

Management Of Peripheral Ossifying Fibroma- A Relatively Uncommon Growth In The Oral Cavity- A Case Report

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Abstract: *Peripheral ossifying fibroma is a comparatively uncommon growth which is slow growing in nature and mainly affects the free gingival margin. The commonest site involved is the anterior maxillary arch. Usually the lesion is observed in 2nd and 3rd decades of life and it has a strong female predilection. The etiology is related to trauma and irritation from dental appliances and calculus. The appearance of this lesion is reactive and solitary in nature rather than benign or malignant. Confirmative diagnosis is based on definite histopathological examination along with determination of presence of focal calcifications. Treatment options include electro surgery, scalpel and laser surgery. Since this lesion has a high recurrence rate, the excision requires proper surgical intervention that ensures thorough excision of the lesion involving periosteum and periodontal ligament. Since oral hygiene maintenance is a key factor in preventing the recurrence, proper scaling and root planing is required for meticulous plaque control. A case report of peripheral ossifying fibroma is presented that was managed by surgical excision.*

Keywords: *Peripheral ossifying fibroma, cementum, recurrence, calcifications, reactive lesion, scalpel.*

I. INTRODUCTION

Among various types of gingival enlargements, Peripheral ossifying fibroma (POF) is a rare entity, which is non-neoplastic in nature and arises due to trauma, plaque, calculus, restorations and dental appliances. The term peripheral ossifying gingival growth was coined by Eversole and Rovin. Various synonyms are used for this gingival growth, like peripheral cementifying fibroma, ossifying fibro epithelial polyp, peripheral fibroma with calcification, peripheral fibroma with osteogenesis, peripheral fibroma with cementogenesis, calcifying or ossifying fibrous epulis and calcifying fibroblastic granuloma.

This lesion commonly arises from the interdental papillae and is thought to arise from the periodontal ligament. Clinically, the appearance of POF is similar to a nodular mass

which is either sessile or pedunculated that emanates from interdental papilla. Usually the colour of the lesion is same as that of the oral mucosa or may be slightly reddened. The surface can be ulcerated or intact. Probably, the growth begins typically as an ulcerated lesion and the older lesions demonstrate healing of ulcer and an intact surface. Most lesions are < 2cm in size, although larger lesions occasionally may occur. POF can occur at any age group but it exhibits a peak incidence between the second and third decades. However, in a retrospective study of 2,439 cases in chinese population by Zhang et al (2007), it was found that the mean age of occurrence of POF was 44 years, which is contradictory to the earlier published literature. Some cases have been reported in children too.

II. CLINICAL FEATURES AND ETIOLOGY

The reported incidence of POF is 3 % of all the oral tumours and 9.6 % among the gingival tumours. The etiopathogenesis of this lesion is not totally understood by clinicians but as mentioned earlier, this lesion originates from the cells of periodontal ligament. Even, there is a concept that some POFs develop initially as pyogenic granulomas that undergo fibrous maturation and subsequent calcification. It is assumed that the proximity of gingiva to the periodontal ligament and the presence of oxytalan fibers within the mineralized matrix of some lesions could be responsible for the occurrence of this lesion.

The size of the POF ranges from 0.4 – 4.0 cm with an average of 1cm in diameter. Multicentric POF can also occur in the oral and maxillofacial region, and have been observed in conditions associated with known genetic mutations, such as, nevoid basal cell carcinoma syndrome, multiple endocrine neoplasia type II, neurofibromatosis and Gardner's syndrome. Radiographically, the features of POF tend to vary. There is an evidence of foci of calcifications scattered in the central area of the lesion, but not all lesions demonstrate these characteristics. Underlying bone involvement is usually not visible on a radiograph but in rare instances, superficial erosion of the bone can be seen.

III. CASE REPORT

A male patient, aged 32 years reported to the Department of Periodontology, Bhojia Dental College and Hospital, Bhud (Baddi) H.P., with a chief complaint of overgrowth of gums in the front region of the lower jaw, since 3 months. Family and medical histories were non contributory. Regional lymph nodes were not palpable. Clinical examination revealed sessile, isolated growth (0.9 x 0.6x 0.5 cm) attached to the interdental papilla of teeth no. 41 and 42 (Fig.-1). The lesion was of same colour as that of the surrounding normal mucosa (Fig.-1). Associated teeth were vital. Mild deposits, with bleeding on probing was present. 41 was grade I mobile. On the basis of clinical examination and history, a provisional diagnosis of peripheral ossifying fibroma was made. Surgical excision with scalpel was planned.

After proper investigations, the patient was given written and verbal information on the nature, risks and benefits of the surgical procedure and a signed, informed consent was obtained prior to the treatment. Phase I therapy was completed before the surgery. The surgical excision was performed under local infiltration (2 % lidocaine, with adrenaline 1: 2,00,000). The lesion was held with tissue forceps and excised. Care was taken to excise the tissue in such a way that it was completely removed from the periosteum (Fig.-2). The local deposits were removed by thorough scaling and root planing. Analgesics /anti-inflammatory drugs were prescribed. Proper oral hygiene instructions were given. Patient was recalled after 1 week (Fig.-3) Healing was uneventful after 1 week.



Figure 1: Pre-operative view of the lesion



Figure 2: Lesion excised

Excised tissue was sent for the histopathological examination. Histological examination showed epithelium which was parakeratinized with thin and long rete pegs (Fig 4). Underlying connective tissue stroma contained dense collagen fibres which were filled with plumpy fibroblasts. Some areas showed osteoid formation also, while majority were filled with blood vessels having infiltration of lymphocytes. These features were suggestive of peripheral ossifying fibroma.



Figure 3: Post-operative (1 week)

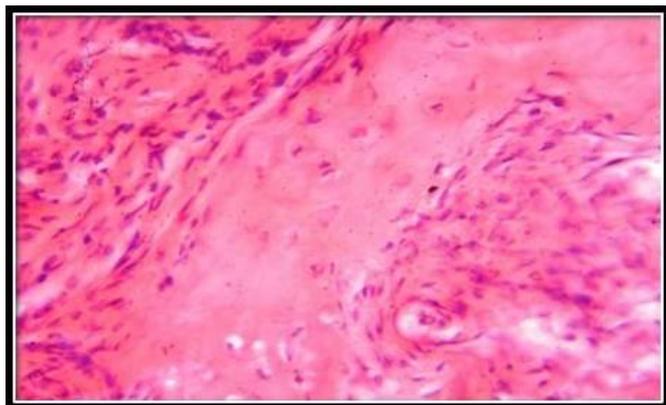


Figure 4: Histopathological view of the lesion

IV. DISCUSSION

The name POF represents a kind of misnomer and creates confusion as the term 'fibroma' etymologically means tumour of fibrous connective tissue and it is not considered as true neoplasm.¹¹ POF can be defined as well demarcated and occasionally encapsulated lesion, consisting of fibrous tissue containing variable amounts of mineralized material resembling bone (ossifying fibroma). The lesions of POF are usually less than 1.5-2 cm in diameter, but have been known to grow to larger sizes as well. As suggested by certain authors, the peripheral ossifying fibroma arises from the cells of periodontal ligament.⁴ Excessive proliferation of mature fibrous connective tissue is a response to gingival injury, gingival irritation, subgingival calculus or foreign body in the gingival sulcus. Chronic irritation of the periosteum and periodontal membrane causes metaplasia of the connective tissue which results in formation of bone or dystrophic calcification. Hence, it is assumed that fibrosis of granulation tissue may be the reason for proliferation of the lesion.

Although, the lesion has a slight predilection for maxillary arch but it can occur in mandible also. Racial comparison shows that 71 % whites are affected against 36 % of blacks. Some authors have also reported the migration of tooth due to peripheral cemento-ossifying fibroma. Peripheral ossifying fibromas comprises of fibrous connective tissue, endothelial proliferation and mineralization. The mineralized component of peripheral ossifying fibroma varies from 23% to 75%. Endothelial proliferation can be profuse in the areas of ulceration, which can be misleading in clinical diagnosis, as the lesion may appear to be pyogenic granuloma. Hormonal influences may also play a vital role, as it has higher incidence among females, especially in the second decade and declining incidence after the third decade.

POF is considered to be the soft tissue counterpart of central ossifying fibroma. However, central ossifying fibroma is neoplastic in nature but POF is not. Also, cemento-ossifying fibromas are more commonly found in the mandible than in the maxilla with some reports indicating 90 percent of incidence in the mandible. Also, peripheral giant cell granuloma has clinical features similar to those of POF but the

latter lacks the purple or blue discoloration which is commonly associated with peripheral giant cell granuloma and radiographically shows small flecks of calcification. Peripheral Ossifying fibroma occurs exclusively on the gingiva and has a minimal vascular component as compared to pyogenic granuloma. In terms of differentiation, peripheral giant cell granuloma can be distinguished on the basis of histopathological examination due to the presence of multinucleated giant cells and lack of an infectious source. Haemangioma is differentiated from Peripheral Ossifying fibroma histologically as haemangioma shows endothelial cell proliferation without acute inflammatory cell infiltrate.¹⁶ In only 2% of cases, neoplasm has been considered in its differential diagnosis. The teeth associated with the POF are usually not mobile, but certain reports have stressed upon dental migration which is secondary to bone loss. Hence, extraction of neighbouring teeth is not considered necessary.

The recurrence rate of peripheral ossifying fibroma is considered to be very high for reactive lesions. The rate of recurrence has been reported to vary from 8.9% to 20 %. The reason behind this is that there is incomplete initial removal, repeated injury or persistence of local irritants. The average time interval for the first recurrence is 12 months. In one of the cases, the recurrence occurred after 10 years which was probably due to local irritation & traumatic bite.

It has been suggested that if surgical intervention is not done at early stage, there are chances that that this condition can become larger in size, can cause destruction of adjacent bone and significant functional/esthetic alteration.

There are many methods for excision of this lesion. In this case scalpel method was used since the patient was clinically healthy with no medical disorder. Also, there were no complications during the operative procedure.

V. CONCLUSION

Gingival enlargement is seen in different forms and has varying etiologies. A localized gingival enlargement that has no obvious etiological basis should be biopsied so that malignant neoplastic disease is identified, treated and a strong basis is provided for the treatment of other less dangerous entities such as fibromas, papillomas and peripheral giant cell granulomas. Since peripheral ossifying fibroma has a high recurrence rate, it becomes necessary for the clinician to excise it thoroughly from the base of the periosteum. In addition to that, all the etiological factors must be completely eliminated.

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