EUROPEAN JOURNAL OF BIOMEDICAL AND PHARMACEUTICAL SCIENCES
http://www.ejbps.com

ISSN 2349-8870
Volume: 3
Issue: 10
278-281
Year: 2016

PERIPHERAL OSSIFYING FIBROMA: A CASE REPORT AND REVIEW OF LITERATURE

Ayushee Kesari*[1], Manjula Hebbale[2], Amit Mhapuskar[3], V. V. Kulkarni[4], Rashmi Agarwal[1]

[1]Post Graduate Student of Department of Oral Medicine and Radiology, Bharati Vidyapeeth Deemed University Dental College and Hospital, Pune, India.
[2]Associate Professor of Oral Medicine and Radiology, Bharati Vidyapeeth Deemed University Dental College and Hospital, Pune, India.
[3]Head of the Department of Oral Medicine and Radiology, Bharati Vidyapeeth Deemed University Dental College and Hospital, Pune, India.
[4]Professor of Oral Pathology, Bharati Vidyapeeth Deemed University Dental College and Hospital, Pune, India.

***Corresponding Author: Dr. Ayushee Kesari**
Post Graduate Student of Department of Oral Medicine and Radiology, Bharati Vidyapeeth Deemed University Dental College and Hospital, Pune, India.

Article Received on 03/08/2016 **Article Revised on 24/08/2016** **Article Accepted on 15/09/2016**

ABSTRACT
Many types of localized reactive lesions may occur on the gingiva, including focal fibrous hyperplasia, pyogenic granuloma, peripheral giant cell granuloma, and peripheral ossifying fibroma (POF). These lesions may arise as a result of such irritants as trauma, microorganisms, plaque, calculus, restorations, and dental appliances. The purpose of this article is to present a case report of POF, briefly review the current literature on this condition, and emphasize the importance of discussion of a reasonable differential diagnosis with the patient or a parent.

KEY WORDS: Calcification, gingiva, ossifying fibroma, peripheral.

INTRODUCTION
Peripheral ossifying fibroma (POF) is a nonneoplastic enlargement of gingiva that is classified as a reactive hyperplastic inflammatory lesion, a common gingival growth, which is typically seen on the interdental papilla and is believed to comprise about 9% of all gingival growths.[1] These lesions are well demarcated from the adjacent bone and are of two types; the central type and the peripheral type. The central type arises from the endosteum or the periodontal ligament (PDL) adjacent to the root apex and causes expansion of medullary cavity. The peripheral type occurs solely on the soft tissues overlying the alveolar process.[2,3]

POF was first reported by Shepherd in 1844 as alveolar exostosis. Eversol and Robin (1972) later coined the term peripheral ossifying fibroma.[4] It occurs in the younger age groups with a female preponderance. It has a predilection for maxillary arch and most of them occur in the incisor cuspid region.[5]

Other terms used for POF are peripheral odontogenic fibroma, ossifying fibroma epulis, ossifying fibroma with calcification[6], calcifying fibroma, peripheral cemento-ossifying fibroma, ossifying fibroepithelial polyp, and calcifying fibroblastic granuloma.[7]

The pathogenesis of this lesion is uncertain and is thought to arise from the periosteal and periodontal membrane[8]. Trauma or local irritants, such as dental plaque, calculus, microorganisms, masticatory forces, ill fitting dentures, and poor quality restorations have been implicated in the etiology of POF.[8,9] A possible hormonal influence has also been considered mainly because POFs are rare in prepubertal patients. However, a recent study failed to demonstrate the expression of estrogen or progesterone receptors in the proliferating cellular component. An important clinical aspect of POF is the high recurrence rate, which ranges from 8% to 45%. POF shows a clinically benign behaviour.[10]

CASE REPORT
A 46-year-old female patient reported to the department of oral medicine and radiology with chief complaint of getting missing teeth replaced. The medical and dental history was non-contributory. On intra oral examination FIG 1, a solitary well defined ovoid shaped sessile growth measuring approximately 2X1 cm was present on lower left lingual alveolus in relation to 34 and 35. It extends anterioposteriorly from lingual marginal gingiva from distal aspect of 33 to distal aspect of 35, superior-inferiorly from lingual attached gingiva of 34 and 35 to floor of the mouth. The overlying mucosa present over the growth appeared to be pale pink and smooth. On palpation, it was bony hard in consistency, non tender.

The mucosa over the growth was smooth and non-movable. There were no signs of pus discharge and bleeding on provocation. Keeping the clinical picture in mind the provisional diagnosis of peripheral ossifying fibroma on lower left lingual cortex was made and a differential diagnosis of bony exostosis, fibroma, epulis, peripheral gaint cell granuloma was considered.

The investigations advised and done were, Intraoral periapical radiograph of 34 35 region, Mandibular true occlusal radiograph and Excisional biopsy.

Intraoral periapical radiograph revealed a solitary well defined oval shaped mixed radiopaque radiolucent pathology measuring 1.5X 0.8 cm approx., superimposing over the middle third of the root of 35 (fig 2).

On mandibular true occlusal, a well-defined oval shaped mixed radiopaque radiolucent structure is seen on left side of lingual cortex of mandible (fig3). There was no effect on the surrounding pathology is seen. An incisional biopsy (fig4,5,6) was carried out which showed atrophic and hypo plastic stratified squamous epithelium; the connective tissue showed dense collagen fibres, plump fibroblast and enlarged blood vessels at places, deeper connective tissue shows flakes of calcification and cementum like material (fig 7). The overall picture is suggestive of peripheral ossifying (cementifying) fibroma. So final diagnosis of peripheral ossifying fibroma was made.

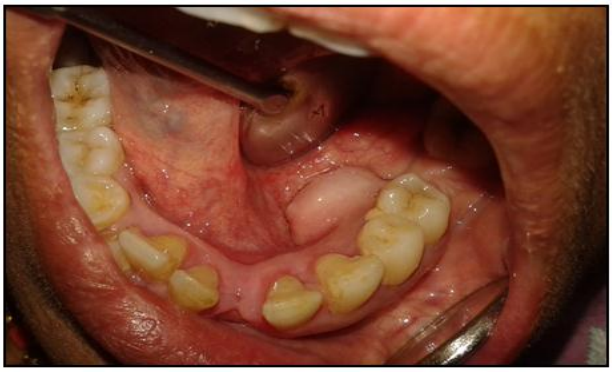

FIG 1- Intra- oral picture

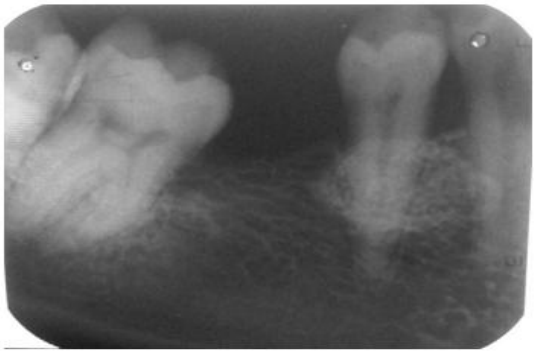

Fig 2- IOPA

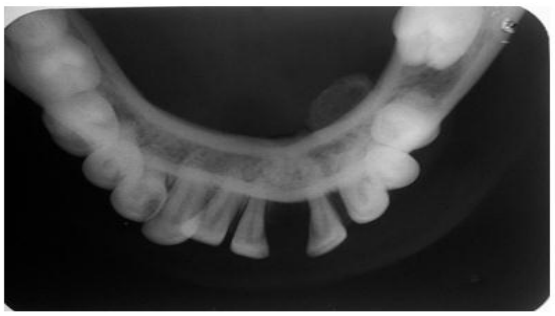

Fig 3- mandibular true occlusal radiographs

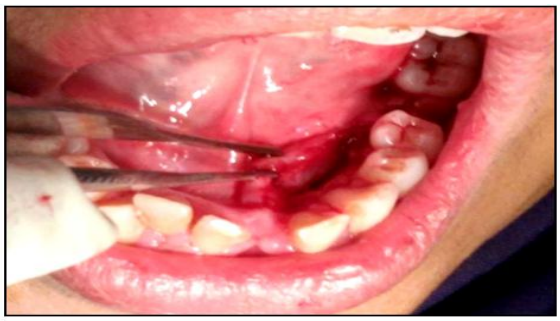

FIG 4- Intra-operative picture

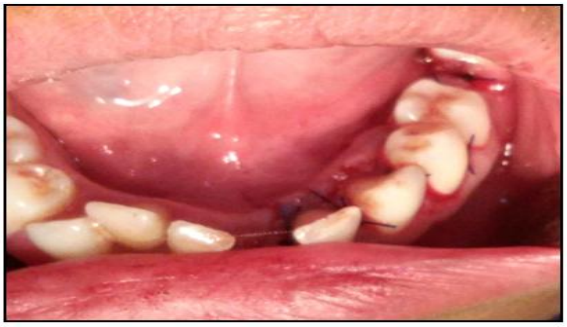

FIG 5- Post-operative picture

FIG 6- Specimen

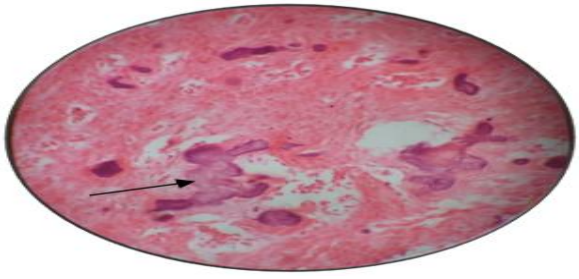

Fig 7- 40 X histopathological picture

DISCUSSION

Gingiva is one of those anatomical regions in the oral cavity with the broadest array of lesions occurring ranging from inflammatory to neoplastic. POF is one such reactive lesion, which occurs exclusively on gingiva. Although, intra-oral ossifying fibromas have been described in the literature since the late 1940s, still there are lot of theories and various schools of thoughts regarding its pathogenesis. The widely accepted etio-pathogenesis for POF is the inflammatory hyperplasia of the cells of the periosteum or periodontal ligament; as there is excessive proliferation of mature fibrous connective tissue in response to gingival injury, gingival irritation, sub-gingival calculus or a foreign body in the gingival sulcus. Chronic irritation of the periosteal and periodontal membrane causes metaplasia of the connective tissue and resultant initiation of formation of bone or dystrophic calcification. An origin from cells of periodontal ligament has been suggested because of exclusive occurrence of POF from interdental papilla, the proximity of gingiva to periodontal ligament, the presence of oxytalan fibres within the mineralized matrix of some lesions, the age distribution which is inversely related to the number of lost permanent teeth, and the fibro-cellular response similar to other reactive gingival lesions of periodontal ligament origin.[11]

It is a fairly common lesion, comprising nearly 3% of oral lesions biopsied in 1 study, approximately 1–2% in other studies.[12] In 1993, Das and Das obtained similar results, with 1.6% POFs among 2370 intraoral biopsies.[13] POF may present as a pedunculated nodule, or it may have a broad attachment base.[14,15] These lesions can be red to pink with areas of ulceration, and their surface may be smooth or irregular. Although they are generally <2 cm in diameter[16], size can vary; reports range from 0.2–3.0 cm to 4–8 cm[17] and some lesions may be as large as 9 cm in diameter. Cases of tooth migration and bone destruction have been reported, but these are not common.[18]

POF has always been described as a solitary, slowly growing nodular mass as in our case also, but Kumar *et al*. reported a unique case of multi-centric POF affecting maxillary and mandibular gingiva.[19] The POF must be differentiated from tori and exostosis, traumatic fibroma, PGCG, pyogenic granuloma, and peripheral odontogenic fibroma (PODF).

Tori and exostosis, they are the most common oral exophytic lesion. They are peripheral, benign, slow growing bony protuberance of the jaw having smooth contours covered with normal mucosa. On palpation they are hard and are attached by a broad bony base to underlying jaw. Most common age of occurrence is 30 years and females are more affected than males. Most common site is lingual aspect of the mandible above mylohyoid ridge in premolar region. Our case showed lot of simulation except that the fact tori and exostosis is mostly seen bilaterally whereas in our case it is unilaterally present.[20]

Traumatic fibroma or Fibrous hyperplasia (FD), they are the healed end product of inflammatory hyperplasia lesion which can occur because of trauma or chronic irritation to an area and these lesions are not a true neoplasm. Consequently, it is really an aggregate of scar tissue covered with smooth layer of stratified squamous epithelium. These are the second most common oral exophytic lesion. They are most often sessile or slightly pedunculated with a smooth contour, pale pink and firm to palpation. If traumatic fibroma, occurs on buccal mucosa along the bite line. Other site of FD is on the gingiva, tongue, buccal mucosa and palate. Though the most common site of its occurrences is similar to that of our case but there was bony hard consistency was felt on palpation which was not present in case of fibrous hyperplasia.[20]

Pyogenic granuloma presents as soft, friable nodule, small in size that bleeds with a tendency to haemorrhage and may or may not occasionally or do not show calcifications, but tooth displacement and resorption of alveolar bone are not observed.[8,16,20]

PGCG has clinical features similar to POF, however, POF lacks the purple or blue discoloration commonly associated with PGCG and radiographically shows flecks of calcification, and also PGCG contains giant cells which are lacking in POF.[8,16]

The PODF has also been used to describe POF, but it should be avoided since PODF has been designated by the World Health Organization as the rare and extraosseous counterpart of central odontogenic fibroma, and also it contains odontogenic epithelium and dysplastic dentin; these features are not seen in POF.[8,16] Histologically, this malady is a noncapsulated mass of cellular fibrous connective tissue with randomly distributed calcifications and/or mature bone.[21] The POF lesion is generally small and does not require imaging beyond radiographs.[22] Roentgenographically, in a vast majority of cases, there is no apparent visible underlying bone involvement. On rare occasions, there appears to be superficial erosion of bone. In the present cases also, underlying bone involvement was not observed.[21, 23] In rare instances, superficial erosion of bone is noted.[24] When presented clinically with a gingival lesion, it is important to establish a differential diagnosis. In this case, the clinical features led to a differential diagnosis of irritation fibroma, pyogenic granuloma. Although it is also important to maintain a high index of suspicion,discussion with family members should be tactful to prevent undue distress during the waiting period between differential diagnosis and definitive histopathological diagnosis.

Due to the high rate of recurrence (8–20%), close postoperative monitoring is required in all cases of POF.

POF recurs due to (1) the incomplete removal of the lesion, (2) the failure to eliminate local irritants, and (3) difficulty in accessing the lesion during surgical manipulation as a result of the intricate location of the lesion (usually an interdental area).[25]

CONCLUSION

POF is a slowly progressing lesion, the growth of which is generally limited. Many cases will progress for long periods before patients seek treatment because of the lack of symptoms associated with the lesion. Close postoperative follow‐up is required because of the growth potential of incompletely removed lesions and the 8–20% recurrence rate.

REFERENCE

1. Poonacha KS, Shigli AL, Shirol D. Peripheral ossifying fibroma: A clinical report. Contemp Clin Dent 2010; 1: 54‐6.
2. Killi VP, Penmatsa T, Narendra R. Peripheral ossifying fibroma: A case report. Int J Case Rep Imag 2012; 3: 11‐4.
3. Keluskar V, Byakodi R, Shah N. Peripheral ossifying fibroma. J Indian Acad Oral Med Radiol 2008; 20: 54‐6.
4. Reddy V.G., Reddy J.K., Ramlal G., and Ambati M., Peripheral ossifying fibroma: Report of two unusual cases. Indian J. Stomatol, 2011; 2: 130-133.
5. Mohiuddin K, Priya NS, Ravindra S, Murthy S. Peripheral ossifying fibroma. Journal of Indian Society of Periodontology. 2013 Jul 1; 17(4): 507.
6. Agarwal P, Agarwal M, Bhattacharya H, Saluja M. Peripheral ossifying fibroma. J Dent Sci Oral Rehabil 2012; 3: 51‐2.
7. Nelson A, Mathew P, Sakthivel S, Austin RD. Peripheral ossifying fibroma – A case report and review of literature. J Adv Med Dent Sci 2014; 2: 127‐30.
8. Gardner DG. The peripheral odontogenic fibroma: An attempt at clarification. Oral Surg Oral Med Oral Pathol 1982; 54: 40‐8.
9. Eversole LR, Rovin S. Reactive lesions of the gingiva. J Oral Pathol 1972; 1: 30‐8.
10. Nanda T, Jain S, Nanda S, Gambhir RS. Peripheral ossifying fibroma: A clinico-histopathological report. Universal Research Journal of Dentistry. 2016 May 1; 6(2): 186.
11. Mathur S., and Manjunath S.M., 2014, Peripheral Ossifying Fibroma: A Review. Int. J. Dent Med. Res., 1: 116-118
12. Kenney JN, Kaugars GE, Abbey LM. Comparison between the peripheral ossifying fibroma and peripheral odontogenic fibroma. J Oral Maxillofac Surg 1989; 47: 378‐82.
13. Das S, Das AK. A review of pediatric oral biopsies from a surgical pathology service in a dental school. Pediatr Dent 1993; 15: 208‐11.
14. Cuisia ZE, Brannon RB. Peripheral ossifying fibroma – A clinical evaluation of 134 pediatric cases. Pediatr Dent 2001; 23: 245‐8.
15. Neville BW, Damm DD, Allen CM, Bouquot JE. Oral and Maxillofacial Pathology. 2nd ed. Philadelphia: WB Saunders Co. 2002; 451‐2.
16. Buchner A, Hansen LS. The histomorphologic spectrum of peripheral ossifying fibroma. Oral Surg Oral Med Oral Pathol 1987; 63: 452‐61.
17. Bodner L, Dayan D. Growth potential of peripheral ossifying fibroma. J Clin Periodontol 1987; 14: 551‐4.
18. Poon CK, Kwan PC, Chao SY. Giant peripheral ossifying fibroma of the maxilla: Report of a case. J Oral Maxillofac Surg 1995; 53: 695‐8.
19. Kumar SK, Ram S, Jorgensen MG, Shuler CF, Sedghizadeh PP. Multicentric peripheral ossifying fibroma. J Oral Sci., 2006; 48: 239‐43.
20. Wood NK, Goaz PW. Differential diagnosis of oral lesions. Mosby Elsevier Health Science; 1985.
21. Killi VP, Penmatsa T, Narendra R. Peripheral ossifying fibroma: A case report. Int J Case Rep Imag 2012; 3: 11‐4.
22. Moon WJ, Choi SY, Chung EC, Kwon KH, Chae SW. Peripheral ossifying fibroma in the oral cavity: CT and MR findings. Dentomaxillofac Radiol 2007; 36: 180‐2.
23. Pendyala G, Joshi S, Marawar PP, Pawar B, Mani A. Peripheral ossifying fibroma‐a case report. Pravara Med Rev 2012; 4: 27‐30.
24. Glick G. Textbook of Burkets Oral Med Diag and Treatment. 10th ed. Ontario Hamilton: BC Decker; 2003; 142.
25. Sumona P, Shruti H, Vidya A. The varying clinical presentations of peripheral ossifying fibroma: A report of three cases. Rev Odonto Cienc 2012; 27: 251‐5.