

# Peripheral Ossifying Fibroma- A Case Report

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## ABSTRACT

Peripheral ossifying fibroma (POF) is a focal, reactive, non-neoplastic tumor like growth of the soft tissue that often arises from the interdental papilla. We reported a case of peripheral ossifying fibroma (POF) in maxillary left anterior region in a 25 years old male patient.

**Key words:** Localized gingival growth, Peripheral ossifying fibroma, periodontal ligament

## Introduction

Localized gingival growths are one of the most frequently encountered lesions in the oral cavity and peripheral ossifying fibroma (POF) is one of them.<sup>1</sup> It accounts for 3.1% of all oral tumors and for 9.6% of gingival lesions. POF is a focal, reactive, non-neoplastic tumor like growth of the soft tissue that often arises from the interdental papilla.<sup>2</sup> Though the etiopathogenesis is uncertain, an origin from cells of the periodontal ligament has been suggested. It tends to occur in the 2<sup>nd</sup> and 3<sup>rd</sup> decades of life, with the peak prevalence between the ages of 10 and 19 years.<sup>3</sup>

It may be sessile or pedunculated, the color varying from pale pink to cherry with smooth surface accounting for 9% of all gingival growths.<sup>4</sup> Excessive proliferation of mature fibrous connective tissue is a response to gingival injury, gingival irritation, subgingival calculus or a foreign body in the gingival sulcus.<sup>5</sup> Chronic irritation of the periosteal and periodontal membrane causes metaplasia of the connective tissue and resultant initiation of formation of bone or dystrophic calcification.<sup>6,7</sup>

We reported a case of peripheral ossifying fibroma (POF) in maxillary left anterior region in a 25 years old male patient.

## Case report

A 25 years old male patient reported to the department with chief complaint of gingival growth in maxillary left front teeth region since 2 months. History of presenting illness revealed that growth started as small size which gradually increased to obtain present size. No history of trauma or pain in same region.

Intraoral examination revealed a single 1X 1.5 cm irregular pale pink growth extending mesiodistally from middle surface of 11 up to the mesial surface of 12 and cervico-incisally from attached gingival up to the middle third of crowns of 11, 12 (Figure 1). On palpation, the growth was peduncled, non-tender with no pus or blood discharge.

The periodontal treatment plan included patient education and motivation for oral hygiene instructions and quitting the habit, scaling and root planning. Scaling and root planing was performed for elimination of local etiological

factors. After 1 week of scaling and root planning, an excisional biopsy of the growth using electro-surgery was performed under local anesthesia (Figure 2, 3). Patient was given post-operative instructions and was prescribed with analgesic (tablet ibuprofen-400 mg TDS every 4-6 hours as needed for pain) and antimicrobial rinse (0.2% chlorhexidine gluconate twice-a-day for 1 week). The growth was enucleated (Figure 4) and was sent for histopathological examination. The histopathology report revealed mass of connective tissue covered partly by parakeratinized stratified squamous epithelium with abundant of fibroblasts, thin collagen fibers, blood capillaries and few inflammatory cells. Also, few irregular calcified masses were appreciated. On the basis of clinical and histopathological findings, the final diagnosis of peripheral ossifying fibroma (POF) was put forth. Patients was recalled regularly (Figure 5).

**Figure 1 Pre- operative**



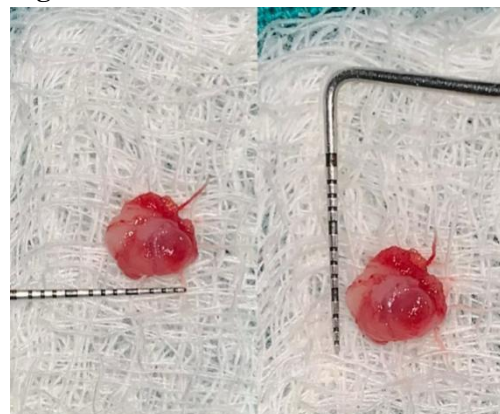
**Figure 2 Excision using electro-surgery**



**Figure 3 Immediate post- operative**



**Figure 4 Excised lesion**



**Figure 5 Post- operative 3 month**



### Discussion

POF had an incidence in the range of 9–10%. It is more commonly seen in the first and second decade of life and has a female preponderance.<sup>8,9</sup> The most common location for this lesion is the anterior maxilla (about 60% of cases) with 55–60% presenting in the incisor-cuspid region. In our case also it was seen in maxillary anterior region. However, it was seen in male patient. However, Kohli et al<sup>10</sup> have reported a POF associated with an anterior mandibular neonate tooth in a 2-hour-old female.

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. Excessive proliferation of mature fibrous connective tissue is a response to gingival injury, gingival irritation, subgingival calculus or a foreign body in the gingival sulcus. Chronic irritation of the periosteal and periodontal membrane causes metaplasia of the connective tissue and resultant initiation of formation of bone or dystrophic calcification.<sup>11</sup> Kumar et al<sup>12</sup> suggested that POF arises from the periodontal ligament cells as it arises frequently in interdental papilla, its proximity to the gingiva and the periodontal ligament along with the presence of oxytalan fibers within the mineralized matrix of some lesions. It has been postulated that POF develops from the secondary fibrosis of long-standing

pyogenic granuloma to which it resembles clinically as well as histopathologically. It may arise following chronic irritation of the periosteal and periodontal membrane causing metaplasia of the connective tissue along with formation of bone or dystrophic calcified masses. Hormonal influences may play an important role, as it has predilection for females particularly in the second decade of life. The rare manifestation of multicentric occurrence points to a role of genetics in the pathogenesis of POF.

A confirmatory diagnosis of POF is made by histopathologic evaluation of biopsy specimens. The following features are usually observed during the microscopic examination: (1) Intact or ulcerated stratified squamous surface epithelium; (2) benign fibrous connective tissue with varying numbers of fibroblasts; (3) sparse to profuse endothelial proliferation; (4) mineralized material consisting of mature, lamellar or woven osteoid, cementum-like material or dystrophic calcifications; and (5) acute or chronic inflammatory cells in lesions. Moreover, histopathologically, lamellar or woven osteoid pattern predominates; hence, the term “POF” is considered more appropriate.<sup>13</sup>

It is important to remove the lesion completely by including subjacent periosteum and periodontal ligament, besides the possible causes, to reduce recurrence. Thorough root scaling of adjacent teeth and/or removal of other sources of irritation should be accomplished. Tooth extraction is seldom necessary. Soft tissue lasers can also be used as the lasers have the advantage of providing a dry and bloodless surgery, reduced bacteremia at the surgical site, reduced mechanical trauma with resultant lessened psychological trauma for the patient, minimal scarring.<sup>14</sup>

Differential diagnosis of POF includes peripheral giant cell granuloma, pyogenic granuloma, traumatic fibroma, and peripheral odontogenic fibroma.<sup>15</sup> Peripheral giant cell granuloma, like peripheral ossifying fibroma, is a lesion that occurs on the gingiva and is peculiar to the oral cavity. In contrast to

peripheral ossifying fibroma, it can form on the alveolar mucosa of edentulous regions. Purple or blue discoloration distinguishes peripheral giant cell granuloma from POF. Histologically, the peripheral giant cell granuloma is composed of giant cells, whereas the peripheral odontogenic fibroma is composed of odontogenic epithelium and dysplastic dentine .<sup>16</sup> Along the line of mastication, buccal mucosa might develop traumatic fibroma. Pyogenic granuloma manifests as a small, soft, and friable nodule with a propensity to haemorrhage.<sup>15</sup>

### Conclusion

POF is a benign, slowly progressive lesion, with limited growth. Clinically difficult to diagnose, so histopathologic confirmation is mandatory. POFs are common in the mandibular region and in the second decade of life usually. Irrespective of the type of mineralized component, the treatment of choice is surgical excision and there are very few cases of recurrence reported.

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