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Peripheral Ossifying Fibroma: A Case Report

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Abstract

Peripheral ossifying fibroma (POF) is one of the inflammatory reactive hyperplasia of gingiva. It represents a separate clinical entity rather than a transitional form of pyogenic granuloma and shares unique clinical characteristics and diverse histopathological features. The lesion occurs over a wide age range with females being affected more often than males. Furthermore, the POF has a propensity to occur in the incisor cuspid area affecting maxilla more than the mandible. POF is known to arise as a focal exophytic mass exclusively on the gingiva commonly appearing to originate from the interdentally gingiva and does not commonly involve the underlying bone. Irritation to the gingiva by calculus, plaque, ill-fitting dentures, and hormonal influence has been considered in the etiopathogenesis. Here, we represent a case report of 21 year old male patient with a solitary gingival enlargement in the left maxillary posterior region i.r.t 24, 25, 26. Patient gives the history of excision of enlargement one year before. The enlargement reappeared three months back. On current examination the lesion was approximately 1.2×1.5 cm size and was found to be reddish in color, irregular in shape, sessile, non-lobulated, firm in consistency and non-tender on palpation. On histological examination it was diagnosed as peripheral ossifying fibroma.

Keywords: Calcifications, Fibroma, Gingiva, Peripheral ossifying fibroma, Reactive lesion.

Introduction

Benign neoplasm of the periodontal tissues are characterised by progressive growth without remarkable symptoms. The growth is measured in terms of months or years and they are often found incidently on routine examination.[1] Gingival enlargement, particularly those belonging to the reactive group are frequently encountered in the oral cavity in the daily practice.[2]

The different kind of localized reactive lesions seen on the gingiva, include focal fibrous hyperplasia, peripheral giant cell granuloma, pyogenic granuloma and peripheral ossifying fibroma (POF).[3] These reactive lesions are innocuous in nature, rarely presenting with aggressive clinical features.[2] Synonyms of POF are peripheral fibroma with calcification, peripheral cementifying fibroma, calcifying or ossifying fibroid epulis.[3]

POF was first reported by the Shepherd in 1844 as alveolar exostosis.[4] Eversol and Robin in 1972, later coined the term peripheral ossifying fibroma.4 Reactive or inflammatory lesions represent more than 90% of the gingival biopsies with the most common ones being pyogenic granuloma, peripheral giant cell granuloma, fibrous epulis and peripheral ossifying fibroma. These have been known to arise in response to various local irritants such as presence of microbial plaque calculus, overhanging margins of restorations, ill-fitting prosthesis, and orthodontic appliances.[5] Peripheral ossifying fibroma is a relatively common reactive and non-neoplastic gingival lesion, believed to arise from the cells of the gingival corium, periosteum or periodontal ligament and accounting for almost 15% of the solitary gingival growths.[6] It manifests itself as a sessile or pedunculated mass less than 2 cm in diameter found exclusively on the gingival tissues, usually emanating from the inter-dental papilla between adjacent teeth. The color ranges from pink to red and the surface is mostly ulcerated. It has been reported in a diverse age range, but is most often seen in the second decade of life with a higher predilection for occurrence in females.[7] The maxillary gingiva is involved more often than the mandibular gingiva; the incisor cuspid region being most commonly affected.[8] The involvement of the teeth is rare; and when present mobility, loosening and/ or migration of adjacent teeth are observed. Conservative surgical excision is usually curative but a high recurrence rate varying from 8 to 20% has been reported by various researchers with an average time interval before the lesions recurs being approximately 12 months.[6,5,9,10]

Histological, the POF consists of a fibro cellular component with focal deposits of bone, some cementum as well as irregular amounts of decalcification.[11] Here, we present one such case of solitary enlargement in the maxillary gingiva.

Case Report

A 21-year-old male patient reported to the Department of Period ontology, Rama Dental College and Hospital, Kanpur with a solitary gingival enlargement arising from interdentally gingival i.r.t 24, 25, 26. Patient gave the history of excision of enlargement one year before. The enlargement reappeared three month back. The lesion was approximately 1.2 mm × 1.5 cm size and was found to be reddish in color, circular in shape, sessile, non-lobulated, firm in consistency and non-tender on palpation (Figure 1). Radiographic examination revealed slight interdentally horizontal bone loss was seen i.r.t 24, 25 and there was widening on PDL space i.r.t 25, 26 (Figure 2). The non-surgical treatment was done to relieve the inflammatory component of the lesion. Following this, the written consent from the patient's parents was taken and the surgical excision of the lesion along with curettage was done under L.A (Figure 3). The excised tissue (Figure 4) was sent for histopathological examination. The histopathology report revealed par keratinized stratified squamous epithelium with underlying highly cellular connective tissue stroma. The connective tissue stroma showed both fibrous and mineralized component with abundant endothelial lined oedematous proliferating blood vessel of varying shapes and sizes with perivascular inflammation, few areas of dystrophic calcifications and abundance of lympho-plasmacytic inflammatory infiltrate (Figure 5). Thus, the diagnosis of POF was confirmed. The follow-up of the case for 1 year showed normal healing of the area with no recurrence. (Figure 6).

Discussion

Gingiva is one of the anatomical regions in the oral cavity with the broadest array of lesions ranging from inflammatory to neoplastic. It is also the exclusive location for the occurrence of POF that accounts for 9.6% of all the gingival lesions. [12]

Fibromas of the gingiva originate mainly from the periodontal ligament or the connective tissue. Ossifying fibroma is a benign neoplasm which arises mainly in the craniofacial bones, the lesion being well demarcated from the adjacent bone and histologically composed of proliferating fibroblasts along with interspersed bone or calcified masses. Ossifying fibromas can be majorly divided into: central and peripheral. The base of origin for the central type lies either in the endosteum or the periodontal ligament adjacent to the apex of the root, that over a period causes the expansion of the medullary space producing the associate extra oral swelling whereas the peripheral type arises in relation to the soft tissues in the tooth-bearing areas of the jaws.[13,14]

The nomenclatures of POF have various controversies associated. Various terms have been used including peripheral fibroma with calcification, peripheral cement-ossifying fibroma, ossifying fibro-epithelial polyp, peripheral fibroma with cement genesis, peripheral cementifying fibroma, calcifying or ossifying fibrous epulis, calcifying fibroblastic granuloma and peripheral fibroma with ontogenesis to describe POF contributing to extreme confusion. Shepherd (1844) reported POF as "alveolar exostosis". In 1972, ever sole et al. coined the term POF which is widely used minimizing the problem of Misnomer. [2]

Till date the precise aetiology of POF is unknown. Various factors have been addressed in literature which are believed to predisposing factors for the development of POF including trauma to gingiva, plaque accumulation, calculus, masticatory forces, poor- fitting appliances, mutilated teeth, poor quality or damaged restorations and ill-fitting crowns.[15]

Clinically POF presents as smooth lobulated pink mass on a pedunculated or sessile base. It has an increasing incidence in second decade and declining incidence after third decade.[16] Only 0.5% cases are reported in older age group.[4] There is a female predilection for the lesion due to the hormonal influences.[17] POF is usually seen anterior to molars, especially in incisor canine region.[18] Multicentre POF can also occur in oral and maxillofacial region [16] and is observed in genetic associated conditions like Nevoid basal cell carcinoma syndrome, Multiple endocrine neoplasia type II , Neurofibromatosis and Gardner syndrome.[16]

POF may range radio graphically from no change to destructive changes depending on the duration of the lesion. In certain cases, cupping defect and focal areas of radio paque calcifications at the centre of the lesion along with the superficial erosion of the underlying bone, can be seen.[18] The histologic evaluation of biopsy specimen is the basis of the definitive diagnosis of POF. Histologically, the key feature of this lesion is exceedingly cellular mass of connective tissue with delicate fibrillar stroma, along with large number of plump, proliferating fibroblasts intermingled throughout.

Buchner and Hansen [19] observed that the mineralized tissues observed in POF can be of three basic types: (1) Bone that may be woven, lamellar or trabecular, sometimes surrounded by osteoid, (2) cementum like material that appears as spherical bodies resembling cementum or large coalesced a cellular round to oval eosinophilic bodies (3) dystrophic calcification ranging from small clusters

of minute basophilic granules or tiny globules to large, solid irregular masses. [6]

Treatment of choice for peripheral ossifying fibroma is complete excision with periodontal and periosteal component. In addition, plaque and calculus removal is required. Generally rate of recurrence is 8.9 to 20% and it is due to incomplete removal or repeated injury. [20]

Conclusion

POF has a limited growth potential with a slow growing pace. Many cases will progress for a long period before patients seek treatment due to its asymptomatic nature as in present case. Etio-pathogenesis of POF still remains unclear although origin from PDL is considered, recent reports of multicentre a lesion also goes in favour of genetic involvement. Unfortunately, little is known in respect to molecular or genetic profile of these lesions; therefore, further analysis like karyo typing may give insight into chromosomal or genetic abnormalities that could be present and whether or not they are constitutional and can be passed to offspring. It is clinically difficult to diagnose, so histopathological confirmation is mandatory. Complete surgical excision down to the perio steum is preferred treatment and as the recurrence rate is high (18-20%), close post- operative follow-up is required.

References

1. Malathi K, Annapoorani Subramanian D, Jenapriya R, Muthukumaran A. Peripheral ossifying fibroma–a case report.
2. Chandwani M, Fernandes G. Peripheral ossifying fibroma: Review and case report. Biomedical Research and clinical practice.2018 july.
3. Bhasin M, Bhasin V, Bhasin A. Peripheral ossifying fibroma. Case reports in dentistry. 2013; 2013.
4. Chaturvedi R, Gupta M, Jain A. Peripheral ossifying fibroma: A case report. Indian Journal of Dentistry. 2012 Apr 1; 3(2):89-93.
5. Mohiuddin K, Priya NS, Ravindra S, Murthy S. Peripheral ossifying fibroma. Journal of Indian Society of Periodontology. 2013 Jul; 17(4):507.
6. Arunachalam M, Saravanan T, Shakila KR, Anisa N. Peripheral ossifying fibroma: A case report and brief review. SRM Journal of Research in Dental Sciences. 2017 Jan 1; 8(1):41.
7. Rajasekaran K, Subramanian S, Kandasamy J, Govindasamy R. Peripheral ossifying fibroma in premolar-A rare case report. Journal of International Oral Health. 2017 May 1; 9(3):130.
8. Buchner A, Hansen LS. The histomorphologic spectrum of peripheral ossifying fibroma. Oral Surg Oral Med Oral Pathol. 1987; 63(4):452e461.
9. Cuisia ZE, Brannon RB. Peripheral ossifying fibroma-a clinical evaluation of 134 pediatric cases. Pediatr Dent. 2001; 23:245e248.
10. Das UM, Azher U. Peripheral ossifying fibroma. J Indian Soc Pedod Prev Dent. 2009;27(1):49e51.
11. Eversole LR, Rovin S. Reactive lesions of the gingiva. J Oral Pathol 1972; 1:30-8.
12. Mishra MB, Bhishen KA, Mishra S. Peripheral ossifying fibroma. J Oral Maxillofac Pathol 2011; 15:65-8.
13. Bhaskar SN, Jacoway JR (1966) Peripheral fibroma and peripheral fibroma with calcification: report of 376 cases. J Am Dent Assoc 73: 1312-1320. [Crossref]
14. Keluskar V, Byakodi R, Shah N (2008) Peripheral ossifying fibroma. J Indian Acad Oral Med Radiol 20: 54-56. [Crossref]
15. Gardner DG (1982) The peripheral odontogenic fibroma: an attempt at clarification. Oral Surg Oral Med Oral Pathol 54: 40-48. [Crossref]
16. Jain A, Deepa D. Recurrence of peripheral ossifying fibroma: A case report. People's J Sci Res 2010;3:23-5.
17. Effiom OA, Adeyemo WL, Soyele OO. Focal reactive lesions of the Gingiva: An analysis of 314 cases at a tertiary Health Institution in Nigeria. Niger Med J 2011; 52:35-40.
18. Kendrick F, Waggoner WF (1996) Managing a peripheral ossifying fibroma. ASDC J Dent Child 63: 135-138. [Crossref]
19. Buchner A, Hansen LS. The histomorphologic spectrum of peripheral ossifying fibroma. Oral Surg Oral Med Oral Pathol 1987; 63:452-61.
20. Shah M, Rathod CV, Shah V. Peripheral ossifying fibroma – a rare type of gingival overgrowth. J Indian Soc Periodontol. 2012; 16(2):275-7.

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Photos

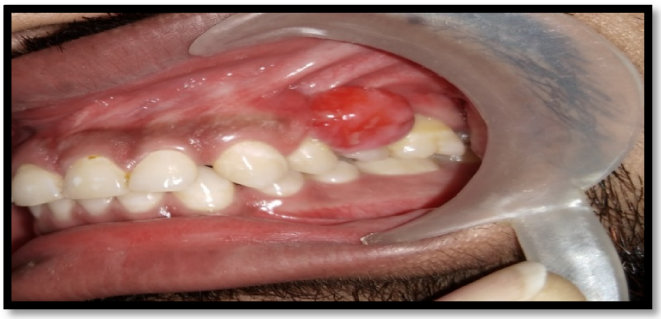

Figure 1: Intra-oral picture showing solitary gingival mass i.r.t 24, 25 and 26.

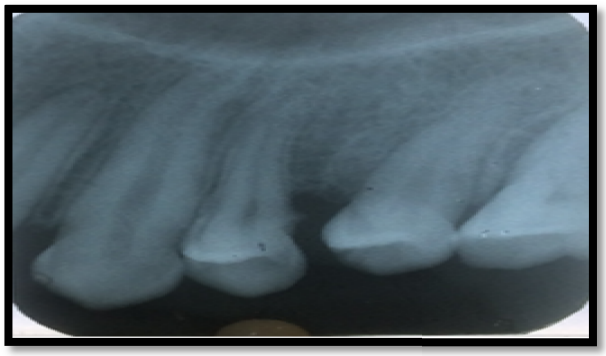

Figure 2: Intra Oral Periapical Radiograph showing horizontal bone loss i.r.t. 24 and 25.

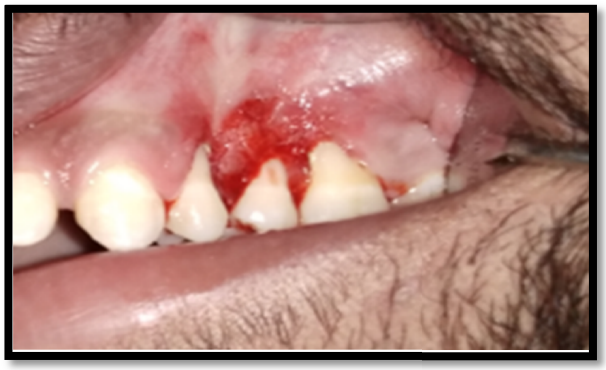

Figure 3: Immediate post-operative photo after excision of gingival enlargement i.r.t 24, 25 and 26 region.

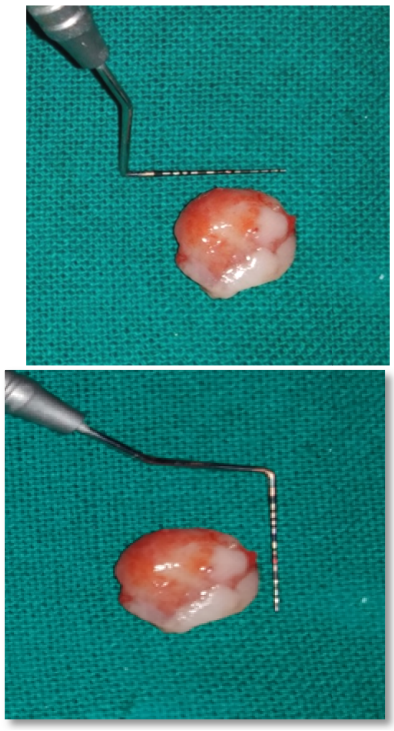

Figure 4: Excised Lesion.

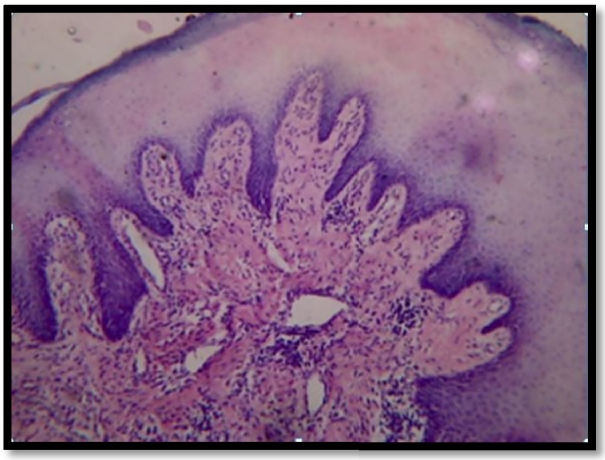

Figure 5: Histological section revealing hyper keratinized stratified squalors epithelium with fibro vascular connective tissue. The epithelium showing slender rete ridges and connective tissue exhibiting reticular arrangement of collagen bundles interrupted with vital bone.

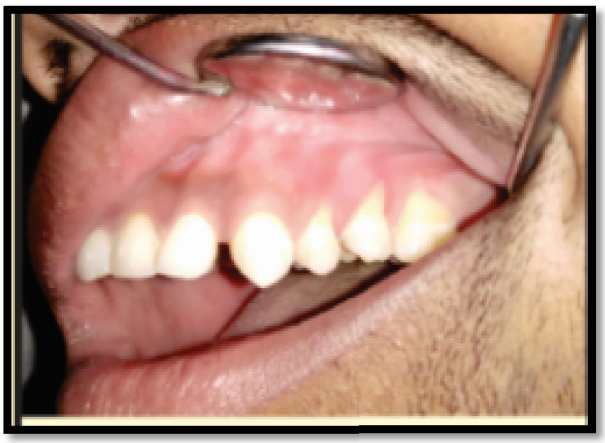

Figure 6: One year post-operative photo showing no reoccurrence of lesion.