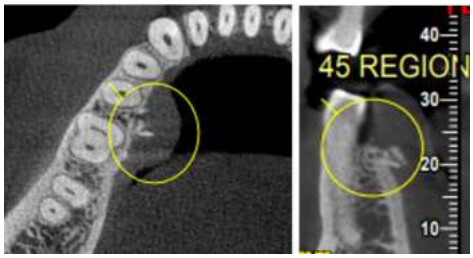
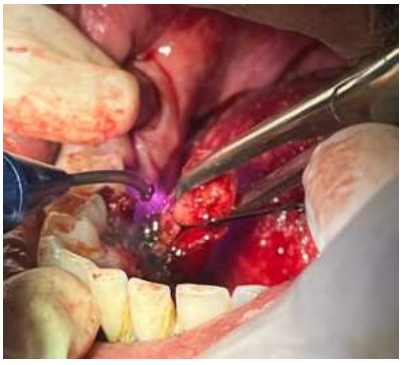
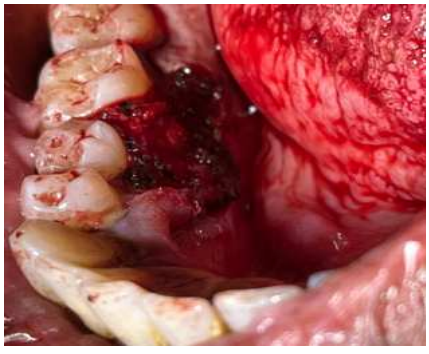


Figure 3:



A



B

Figure 4:

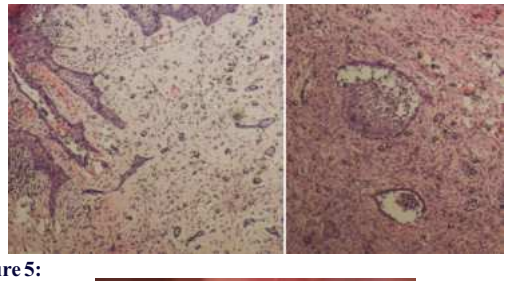
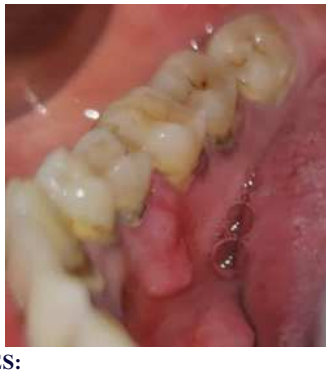


Figure 5:



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