



## Recurrent Case of Peripheral Ossifying Fibroma: Case Report with One Year Follow-Up

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### Abstract

Localized gingival enlargements are often observed within the oral cavity and the appearance is alarming for the patient. These isolated enlargements occur as a result of host-environment interaction/response to stimuli. It is a great challenge for the dentist to differentiate isolated enlargements because they present similar clinical appearance in certain stages of development. Clinical differentiation is puzzling, and a thorough microscopic examination is mandatory for a proper diagnosis. Peripheral ossifying fibroma (POF) is one of the slow growing localized gingival enlargements of the oral cavity with a female predilection. Incomplete removal of fragments during surgical excision increase the recurrence rate of this overgrowth. This case report present a recurrent case of peripheral ossifying fibroma which was previously surgically excised and recurred after a period of 2 weeks.

**Keywords:** Peripheral ossifying fibroma; Enlargement; Calcification

### Introduction

Localized gingival enlargements are one of the most frequently observed lesions in the oral cavity. Most of these lesions are reactive rather than neoplastic and is considered to be initiated by local irritants. These enlargements can adversely affect structural, functional and aesthetic harmony. The clinical appearance of these reactive lesions mimic each other. Hence differentiation of these enlargements is often puzzling to the dental clinician.

Peripheral ossifying fibroma (POF) is one of the slow growing localized gingival enlargements of the oral cavity and accounts for 9.6% of all gingival overgrowths [1]. With a female predilection, these overgrowths is more prevalent in anterior maxilla. Histopathological evidence of fibrocellular connective tissue with calcification and ossification is the characteristic feature of POF [2]. Incomplete removal of fragments during surgical excision increase the recurrence rate of this overgrowth. Recurrence of 16-20% have been put forth [3]. Various treatment modalities practiced include conventional surgical technique, electro surgery and/or lasers.

This case report highlights a recurrent case of POF in a female patient and its surgical management with 1 year follow up.

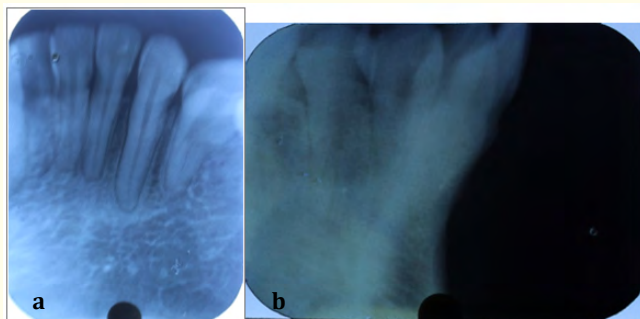
### Case Report

28-year-old female patient reported to the department of periodontics with a growth on gingiva in relation to lower right front tooth region. The growth appeared six months back and gradually increased in size until the time of interview. Patient revealed a history of surgical excision twice, during an interval of one year. Although the growth was excised it was not sent for biopsy. The patient had a contributing medical history of hyperthyroidism and was under medication since three years.

Clinical exploration revealed an overgrowth on the labial and lingual aspect of 42, 43 regions of size 1 x 0.8 cm and 0.7 x 0.8 cm respectively (Figure 1). The growth was pedunculated, reddish pink, with well-defined borders and the texture was smooth. On palpation, the growth was moderately tender and moderately firm. It was non-pulsating and blanched on application of pressure. Radiographic examination revealed widening of periodontal ligament space with no underlying bony involvement (Figure 2). The clinical differential diagnoses for the growth were pyogenic granuloma, traumatic fibroma, peripheral giant cell granuloma, and peripheral ossifying fibroma. Based on the clinical and radiographic findings a provisional diagnosis of POF was made.

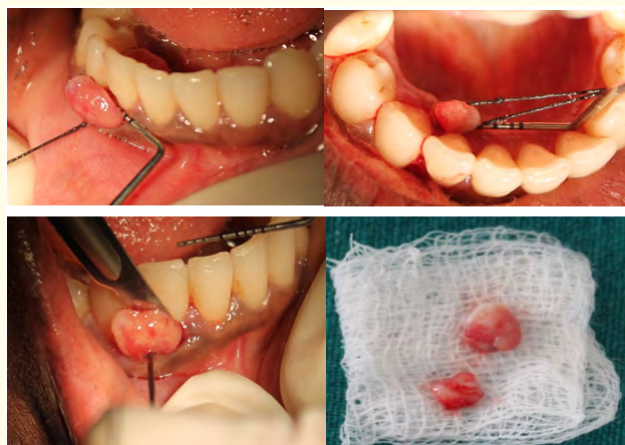


**Figure 1:** Clinical intraoral image of the growth between 42 and 43.



**Figure 2a:** IOPA showing periodontal ligament widening; **2b:** IOPA showing no underlying bony involvement.

After obtaining medical clearance and routine blood investigation thorough scaling, root planning and polishing was done to eliminate the irritational factors. The patient was enrolled in a strict oral hygiene maintenance and was instructed to use 0.2% chlorhexidine mouthwash twice daily for two weeks. Patient was reevaluated after four weeks and no significant changes were recorded in its clinical appearance. Hence excisional biopsy was planned to determine the exact nature of the lesion. Both buccal and lingual enlargements were tied at the base and was excised using scalpel under LA (Figure 3). The growths were removed in a single piece and was send for histopathological examination.



**Figure 3:** Surgical excision.

Patient reported one month after surgical excision with an overgrowth in relation to same region (Figure 4). The growth started to re-appear two weeks after excision and gradually increased in size. Considering high rate of recurrence, excision and open flap debridement was planned. Flap was reflected in relation to 42 - 43. Granulation tissue was completely removed, and thorough root planning was done in order to prevent recurrence (Figure 5). Review was done after two weeks and one year and no further recurrence was reported (Figure 6).



**Figure 4:** Intra-oral photograph showing recurrent growth 2 weeks after surgical excision.



**Figure 5:** Flap reflection and debridement.



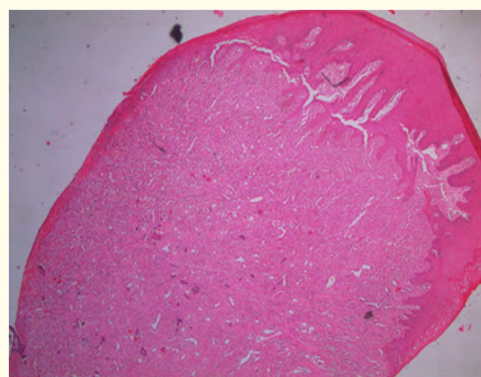
**Figure 6a:** Post-operative photograph after 2 weeks.



**Figure 6b:** Post-operative photograph after 1 year.

### Histopathological findings

Histopathological examination revealed soft tissue section showing proliferating stratified squamous epithelium and associated connective tissue. The underlying connective tissue was cellular consisting of plump fibroblasts, vascular spaces, budding capillaries and diffuse mixed inflammatory cell infiltrate. Area of ulceration with fibrin and focal neutrophilic infiltration was seen. Basophilic cementum like calcifications, ossifications in small bony trabeculae and few multinucleated giant cells was also noted within the connective tissue (Figure 7). Histopathological examination was suggestive of POF.



**Figure 7:** Photomicrograph of histopathological examination of the lesion showing cementum like calcifications and bony trabeculae within fibrocellular connective tissue stroma covered by stratified squamous epithelium.

### Discussion

Ossifying fibroma (OF) are of two types, central ossifying fibroma and peripheral ossifying fibroma [4]. POF is the third most common localized reactive lesion and the term POF was coined by Eversole and Robin in 1972 [5]. Higher incidence of POF is seen among females, due to hormonal changes [6]. It may occur at any age with peak incidence b/w second and third decade [7]. 60% of POF is reported to be in maxilla with 50% in anterior region, most commonly in the interdental papilla [8,9-11]. Although the present case is reported in female in the third decades of life, the lesion was associated with lower anterior which is not in accordance with the literature findings. Regarding the etiology of POF two theories have been proposed. First theory states that POF starts as pyogenic granuloma and later during development it get calcified. According to the second theory, POF originate as inflammatory hyperplasia of

PDL cells. Considering the proximity of PDL to gingiva and presence of oxytalan fibers within the mineralized matrix the second theory is more accepted [12,13].

Clinically POF present as a solitary, slow growing, nodular mass usually located in gingival papilla between adjacent teeth. It may be either pedunculated or sessile. These findings are consistent with the presented case. Even though majority of cases does not show underlying bone involvement, roentgenogram might present with well-defined borders and radiopaque zones [14,15]. While early lesions show more of radiolucent areas, mature lesions are commonly identified with radiopaque zones [14,16]. Cases of superficial erosion of bone have also been reported occasionally [10]. POF does not blanch on palpation [17]. However, in the present case POF showed blanching which may be due to its transition from PG [18]. Although most cases of POF are reported to be less than 1.5 cm, POF of larger sizes are also reported [19]. In the present case the dimensions of the lesions were well within 1.5 cm. Larger lesion may exert pressure on the adjacent teeth and may result in pathologic migration of the associated teeth.

Differential diagnosis of POF include traumatic fibroma (fibrous hyperplasia), peripheral giant cell granuloma (PGCG), pyogenic granuloma (PG) and peripheral odontogenic fibroma. Since clinically POF resemble other localized enlargements of gingiva a confirmatory diagnosis of POF is based on histopathologic examination [20]. Calcification, the most peculiar histopathological feature, differentiate POF from other fibrous proliferation [21]. Table 1 shows difference between POF and other localized gingival enlargements. Early POF can be easily misdiagnosed as PG [21]. Histopathologic examination of POF reveal presence of connective tissue with high cellularity and calcifications [22] and is considered as the characteristic feature of POF. While dystrophic calcifications are usually seen in early, ulcerated lesions, older, mature, non-ulcerated lesions show well-formed bone and cementum-like material. The histopathologic findings as observed in this case shows presence of connective tissue, cementum like calcification and ossifications. However, in the present case giant cells were also seen which is unusual to find in POF. This observation supports the hypothesis that POF may be the more mature and late stage of the proliferative lesion [23].

Other localized enlargements	POF
Traumatic fibroma occurs on buccal mucosa along the bite line.	POF exclusive occurrence in the vicinity of gingiva [24]
Purple or blue discoloration is commonly associated with PGCG	POF lacks the purple or blue discoloration commonly associated with PGCG <sup>11,16</sup>
PGCG of gingiva may also show mineralized woven bone /calcification but never cementum like material [25]	May contain cementum like material
Histological PGCG contain giant cells	Giant cells absent in POF
Histologically Peripheral odontogenic fibroma contains odontogenic epithelium and dysplastic dentin	Odontogenic epithelium and dysplastic dentin are absent in POF

**Table 1:** Difference between POF and other localized enlargements of oral cavity.

Conventional surgical excision, electrocautery and laser assisted excision can be considered for the treatment of POF. Considering the high rate of recurrence of POF, these lesions must be thoroughly debrided, and long term post-operative monitoring is required [26]. Removal down to the periosteum is the standardized treatment to prevent recurrence [27]. In the present case the overgrowth was previously surgically excised but showed recurrence, which may be due to incomplete removal of the growth. Hence total excision and open flap surgery was done to prevent recurrence.

**Conclusion**

Peripheral ossifying fibroma (POF) with high rate of recurrence is a non-neoplastic, slow growing enlargement of the gingiva. It is stimulated by local irritation and minor trauma. POF can be misdiagnosed with other localized lesions of the oral cavity. Hence careful radiographic and microscopic examination is necessary to differentiate it from other lesions. Treatment options include complete surgical excision down to the periosteum, and proper re-evaluation. Any remnants of lesion if present may result in recurrence.

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