Peripheral Ossifying Fibroma: a case report and literature review

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Abstract

Gingival growths are very common in the oral cavity. Most of these lesions are benign, but some do have malignant potential. However, Lesions with similar clinical presentations make it difficult to arrive at a correct diagnosis. Peripheral ossifying fibroma (POF) is one of the most infrequently occurring gingival lesions whose pathogenesis is uncertain. It is more common in women and the usual location is the maxilla. Here we are reporting a case which was diagnosed as peripheral ossifying fibroma after complete intra/extra oral examination, radiographic analysis ,histopathologic examination, and its surgical management with post operative follow up.

Key Words : Peripheral ossifying fibroma, Pyogenic granuloma, Oral tumors

INTRODUCTION

In gingiva most of the localized growths are reactive rather than neoplastic in nature.[1] The most common reactive lesions seen on the gingiva are focal fibrous hyperplasia, pyogenic granuloma, peripheral giant cell granuloma, and peripheral ossifying fibroma (POF).[2] Amongst these gingal growths peripheral ossifying fibroma [POF] is an uncommon focal, reactive, non-neoplastic tumor-like growth that primarily arises from the interdental papilla.[3] POF may be sessile or pedunculated. The color of this lesion may vary from pale pink to red with smooth surface. The present article highlights a case report related to peripheral ossifying fibroma in a 25-year female patient, its diagnosis, clinical management along with reviewing the literature.

Fig 1: A well-defined growth present in relation to 23 measuring about 2 cm × 2 cm in diameter.

Fig 2: A well-defined growth in relation to 23 measuring about 2cm × 2cm in diameter.

CASE REPORT

A 25-year-old female patient reported to a surgeon with a complaint of swelling of the gums near upper left front tooth region for the past 1 year. The swelling started as small nodule that progressed gradually to the present size. There was no relevant family and medical history and patient did not give any history of trauma, injury, or food impaction. On intraoral examination, a well-defined growth was present in relation to 23 measuring about 2 cm × 2 cm in diameter. (Figures 1). On palpation, swelling was nontender, sessile, and soft in consistency. Bleeding on probing was present. (Figure 2).

Fig 3: Radiographic findings showed slight crestal bone loss with no periapical lesion

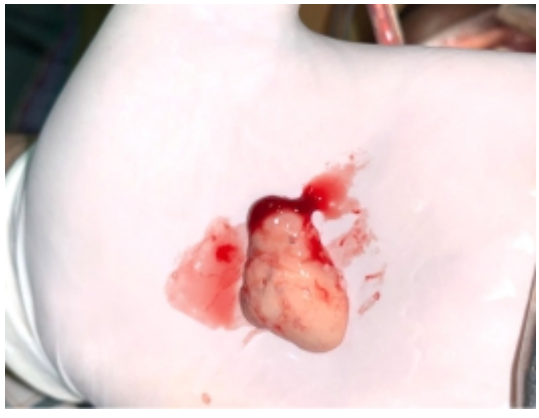

Fig 4: Excisional biopsy tissue received in histopathology lab.

Radiographic findings showed slight crestal bone loss with no periapical lesion and no other abnormality detected. (Figure 3).Based on the history and clinical examination the case was provisionally diagnosed as Pyogenic granuloma. Under local anesthesia, excisional biopsy was performed and the tissue was submitted to the Department of Oral Pathology for histopathological investigations. (Figure 4).

Histologically, the tissue section revealed hyperkeratinized stratified squamous epithelium with cellular fibrous connective tissue. The area of ulceration is covered by a fibrinopurulent membrane. The subepithelial connective tissue exhibits moderately dense mixed inflammatory cell infiltrate and capillary vessels.(figure 5) Deeper part of section showed a cellular connective tissue exhibiting spindle and plump shaped fibroblast arranged in streaming and whirling pattern. The connective tissue also exhibits spicules of vital bone and foci of globular calcification. (Figure 6,7).On the basis of clinical, histopathological, and radiographic examination, the diagnosis of Peripheral ossifying fibroma was given. The patient advised for follow-up 15 days postoperatively. The surgical site appeared to be healing well.

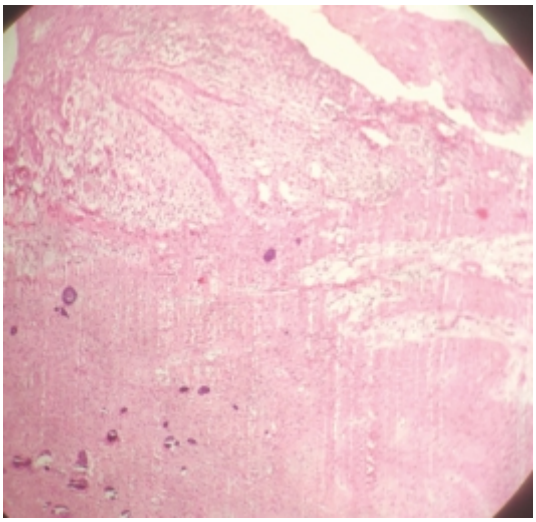

Fig 5: The subepithelial connective tissue exhibits moderately dense mixed inflammatory cell infiltrate and capillary vessels

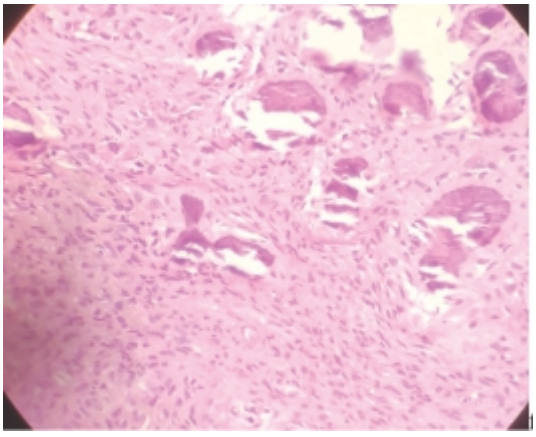

Fig 6: The connective tissue exhibits spicules of vital bone and foci of globular calcification.

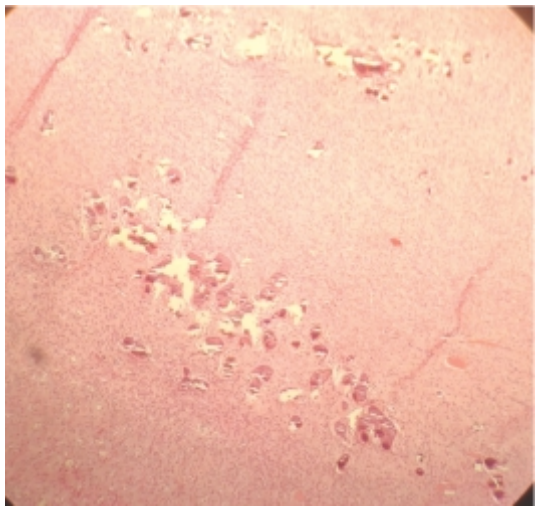

Fig 7: The connective tissue exhibits spicules of vital bone and foci of globular calcification

DISCUSSION

In 1982, Gardner coined the term peripheral ossifying fibroma for a relatively common gingival lesion that is reactive in nature.[4] It accounts for about 9.6% of gingival lesions.[5]

The exact cause of Peripheral odontogenic fibroma is still unknown. However trauma or local irritants such as dental plaque, calculus, ill fitting dental appliances and faulty dental restorations may be associated with the lesion. The reasons for considering periodontal ligament origin for POF include exclusive occurrence of POF in the gingiva (interdental papilla), the proximity of gingiva to the periodontal ligament and the presence of oxytalan fibers within the mineralized matrix of some lesions. Chronic irritation of periosteal and periodontal membrane causes

metaplasia of connective tissue with resultant initiation of bone formation and dystrophic calcification.[6]

Hence peripheral ossifying fibroma is a reactive focal gingival lesion characterized by hyperplasia of fibrouse tissue and calcification in connective tissue. It is considered that some peripheral ossifying fibroma originate from pyogenic granuloma which shows the maturation of fibrous tissue and subsequent calcification. Despite the similarity in terminology, it is not considered to be the extraosseous counterpart of central ossifying fibroma.[3]

Demographic data from the literature indicates peak occurrence of POF is third decade and commonly in incisor canine region followed by premolar and molar area which is consistent with the present case.[7] Clinically peripheral ossifying fibroma appears as a solitary nodular mass either pedunculated or sessile. The size of lesion is generally less than 2 cm diameter and the color of lesion ranges from red to pink and surface may be ulcerated. Mobility or migration of adjacent teeth also reported.[3] This case presented with a non tender sessile swelling of 2 x 2 cm diameter.

Some suggests that the hormonal influences may also play a role given the higher incidence of peripheral ossifying fibroma among females. Exposure of inflamed gingiva to progesterone and estrogen from saliva and blood stream is thought to be a contributing factor.8 Very few cases have been reported in pediatric age group (23.2%).[7]

Radiographically ,peripheral ossifying fibroma may not show any significant changes. Some cases show superficial bone loss, cupping effect and varying radiodensity depending on the degree of mineralization.[9] In this present case, the lesional areas show some amount of horizontal bone loss.

Histologically the lesional tissue shows fibrous proliferation and an associated increased cellularity. The fibroblasts are plump shaped with variable amounts of calcification in connective tissue stroma. The calcified material may be osteoid, cementoid or dystrophic calcification. Bone is woven trabecular or mature lamellated. The dystrophic calcifications are seen in the form of tiny or large globules, irregular masses or multiple masses of basophilic mineralization matrix.[3] On comparing the histologic features of the present case, it was seen that most of the finding were similar to characteristics results described in the literature .

Different treatment modalities include surgical excision by scalpel, laser or electrosurgery and removal of the irritants.[10] Surgical excision including the involved periodontal ligament and periosteum are the preferred treatment which was performed in this case. The recurrence rate of 8-20% also has been reported.[11] The reason cited for recurrence was budding of basal cell layer of surface epithelium.[7]

CONCLUSION

Peripheral ossifying fibroma is slowly progressing gingival enlargement which has to be differentiated from neoplastic growth and other gingival growth forms. In the case presented above we can conclude that with proper intra/extraoral examination and confirmatory histopathologic examination the firm diagnosis of the lesion can be made. Close postoperative follow up is required because of its high recurrence rate in incompletely removed lesions.

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