

## Peripheral Ossifying Fibroma Mimicking Pyogenic Granuloma -A Case Report

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### ABSTRACT

Peripheral ossifying fibroma “a gingival nodule which is composed of a cellular fibroblastic connective tissue stroma which is associated with the formation of randomly dispersed foci of mineralised products, which consists of bone, cementum-like tissue, or a dystrophic calcification. The lesion is considered part of an ossifying fibroma, but that is usually considered to be a gnathic tumor. Pyogenic granuloma (also known as a "Eruptive hemangioma", "Granulation tissue-type hemangioma", "Granuloma gravidarum", "Lobular capillary hemangioma", "Pregnancy tumor", and "Tumor of pregnancy") is a vascular lesion that occurs on both mucosa and skin, and appears as an overgrowth of tissue due to irritation, physical trauma or hormonal factors. It is often found to involve the gums, the skin and nasal septum, and has also been found far from the head such as in the thigh. This article highlights a peculiar case presentation about both one lesion mimicked the other and how the diagnosis was finally made by ruling out one lesion.

**Keywords:** Differential diagnosis, Histological features, Peripheral ossifying fibroma, Periodontal ligament.

### INTRODUCTION

Fibrous growths of the oral soft tissues are fairly common and include a diverse group of reactive and neoplastic conditions. One such growth is peripheral ossifying fibroma. It is typically a solitary, slow growing, sessile or pedunculated nodular reactive gingival lesion that is believed to arise from the cells of

periodontal ligament and periosteum. It occurs in the second decade of life and more common in females. It is more common in maxilla than mandible and anterior than posterior region. Inflammatory hyperplasia originating in the superficial periodontal ligament is considered to be a factor in the histogenesis of POF. Treatment includes

excision down to periosteum to eliminate any local irritants and care must be taken to maintain or re-establish acceptable gingival architecture and periodontal integrity. In this article we present a case report of peripheral ossifying fibroma and review of the literature.

### Review of literature

Ossifying fibroma is a slow-growth tumor, and most of its lesions are not larger than 2 cm. Though, occasionally it can grow as far as 6 cm. The highest incidence in this study was found in infants and in young adults, mainly at the age range from 10 to 19; affecting especially females (2-4 times). In histological terms, ossifying fibroma is more cellular and less vascular type than the pyogenic granuloma. The observed mineralized tissue observed can be classified into blended irregular bone trabeculae, lamellar trabecular bone, curved bone trabeculae and oval and/or spheroid ossicles. The literature states that the origin of the ossifying fibromas lies on interdental papilla and on pluripotent cell of the periosteum or periodontal ligament considerable confusion has prevailed in the nomenclature of peripheral ossifying fibroma and this has contributed to an obscured understanding of this lesion. Commonly used synonyms include cementifying fibroma, peripheral fibroma, peripheral fibroma with cementogenesis, peripheral fibroma with osteogenesis, peripheral fibroma with calcification, calcifying or ossifying fibrous epulis, calcifying fibroblastic granuloma. Though the etiopathogenesis of POF is uncertain, an origin from cells of periodontal ligament has been suggested.

The Reasons for considering a periodontal ligament origin include: excessive occurrence of POF in the gingival (interdental papilla, the proximity of the gingival to periodontal ligament, the presence of oxytalan fibres within the

mineralized matrix of some lesion, the age distribution which is inversely related to the number of lost permanent teeth and the fibrocellular response in periodontal ligament. Some investigators consider it a neoplastic process while others argue it is a reactive process. In either case, the lesion is thought to arise from cells in periodontal ligament. Trauma or local irritants such as dental plaque, calculus, microorganisms, masticatory forces, ill fitting dentures or poor quality restorations have been implicated in the etiology of POF. The influence of hormone is considered to be the etiological factor in females. The definite diagnosis of POF is made by histopathologic evaluation of biopsy specimens. The following features are usually observed during microscopic evaluation.

1. Benign fibrous connective tissue with varying content of fibroblast, myofibroblast and collagen
2. Sparse to profuse epithelial proliferation
3. Mineralized material which may represent mature, lamellar or woven osteoid, cementum like material or dystrophic calcifications.
4. Acute and chronic inflammatory cells are also identified.

In some cases, this characteristic pattern is only part of the pattern of a larger lesion that may resemble an irritation fibroma or pyogenic granuloma. In vast majority of cases there is no apparent underlying bone involvement visible on the roentgenogram. However, on occasions, there does appear to be superficial erosion of bone. Mobility and migration of adjacent teeth is occasionally observed. Peripheral ossifying fibroma has to be differentiated from inflammatory gingival hyperplasia, peripheral giant cell granuloma, pyogenic granuloma, fibroma and peripheral odontogenic fibroma. Peripheral odontogenic fibroma is an uncommon neoplasm that is believed to arise from

odontogenic epithelial rests in periodontal ligament or attached gingiva itself. It is considered to be extra osseous counterpart of the central odontogenic fibroma of world health organization type. It is firm slowly growing, sessile and nodular growth of the gingiva, often on mandibular buccal and labial aspect. The surface of the lesion is usually smooth and non ulcerated. It has a wide age range of occurrence and both sexes are affected equally. Histopathologically peripheral odontogenic fibromas consists of un capsulated mass of interwoven cellular fibrous connective tissue that contains scattered nests or strands of odontogenic epithelium. Myxoid foci, osteoid, cementoid and dystrophic calcification are sometimes seen. Pyogenic granuloma presents as soft, friable nodule that bleeds with minimal manipulation, but tooth displacement and resorption of alveolar bone are not observed. Peripheral giant cell granuloma has clinical features similar to POF; however POF lacks the purple or blue discolouration commonly associated with peripheral giant cell granuloma and radiographically shows flecks of calcification. Excision down to periosteum is done to eliminate any local irritants. Care must be taken to maintain or reestablish acceptable gingival architecture and periodontal integrity. Cundiff has reported 16% rate of recurrence and Eversole and Rovin has given 20% recurrence rate. A case of multicentric peripheral ossifying fibroma has been reported by Satish KS *et al*.

## CASE REPORT

A 23 years old male patient, a local resident from bangalore, reported to the Department of Oral Medicine and Radiology with the chief complaint of gingival growth in the upper anterior teeth region (Fig.1).

The patient gave the history of noticing this growth in the gingiva of maxillary anterior tooth region 2 months

back. The growth was initially small in size, progressing gradually to attain the present size. The growth was asymptomatic not interfering in any function but bled on brushing the teeth. It was not associated with teeth tenderness or teeth mobility. He gave a history of similar growth occurring at the same site twice before which he got excised in a hospital 2 years and 1 year back respectively. No history of similar growth occurring elsewhere in the oral cavity.

### Past medical & drug history

No history of systemic disease or infection. No history of any chronic drug use or any drug allergy as well.

### Dental history

Visited before for extraction of teeth with uneventful healing.

### Family history

No history of familial, contagious, hereditary disease.

### Local examination

Lymph nodes were not palpable.

T.M.J examination revealed no abnormality.

### Examination of the swelling

Extraorally no obvious swelling or gross asymmetry noticed.

### Intra oral Examination of Soft Tissues

Intraorally a solitary proliferative growth was noticed on the labial gingiva w.r.t 13. The growth is sessile, fan shaped, erythematous except for the superior most part which is pink, measuring approximately 2 cms in its greatest extension. On palpation the growth appeared sessile (no stalk), non-tender, soft to firm, bled on provocation and was mobile over the fixed base. There was no mobility of associated tooth noticed.

Gingiva appeared generalized erythematous, firm and resilient, scalloped with rounded margins with partial loss of stippling and did not bleed on probing. Also noticed were local deposits of plaque and calculus.

#### Intra oral examination hard tissue

The teeth 46 and 36 are decayed.

#### Provisional diagnosis

Pyogenic granuloma.

#### Differential diagnosis

1. Peripheral ossifying fibroma
2. Peripheral giant cell granuloma
3. Puberty gingivitis.
4. Epulis granulomatosa
5. Inflammatory Fibrous Hyperplasia

#### Investigations

##### Radiographic

IOPA radiograph (Fig.2) w.r.t the tooth 13 revealed normal tooth and its supporting structures with no changes in the periodontium and the periapical region of the tooth.

##### Immediate treatment

Excisional biopsy of the lesion was performed (Fig.3).

##### Histopathological examination

Submitted section (Fig.4) shows presence of epithelium which is parakeratinized stratified squamous showing hyperplasia with elongated rete ridges. Connective tissues are dense consisting mainly of collagen bundles with areas of plump fibroblasts having open faced nucleus. Areas of basophilic calcified tissues were noted, some of which were irregular in shape and large, several small calcified tissues were also noted and were surrounded by plump cells. Some were arc shaped and most of them

had an eosinophilic zone around them, suggestive of: Peripheral Ossifying Fibroma.

#### Confirmed clinical diagnosis

Peripheral ossifying fibroma.

#### Follow up

Patient reported back after one week for suture removal. Wound healed completely and there were no associated symptoms. Patient was referred back to Department of orthodontia for completion of treatment. He was followed up for 6 months to assure no signs or symptoms of recurrence.

#### CONCLUSION

Due to their clinical and histopathological similarities, it is thought that some peripheral ossifying fibromas develop as a pyogenic granuloma, which undergoes fibrous maturation and then ossification. These lesions are often mistaken and removed by superficial incision. It is important to remove lesion completely in order to reduce recurrences, by including subjacent periosteum and periodontal ligament besides their possible causes.

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**Figure 1.** Preoperative view of the proliferative growth noticed in gingiva

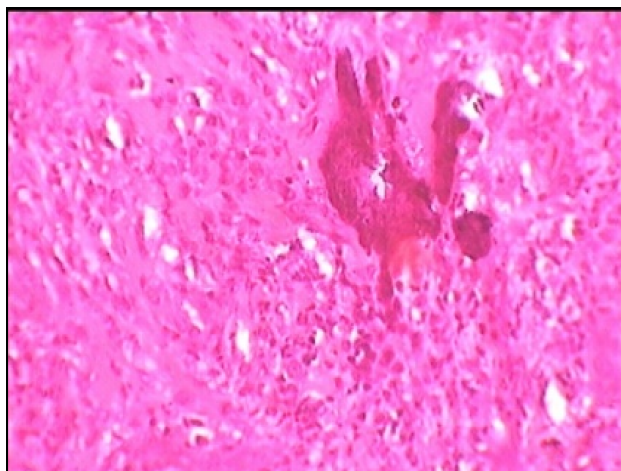


**Figure 2.** IOPAR of the involved tooth region





**Figure 3.** Intraoral view after the completion of the excisional biopsy



**Figure 4.** Histopathological view of the lesion