Case Report

Peripheral Cemento- Ossifying Fibroma - A Clinical Case Report

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ABSTRACT

The gingiva is often the site of localized growths that are considered to be reactive rather than neoplastic in nature. Most of the lesions are difficult to diagnose clinically rather they are diagnosed by histomorphologically. One of the infrequently occurring gingival lesions is peripheral ossifying fibroma (POF) which is a reactive gingival overgrowth. It shows that this tumorlike growth is exclusive to the interdental papilla and comprises almost 3 percent of all oral lesions that are examined by biopsy. It occurs more often in the female than the male, in the maxilla than the mandible, in the anterior segments than elsewhere. This lesion, despite the bone destruction that may be associated with it, should be treated conservatively. Extraction of the adjoining teeth is usually not necessary. In this case report we will discuss a case of peripheral ossifying fibroma treated with Laser.

Keywords: Peripheral ossifying fibroma, non-neoplastic enlargements, oxytalan fibers

INTRODUCTION

Many types of localized reactive lesions may occur on the gingiva, including focal fibrous hyperplasia, pyogenic granuloma, peripheral giant cell granuloma (PGCG), and peripheral ossifying fibroma (POF).[1] These lesions may arise as a result of such irritants as trauma, microorganisms, plaque, calculus, restorations, and dental appliances.[1] POF is a non-neoplastic 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.[2] The terms most frequently used have been the "peripheral ossifying fibroma" or "peripheral odontogenic fibroma". In as much as the latter term has been used for a lesion described by the WHO in their classification of odontogenic tumours as a totally different entity, the term peripheral ossifying fibroma will be used here for that relatively common gingival lesion characterized by a high degree of cellularity usually exhibiting bone formation, although occasionally cementum like material or rarely dystrophic calcification may be found instead.[3]

Some investigators believe that the lesion is nevertheless odontogenic in origin, being derived from the periodontal ligament, especially since it only occurs on the gingiva and may contain oxytalan fibers. At the present time, however its exact derivation is still uncertain. Despite the similarity in terminology, it is not considered to be the extraosseous counterpart of the central ossifying fibroma.[3] In this article we have discussed a case of peripheral ossifying fibroma, its treatment planning and management.

CASE REPORT

A 32 years old male patient came to the Department of Periodontology, with the chief complains of swelling in the lower front region for 1 year. The swelling started as small nodule

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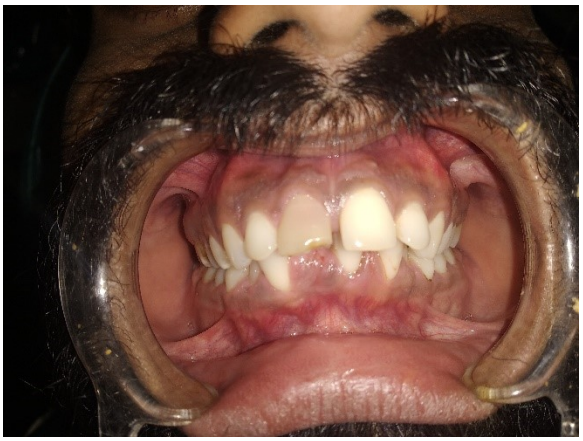

Figure 1: A well-defined growth in relation to 42, 41, 31, 32 region extending from distal region of 42 to mesial region of 32.

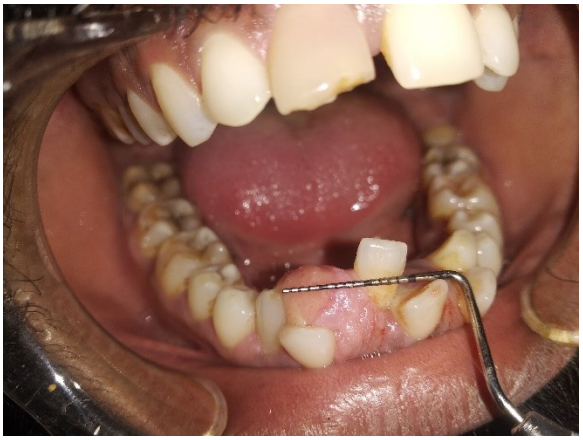

Figure 2: Measurement with UNC 15 probe in 32, 31, 41 and 42 region.

that progressed gradually to the present size (Fig. 1 & 2). There was no contributory medical and family history whereas patient gave history of trauma which is the prime reason of tooth displacement. Radiographic examination in the region reveals the absence of any bony lesion on 32, 31, 41 and 42 region (Fig. 3). On intraoral examination, a well-defined growth was present in relation to 31, 41 and 42 region measuring about 1 cm × 1.2 cm in diameter extending from mesial aspect of 42 to 32 along the incisal edges. On palpation, swelling was nontender, sessile, and soft in consistency.

Based on the history, clinical examination, blood investigations and IOPAR the case was provisionally diagnosed as POF. The differential diagnosis considered was PGCG and pyogenic granuloma. Under topical local anesthesic gel, excisional biopsy was performed using Diode

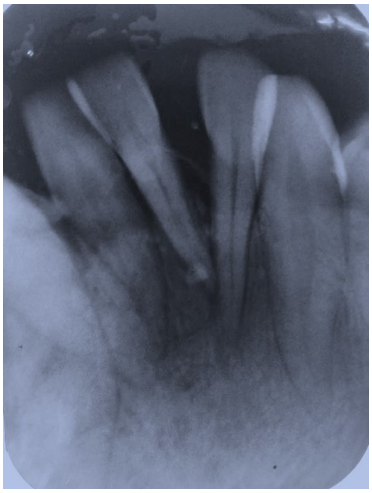

Figure 3: Intraoral periapical radiograph of 32, 31 41 and 42 region.

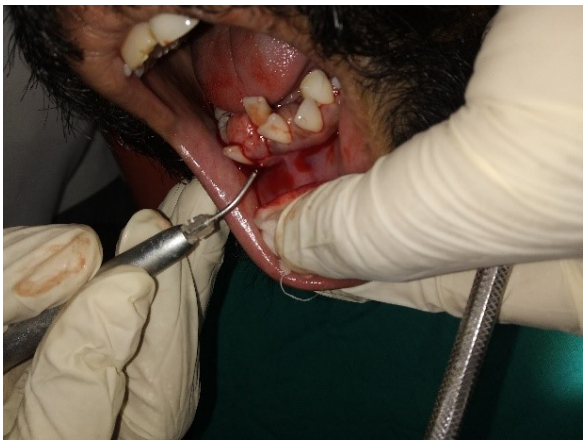

Fig 4: Excision of the lesion by 940 nm wavelength Diode Laser.

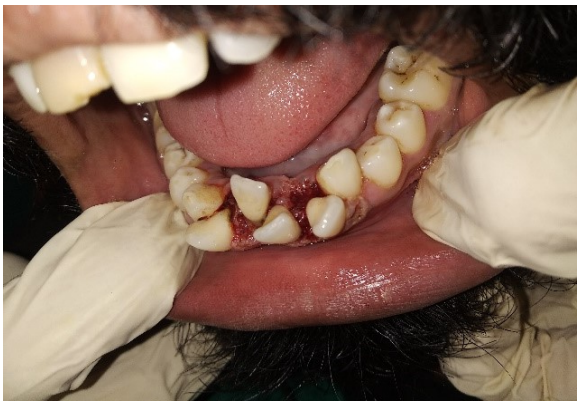

Fig 5: Immediate post-operative.

Laser of 940 nm wavelength (Biolase epic) (Fig. 4). Amoxicillin 500 mg three times daily for 5 days and Vitamin E capsule (Evion 400) for topical application was prescribed post-

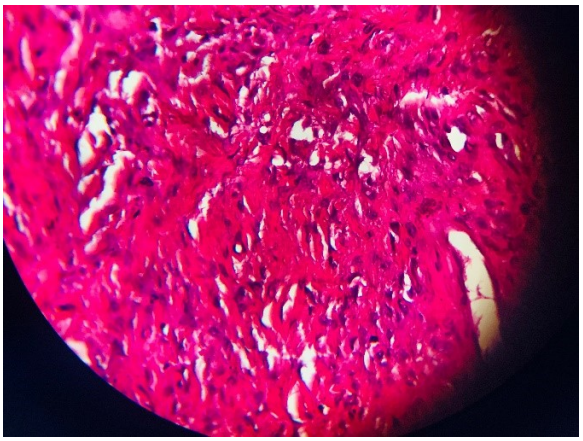

Figure 6: Histological section on 40 X zoom.

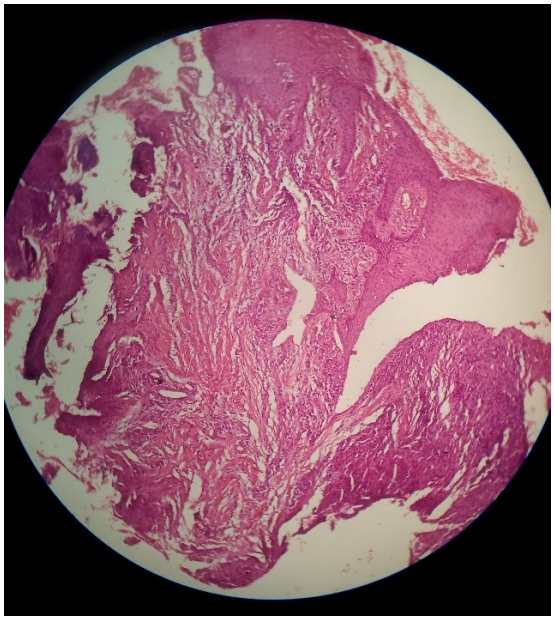

Fig 7: Histological section on 10X zoom

surgically. The excised tissue was sent for histo-pathological investigations.

Histologically, the tissue section revealed hyperkeratinized stratified connective tissue. The epithelium showed slender rete ridges with atrophy in some areas. The connective tissue exhibited reticular arrangement of collagen bundles interrupted with vital bone. The section also showed numerous dilated capillaries. On the basis of clinical, histopathological, and radiographic examination, the diagnosis of POF was given (Fig. 6 & 7). The patient presented for a follow-up examination 7 days postoperatively (Fig. 8). The healing at the surgical site was uneventful.

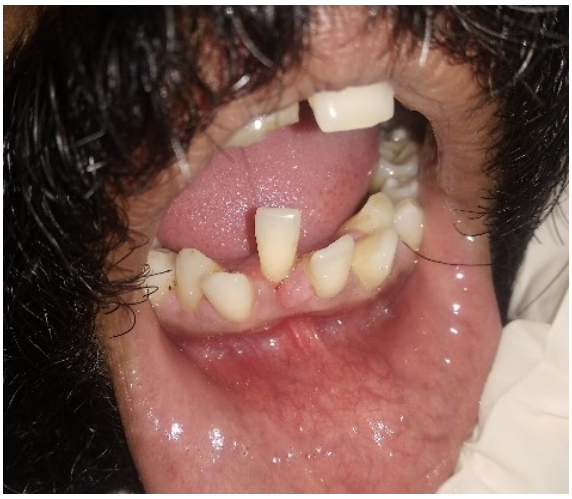

Figure 8: Seventh day post-operative

DISCUSSION

In 1982, Gardner first introduced the term POF for a lesion that is reactive in nature and is not the extraosseous counterpart of a Central Ossifying Fibroma of the maxilla and mandible.[4] Intraoral ossifying fibromas have been described in the literature since the late 1940s. Many names have been given to similar lesions, such as epulis, peripheral fibroma with calcification, POF, calcifying fibroblastic granuloma, peripheral cementifying fibroma, peripheral fibroma with cementogenesis and peripheral cemento -ossifying fibroma. The sheer number of names used for fibroblastic gingival lesions indicates that there is much controversy surrounding the classification of these lesions.[5,6]

It has been suggested that the POF represents a separate clinical entity rather than a transitional form of pyogenic granuloma, PGCG, or irritation fibroma. Eversole and Rovin[7] in 1972 stated that, with the similar sex and site predilection of pyogenic granuloma, PGCG and POF, as well as similar clinical and histologic features, these lesions may simply be varied histologic responses to irritation. Gardner[4] stated that POF cellular connective tissue is so characteristic that a histologic diagnosis can be made with confidence, regardless of the presence or absence of calcification. Buchner and Hansen[8] hypothesized that early POF presents as ulcerated nodules with little calcification, allowing easy misdiagnosis as a pyogenic granuloma. Ossifying fibroma elaborates bone,

cementum, and spheroidal calcifications, which has given rise to various terms for these benign fibro-osseous neoplasms. When bone predominates, ossifying is the appellation, while the term "cementifying" has been assigned when curvilinear trabeculae or spheroidal calcifications are encountered. When bone and cementum like tissue are observed the lesions have been referred to as cemento-ossifying fibroma. Cementifying fibromas may be clinically and radiographically impossible to separate from ossifying fibromas.[7- 11]

The term cementossifying is outdated and scientifically inaccurate, because clinical presentation and histopathology of cemento-ossifying fibroma are the same in areas where there is no cementum, such as skull, femur, and tibia they are all ossifying fibromas. Those that happen to occur in the jaws should not be termed cemento-ossifying fibromas merely because of teeth. Moreover, there is no histologic or biochemical differences between cementum and bone.[10,11] Although the etiopathogenesis of POF is uncertain, an origin from cells of PDL has been suggested. The reasons for considering PDL origin for POF include exclusive occurrence of POF in the gingival (PDL), the proximity of gingiva to the PDL and the presence of oxytalin fibers within the mineralized matrix of some lesions. Excessive proliferation of mature fibrous connective tissue is a response to gingival injury, gingival irritation, sub gingival sulcus, or a foreign body in the gingival sulcus. Chronic irritation of the periosteal and periodontal membrane causes metaplasia of the connective tissue with resultant initiation of bone formation and dystrophic calcification. Rare manifestations of multicentric lesion in recent times point toward a possible role of genetics in the etiopathogenesis of this disease. Multicentric lesion present in the oral cavity are not typical, but have been observed in the conditions such as nevoid basal cell carcinoma syndrome (multiple odontogenic keratocysts), multiple neuroma, neurofibromatosis, gardener syndrome all of these conditions have been associated with inherited genetic mutations so the potential exists that POF can also be due to genetic mutations that predisposes to gingival soft tissue overgrowths that contain mineralized product or ossification.[12]

Treatment of this lesion is complete surgical excision of the lesion and so performed in this case. Meticulous scaling and root planing was done after and before the surgical excision of the lesion. Proper excision and aggressive curettage is required for prevention of recurrence. The recurrence of the POF is about 8% to 20%. It probably occurs due to incomplete initial removal, repeated injury, or persistence of the local irritants.[13,14]

CONCLUSION

POF is a slow growing lesion with a limited growth potential. Many cases will progress for a long period before patients seeks treatment due to its asymptomatic nature as in our case. Rather the chief complain of the patient was bleeding gums during brushing. The etiology was local factor which aggravates the size of the swelling. After removing the local factor the inflammatory components reduced. Whereas etiopathogenesis of POF still remains unclear although origin from PDL is considered, recent reports of multicentric lesions also goes in favor of genetic involvement. Close postoperative follow up is required because of its high recurrence rate in incompletely removed lesions.

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