

Peripheral Ossifying Fibroma: A Case Report

Dr. Raju Anarthe¹, Dr. Preeti Kale²

¹(Reader, Department of Periodontology, Rural Dental College/ Pravara Institute of Medical Sciences, Loni, India)

²(Postgraduate Student, Reader, Department of Periodontology, Rural Dental College/ Pravara Institute of Medical Sciences, Loni, India)

Corresponding Author: Dr. Raju Anarthe

Abstract: Peripheral ossifying fibroma (POF) is a reactive overgrowth occurring frequently in anterior maxilla originating from connective tissue or periodontal ligament. They are firm, nodular, slow growing, spherical non neoplastic tumors. POF, one of the most common gingival lesions has a recurrence rate of nearly 20%. The etiology is considered to be secondary to trauma or other local irritating factors. To minimize the recurrence of this lesion it must be completely excised. Incidence of peripheral ossifying fibroma in the posterior maxilla is also rare. Here we report a large peripheral ossifying fibroma occurring in a 35 years female in the posterior side of maxillary and mandibular arches which had extended to the occlusal surface of the third molar region causing discomfort and difficulty in mastication.

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I. Introduction

Fibromas are benign tumors that are composed of fibrous or connective tissue. Peripheral ossifying fibroma (POF) accounts for about 3.1% of all oral cavity tumors and about 9.6% of gingival overgrowths¹. The ossifying fibroma occurs almost exclusively in bones of the craniofacial region, especially in the jaws. Two types of this lesion have been defined: (1) the one arising from the endo-osteum or the periodontal ligament adjacent to the root apex and expanding from the medullary cavity of the bone called the central ossifying fibroma and (2) the other which exhibits a contiguous relationship with the periodontal ligament, occurring solely on the soft tissues covering the tooth-bearing parts of the jaws called the peripheral ossifying fibroma². The peripheral ossifying fibroma is a non-neoplastic enlargement of the gingiva, classified as a reactive hyperplastic inflammatory lesion. The pathogenesis of this lesion is unknown. Clinically and histologically, it has similarities with pyogenic granuloma and some consider the peripheral ossifying fibroma as secondary to fibrosis of granulation tissue².

The etiology of lesion is unclear, irritation of the tissue due to ill-fitting dentures, bacterial plaque, calculus, masticatory forces, faulty restoration and trauma are proposed to be the initiating factors. The mineralized portion could have origination from the periosteal cells or periodontal ligament⁴.

II. Case report

Mrs. Anita Jadhav, a 35-year-old female has reported to the department of periodontology of Rural Dental College of Pravara Institute of Medical Science, Loni with an extensive lesion involving the right side of maxillary and mandibular gingiva with a 1-year progress history. Extra-oral examination of patient revealed facial asymmetry by virtue of change in the lower third of the face due to large intraoral growth of the lesion. Intraoral clinical evaluation revealed a large lesion involving the right side of the maxilla and mandible, promoting displacement of teeth 11, 12, 47 (Fig. 1). Despite the lesion being covered by intact mucosa of normal color, during treatment planning we chose to perform punch biopsy prior to definite surgical treatment. Histological examination revealed that it was case of peripheral ossifying fibroma. Surgical excision was done under local anesthesia through a wedge incision surrounding the lesion, associated with intrasulcular incision in involved teeth and tissue displacement was performed with the aid of a Molt periosteal elevator. Following complete removal of the lesion, involved mandibular right second molar tooth was removed since it presented compromised supporting periodontium (Fig. 2). Tissue was again sent for histopathological examination. Lesion was microscopically described by the presence of dense fibrous connective tissue with multiple vital bone trabeculae, surrounded by uneven pavementous epithelium (Fig.3). The presence of mixed inflammatory infiltrate was also seen. In addition to routine HE staining, immunohistochemistry was performed for actin in smooth muscle tissue, in which positivity to HHF-35 was observed (Fig. 4), thus confirming myofibroblastic characteristic of the lesion. Therefore, the diagnosis of lesion was peripheral ossifying fibroma. The patient

recovered with no incidents and clinical and radiographic 12-month follow-up revealed absence of relapses (Fig. 5). Removable partial denture was prepared for missing teeth because of the compromised periodontal support.

III. Discussion:

Intraoral ossifying fibromas have been described in the literature since the late 1940s. Different terminologies have been given to similar lesions, such as epulis⁵, peripheral fibroma with calcification⁵, peripheral ossifying fibroma, peripheral cementifying fibroma, peripheral fibroma with cementogenesis⁵ and peripheral cemento-ossifying fibroma⁶ calcifying fibroblastic granuloma⁷. The sheer number of names used for fibroblastic gingival lesions indicates that there is much controversy surrounding the classification of these lesions^{8,9}. However Eversole and Rovin¹⁰ first coined the term Peripheral ossifying fibroma. It is a relatively uncommon, solitary¹⁰, non-neoplastic gingival growth. Earlier, it was believed that POF is a transitional form of pyogenic granuloma, peripheral giant cell granuloma or irritation fibroma. However, recent reports suggest that the POF is totally a separate clinical entity¹¹. Gardner¹² stated that connective tissue in POF has got unique features that enable a confirmed histopathologic diagnosis, regardless of whether there is presence or absence of calcifications. Buchner and Hansen¹³ hypothesized that early POF presents as ulcerated nodules with little calcification, allowing easy misdiagnosis as a pyogenic granuloma.

Hormonal influences and the presence of local irritants have been suspected to have some role in development of this lesion. Peripheral ossifying fibroma lesion does not require imaging beyond radiograph. Histologically, fibrous proliferation with large number of fibroblasts is seen associated with the formation of mineralized product. So, the characteristic feature of the peripheral ossifying fibroma is highly cellular connective tissue containing foci of calcified material.

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

IV. Conclusions

POF is a slowly progressing lesion. Many cases will progress for long periods before patients seek treatment because of the lack of symptoms associated with the lesion. Discussion of the differential diagnosis should be done carefully to prevent unnecessary distress to the patient and family. In the current case, the family experienced distress related to the suggestion of squamous cell carcinoma before referral for treatment and definitive diagnosis. Treatment consists of surgical excision including the periosteum, and scaling of adjacent teeth. Postoperative maintenance is required because of the growth potential of incompletely removed lesions and recurrence.

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Fig. 1 – Preoperative Intraoral Lesion



Fig. 2 – Lesion excision alongwith tooth

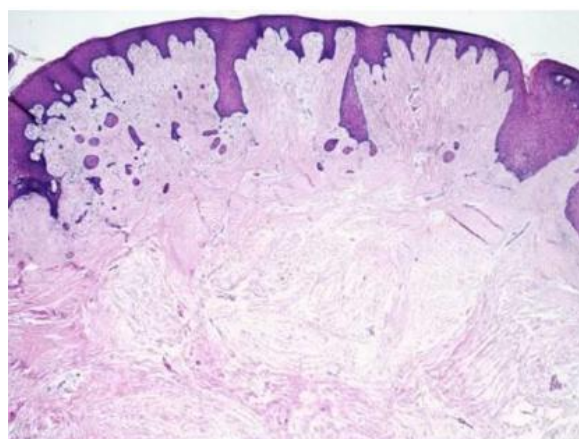


Fig. 3 – Microscopic features of the lesion evidencing bone trabecula surrounded by dense connective tissue matrix.

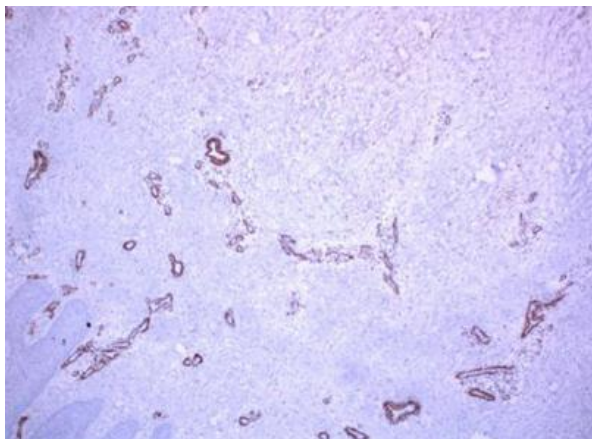


Fig. 5 – Positive immunolabeling for anti-muscle actin antibody (HHF-35).



Fig. 6 – Postoperative after 12 months

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