Journal of Biomedical and Pharmaceutical Research
Available Online at www.jbpr.in
CODEN: - JBPRAU (Source: - American Chemical Society)
NLM (National Library of Medicine): ID: (101671502)
Index Copernicus Value 2018: 88.52
Case Report
Volume 9, Issue 4: July-August: 2020,72-75
ISSN (Online): 2279-0594
ISSN (Print): 2589-8752

PERIPHERAL OSSIFYING FIBROMA OF MANDIBLE IN A FEMALE PATIENT REPORT OF A CASE

Deepika Gorantla[1], SVVS Musalaiah[2], Pavuluri Aravind Kumar[3], Narendra Babu M[4], Kalapala Raviraj[5], Harish Prabhudev[6]
[1]Postgraduate Student,[2,3,4]Professor, [5,6]Senior Lecturer , Department of Periodontics, St.Joseph Dental College, Eluru, India.

Article Info: Received 03July2020; Accepted 27August 2020
DOI: https://doi.org/10.32553/jbpr.v9i4.792
Corresponding author: Deepika Gorantla
Conflict of interest: No conflict of interest.

Abstract

Fibrous growths in the gingiva with the histopathological presence of calcifications are a common occurrence in the oral cavity. These lesions can be neoplastic in nature with either odontogenic or non odontogenic origin or they can be reactive lesions. Peripheral ossifying fibroma (POF) is one of the inflammatory reactive hyperplasia of gingiva. It representsa separate clinical entity rather than a transitional form of pyogenic granuloma and shares unique clinical characteristics and diverse histopathological features.

Here, we present a case report of peripheral ossifying fibroma (POF) in an adult female in her fourth decade of life. This case report comprises the growth that occurred in the mandibular posterior region. POF in the age of 45 years, arising in the mandibular posterior region, is an occasional entity. Careful clinical examination and histopathology findings should be correlated to conclude the final diagnosis.

INTRODUCTION

Fibromas are benign fibrous overgrowths arising from the mucous membrane and are frequent growths in the oral cavity[1]. They are nodular neoplasms consisting of central mass of connective tissue. They usually grow slowly and may range from soft to hard depending on amount of collagen fibers. Many of the fibrous growths originate from beneath the periodontium, similar to peripheral ossifying fibroma (POF).

POF is defined as a well demarcated and occasionally encapsulated lesion consisting highly cellular, fibrous tissue that contains varying amounts of calcified tissue resembling bone, cementum or both[2]. POF represents a reactive benign lesion of connective tissue and is not the soft tissue counterpart of ossifying fibroma and is also not related anyhow to peripheral odontogenic fibroma[1].

It is reported under confound array of terms in literature, which includes peripheralcementifying fibroma, mineralizing ossifying pyogenic granuloma, peripheral fibroma with calcifications[3],peripheral fibroma with calcification[4], ossifying fibrous epulis[5], and calcifying fibroblastic granuloma[6].

It arises in the younger age group with a female preponderance. It has a predilection formaxillary arch and most of them occur within the incisor-cuspid region. POF is an infrequent growth of the anterior region of lower jaw and accounts for 3.1 percentage of all oral tumors and 9.6% of the gingival lesions. About sixty percent of these tumors occur in upper jaw and more than 50 percent of all cases of maxillary POF are found within the incisors and canine areas.

A case of POF in the mandible of a 45 year old female patient is described in this report.

CASE REPORT:

A 45-yr-old apparently healthy female patient reported to the Department of Periodontics with the chief complaint of soft tissue overgrowth in the mandibular posterior region since 5 months but did not seek treatment until it reached current proportions. On extraoral examination facial proportions were bilaterally symmetrical and overlying skin showed no signs of inflammation. The regional lymph nodes were non palpable.

A thorough intraoral examination revealed a firm, rubbery, reddish, sessile mass on the buccal aspect of the mandibular left premolar region. The lesion was approximately 2cm mesiodistally and 1.5cm buccopalatally [Figure: 1]. The mucosa overlying the lesion was intact and pale pink in color. No surface ulceration was noted. On palpation, it was callus and firm in consistency. The lesion was painless unless traumatized by enthusiastic tooth brushing or chewing certain hard foodstuffs.

Intra oral periapical radiograph [Figure 2] and Orthopantamograph [Figure 3] showed no significant bony changes. Provisional diagnosis of POF was considered.

Phase 1 periodontal treatment was carried out. Signed consent form for the surgical procedure was obtained from the patient after proper counseling.

TREATMENT:

After routine blood examinations, excisional biopsy of the growth was done [Figure 4,] under antibiotic coverage and thorough curettage [Figure 6] of the adjacent periosteum

was carried out to prevent recurrence. Black silk sutures were placed [Figure 7] and patient was recalled after 1 week. The excised specimen [Figure 5] was then sent for histopathological evaluation to the department of pathology. Histomorphological examination revealed fibro-cellular connective tissue interspersed with plump fibroblasts in between the collagen bundles, surfaced by parakeratinzed stratified squamous epithelium and evidence of calcifications in the hypercellular fibroblastic stroma [Figure 8] confirming the lesion as POF. Healing was uneventful and patient is followed-up for 12 months without any recurrence.

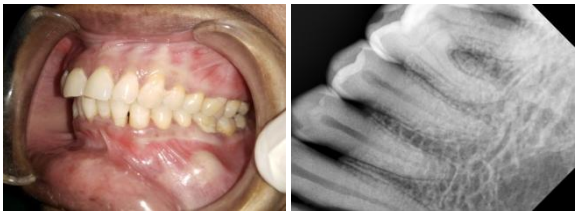

Fig 1: Intra oral lesion,Fig 2: IOPA

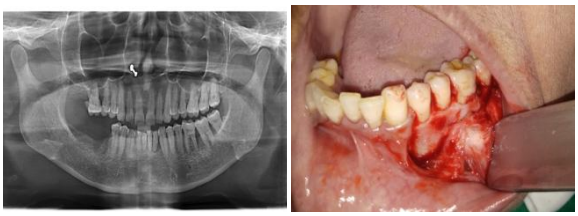

Fig 3: OPG,Fig 4: Exposed mass

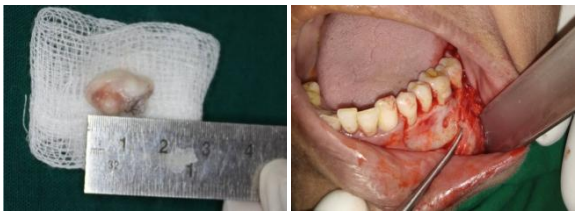

Fig 5: Excised tissue,Fig 6: Area after curettage

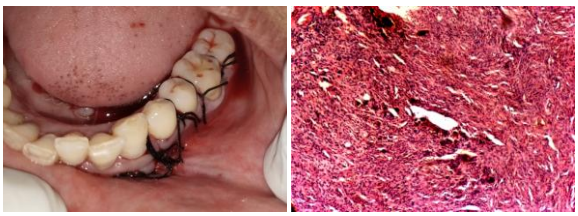

Fig 7: Sutures placed,Fig 8: Calcifications in stroma

DISCUSSION:

Different types of focal overgrowths are common in oral cavity. They arise due to overgrowth and proliferation of different components of connective tissue in periodontium, i.e. the fibers, cementum, bone, blood vessel or any other particular type of cell. The lexicon of focal proliferative lesions commonly occurring on gingival tissue includes fibroma, giant cell fibroma, pyogenic granuloma, peripheral giant cell granuloma, POF and peripheral odontogenic fibroma (PODF)[7]. Most of these lesions are reactive chronic inflammatory hyperplasias, with minor trauma or chronic irritation being the etiologic factors[8].

POF is a reactive proliferation exclusive to gingival mucosa. It was first reported by Shepherd in 1844 as alveolar exostosis[9]. The term "POF" was coined by Eversol and Rovin in 1972[10]. It is relatively common growth of gingiva and is considered to be reactive rather than neoplastic in nature[11]. The aetiology of POF is unknown. However, trauma or local irritants, such as dental plaque, calculus, ill-fitting dental appliances, and poor quality dental restorations, play a significant role in the aetiology and pathogenesis. It is also considered that at least some cases of POF may arise as a result of maturation of a long-standing pyogenic granuloma[11]. Inflammatory hyperplasia originating in the superficial periodontal ligament (PDL) is considered to be a factor in the histogenesis of the POF[10.]

The POF has a peak incidence in young and teenaged females[11]. Cundiff stated that the lesion is prevalent between ages of 5 and 25 years, with a peak incidence at 13 years. Cundiff also reported a definite female predilection[12]. Male to female ratio may vary from 3:2 to 2:1. The site of occurrence of POF is usually anterior to molars in both maxilla and mandible equally[7], and in more than 50% of cases in the incisor, and cuspid regions[13].

The size of peripheral ossifying fibroma, as reported in the literature, ranges from 0.4 to 9.0 cm with an average lesion measuring approximately 1.0–2.5 cm at its greatest dimension[14].

Clinically, the lesion appears as nodular mass which mcan be pedunculated or sessile, pink to red in color and surface is usually but not always ulcerated. In the present case also, the lesion occurred in a middle-aged female in mandibular left premolar region and appeared as a nodular pale to pink growth without ulceration.

The confirmatory diagnosis of lesions of this kind is usually achieved by histopathological examination. Histologically, the key feature of this lesion is exceedingly cellular mass of connective tissue comprising large number of plump fibroblasts intermingled throughout with delicate fibrillar stroma. The following features are usually observed during the microscopic examination[15]: Intact or ulcerated stratified squamous surface epithelium; benign fibrous connective tissue with varying numbers of fibroblasts; sparse to profuse endothelial proliferation; mineralized material consisting of mature, lamellar or woven osteoid, cementum-like material, lamellar or dystrophic calcifications; acute or chronic inflammatory cells in

lesions[16]. All the above features were seen in our case, thereby confirming our diagnosis. Buchner and Hansen observed that the mineralized tissues in peripheral ossifying fibroma can be of three basic types. (1) Bone that may be lamellar, woven or trabecular, sometimes surrounded by osteoid. (2) Cementum-like material that appears as spherical bodies or large a cellular round to oval eosinophilic bodies which coalesce to form islands of various sizes and shapes. (3) Dystrophic calcification which can range from small clusters of minute basophilic granules or tiny globules to large solid irregular masses[15].

Immunohistochemical profile studies indicate that the proliferating cells are of a myofibroblastic nature, i.e., cells sharing morphologic characteristics with fibroblasts and muscle cells. C68 positive histiocytic component intermingling with lymphocytes and plasma cells suggests the existence of a reactive phenomenon or a response to inflammation[17].

Multicenter peripheral ossifying fibroma can occur in oral and maxillofacial regions in conditions associated with known genetic mutations such as Nevoid basal cell carcinoma syndrome, multiple endocrine neoplasia Type II, neurofibromatosis, and Gardner's syndrome[18].

The treatment for this type of reactive lesion is usually complete surgical excision along with curettage of the adjacent tissues to prevent recurrence[19, 20]. The recurrence rate is high which varies from 8% to 20% as these reactive lesions which may probably be attributed to incomplete removal, repeated injury, or persistence of local irritants. Lasers are being used for treating peripheral ossifying fibromas as this gives a bloodless field and also minimizes scarring and wound contraction[21].

Mergoni *et al*. showed 30% recurrence among 27 cases of peripheral ossifying fibromas[22]. Taking into the consideration the size, duration, the potential for recurrence and also as we were yet to make sure of disease free, we opted to wait and followed up the patient periodically. Eversole and Leider in a study of 64 cases of central ossifying fibroma reported a recurrence rate of 28%, following surgical curettage of these lesions[23]. With peripheral ossifying fibromas, incomplete removal can result in recurrence. In the present case the patient has been reviewed for 12 months, with no evidence of recurrence.

CONCLUSION:

POF is a pathological entity whose histogenesis is yet to be delineated. It shares a varied clinic-pathological presentation and progress for long periods before patients seek treatment because of its asymptomatic nature. Substantial overlap exists between various focal reactive overgrowths of gingiva. Discussion of the differential diagnosis should be done to tactfully prevent unnecessary distress to the patient. Clinico-pathological characteristics may vary and on the contrary to the usual presentation, the present case presented a different age, and site of POF. Surgical excision is considered curative and may present a high recurrence rate compared with other reactive lesions.

REFERENCES

1. Mishra MB, Bhishen KA, Mishra R, Mishra S. Peripheral ossifying fibroma. J Oral Maxillofac Pathol 2011;15:65-8.
2. Nazareth, B.; Arya, H.; Ansari, S. & Arora, R. Peripheral ossifying fibroma Ð A clinical report. *Int. J. Odontostomat., 5(2)*:153-156, 2011.
3. Mohiuddin K, Priya NS, Ravindra S, Murthy S. Peripheral ossifying fibroma. J Indian Soc Periodontol 2013;17:507-9
4. Bhaskar SN, Jacoway JR. Peripheral fibroma and peripheral fibroma with calcification: report of 376 cases. JADA 74:1312-1320, 1967.
5. Zain RB, Fei YJ. Fibrous lesions of gingival: a histopathologic analysis of 204 cases. Oral Surg Oral Med Oral Pathol 70:466-470, 1990.
6. Lee KW. The fibrous epulis and related lesions – granuloma pyogenicum, 'pregnancy tumor', fibroepithelial polyp and calcifying fibroblastic granuloma. A clinico-pathological study. Periodontics 6:277-292, 1968.
7. Rajendran R, Sivapathasundharam B. Shafers's textbook of oral pathology. 6th ed. Noida, India: Elsevier; 2009. p. 128.
8. Vaishali K, Raghavendra B, Nishit S. Peripheral ossifying fibroma. J Indian Acad Oral Med Pathol 2008;20:54-6.
9. Reddy GV, Reddy J, Ramlal G, Ambati M. Peripheral ossifying fibroma: Report of two unusual cases. Indian J Stomatol 2011;2:130-3.
10. Eversole LR, Rovin S. Reactive lesions of the gingiva. J Oral Pathol 1972;1:30-8.
11. Fausto KA. Robbins and Cotran pathologic basis of disease. 7th ed. Philadelphia: WB Saunders; 2008. p. 775-6.
12. Cundiff EJ. Peripheral ossifying fibroma: A review of 365 cases. USA: MSD Thesis Indiana University; 1972.
13. Neville BW, Damm DD, Allen CM, Bouquot JE. Oral and Maxillofacial Pathology. 2nd ed. New Delhi: Elsevier; 2005. p. 563-4.
14. Chhina S, Rathore AS, Ahuja P. Peripheral ossifying fibroma of gingiva: A case report. Int J Case Rep Imag 2011;2:21‑4.
15. Buchner A, Hansen LS. The histomorphologic spectrum of peripheral ossifying fibroma. Oral Surg Oral Med Oral Pathol 1987;63:452-61.
16. Yadav R, Gulati A. Peripheral ossifying fibroma: A case report. J Oral Sci 2009;51:151-4.
17. Garcia de Marcos JA, Garcia de Marcos MJ, Arroyo Rodriguez S, Chiarri Rodrigo J, Poblet E. Peripheral ossifying fibroma: A clinical and immunohistochemical study of four cases. J Oral Sci 2010;52:95-9.
18. Kumar SK, Ram S, Jorgensen MG, Shuler CF, Sedghizadeh PP. Multicentric peripheral ossifying fibroma. J Oral Sci 2006;48:239-43.
19. Sciubba JJ, Regezi JA, Rogers RS. Benign non odontogenic tumours:PDQ Oral Disease: Diagnosis and Treatment. PMPH-USA, 2002. Available from: https://books.google.co.in/books?id=RT8rAwAAQBAJ&dq=https://books.google.co.in/books/about/PDQ_Oral_Disease.&source=gbs_ navlinks_s. [Last accessed on 2017 Feb 02].
20. El-Mofty SK. Fibro-osseous lesions of the craniofacial skeleton: An update. Head Neck Pathol 2014;8:432-44.

21. Anuradha BR, Penumarty S, Charan CR, Swati M. Application of 810-nm diode laser in the management of peripheral ossifying fibroma. J Indian Soc Periodontol 2015;19:224-6.
22. Mergoni G, Meleti M, Magnolo S, Giovannacci I, Corcione L, Vescovi P. Peripheral ossifying fibroma: A clinicopathologic study of 27 cases and review of the literature with emphasis on histomorphologic features. J Indian Soc Periodontol 2015;19:83-7.
23. Eversole LR, Leider AS, Nelson K. Ossifying fibroma: A clinicopathologic study of sixty‐four cases. Oral Surg Oral Med Oral Pathol 1985;60:505‐11