

# Peripheral Ossifying Fibroma of Maxillary Gingiva: A Case Report

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**Abstract** The peripheral ossifying fibroma (POF) is a non-neoplastic reactive gingival overgrowth occurring frequently in the anterior maxilla region. Mostly it is seen as an asymptomatic swelling predominantly in female patients and is rarely encountered in postmenopausal years. Because of the dilemma in diagnosing the lesion solely on clinical basis it is always emphasized that the definitive diagnosis can be made only by histopathological examination. Further a proper treatment protocol with close postoperative follow-up is necessary in such cases as they carry a high recurrence rate. The present case report describes a female patient, in her post menopausal age with a diagnosis of POF which was surgically excised from the anterior maxillary region.

**Keywords:** peripheral ossifying fibroma, pyogenic granuloma, gingival overgrowth

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## 1. Introduction

Gingival overgrowths are common condition in the oral cavity. Peripheral ossifying fibroma (POF) is a non-neoplastic enlargement of the gingiva precipitated by local irritation and minor trauma. Literature reveals that various terminologies has been used to name POF viz; peripheral fibroma, fibrous epulis, ossified fibrous epulis, peripheral cementifying fibroma, calcifying fibroblastic granuloma or peripheral fibroma with calcification. But histologically, it is a non-encapsulated mass of cellular and fibrous connective tissue with randomly distributed calcifications; sometimes even matured bone. [1] Ossifying fibromas of oral cavity can be divided into: Central type which arises from the endosteum or periodontal ligament and Peripheral type which arises from the soft tissue. POF represents 9.6% of all gingival tumors and 3.1% of the oral lesions which are biopsied. It can occur at any age, but more commonly presents in second or third decade of life with a slight preponderance to occur more in females in a ratio of 1.22:1. [2] It is a focal reactive lesion of gingiva, which is non-neoplastic with tumor-like appearance often arising from the maxillary anterior region from the interdental papilla. The confusion with this lesion often arises with its clinical presentation which mostly resembles like Pyogenic Granuloma (PG). But it can be very well differentiated from other fibrous proliferative lesions by the presence of different types of calcifications like mature lamellar bone, immature bone,

dystrophic calcification which are more common in initial lesions and even lamellar bone may be present in older lesions. [3] The diagnosis of such a condition is purely by histopathological examination. The treatment is surgical excision of the lesion including the underlying periosteum to reduce recurrence after elimination of all local causes [4].

## 2. Case Report



Figure 1.

A 60 year female patient reported to the Division of Periodontology, Armed Forces Medical College, Pune with a chief complaint of lump in the upper front teeth region for the past 8 months where the lesion started a small nodule and slowly increased over the period to the present size. (Figure 1) The swelling was interfering with

speech, mastication, bled while brushing and was highly unaesthetic. Her past medical and dental history was not contributory. Examination revealed an oval, pedunculated growth with respect to tooth number 11, 12 region, measuring approximately 2x2x1.5cm in size with a pinkish red overlying mucosa without any ulcerations. The swelling showed the presence of a yellowish mass in the centre which was deeply embedded into it. (Figure 2) Palpation revealed a sessile base with firm consistency except the central mass which was hard in consistency. The swelling was non tender with no local rise in temperature or any pulsations. The patient was partially edentulous with only six remaining teeth which had advanced periodontal disease (Teeth number 13, 14, 15, 24, 26 & 34). All the hematological and urine investigations were within normal limits. Orthopantomogram (OPG) revealed the maxillomandibular complex with remaining six teeth and severely resorbed bone in the edentulous portions of both the jaws and a soft tissue shadow of the

swelling with a central oval shaped radiopaque mass measuring 1x1cm approximately with mild 'cupping out' effect of the underlying bone. (Figure 3) A provisional diagnosis of Pyogenic Granuloma with respect to 11, 12 region was made.



Figure 2.



Figure 3.



Figure 4.

After oral prophylaxis, the lesion was completely excised with 2mm clearance and also including the underlying periosteum under local anesthesia after taking a written informed consent. (Figure 4, Figure 5) The excised lesion was submitted for histopathological examination (HPE). HPE revealed a hyperplastic stratified squamous lining epithelium with underlying connective tissue showing areas of proliferating plump fibroblasts with mixed inflammatory cell infiltrate. Numerous

bacterial colonies were also seen with multiple areas of basophilic material suggestive of dystrophic calcifications were noted with no evidence of atypia or malignancy (Figure 6). Based on the clinical and histopathological findings the lesion was diagnosed as Peripheral Ossifying Fibroma. The patient was followed up for one year and there were no signs of recurrence.



Figure 5.

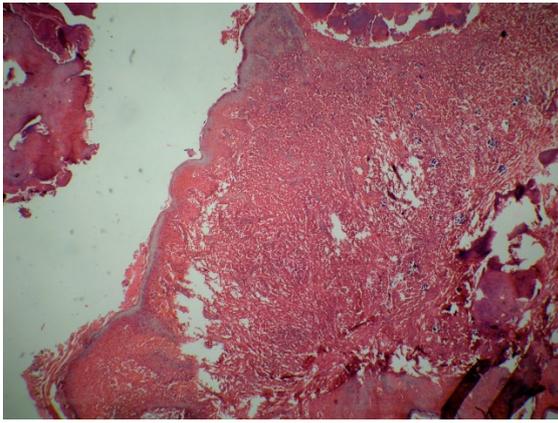


Figure 6.

### 3. Discussion

POF is a reactive lesion of gingiva first described by Eversole and Rovin in 1972 and Gardner in 1982 coined the term peripheral ossifying fibroma. [5] The lesion is reactive in nature and is not the extraosseous counterpart of central ossifying fibroma. There have been various names used for fibrous reactive lesions of the gingiva due to various controversies in the classification of these lesions. The etiopathogenesis of POF is still unclear and it is often impossible to identify the irritant causing its growth. However, dental calculus, plaque, micro-organisms, dental appliances and restorations are considered to be examples of such irritants. The clinical appearance of POF is a small, well-demarcated focal mass on the gingiva with a sessile or pedunculated base, usually originating from an interdental papilla. Histologically, the POF is a non-capsulated mass of a very cellular fibroblastic connective tissue covered by stratified squamous epithelium. Randomly distributed calcification may be dispersed throughout the cellular connective tissue. The lesion derives its name from the histological evidence of calcifications and ossifications. POF may occur at any age but exhibits a peak incidence between second and third decades of life with average age at around 28 years. The size of the lesion is usually smaller than 1.5cm but it has been reported in literature to occur at even larger sizes measuring about 4cm even. Females are more commonly affected than males thus suggesting an hormonal influence in the occurrence of this lesion. Although the pathogenesis is unclear it has a known fact that there are pluripotent cells in the periodontal ligament and periosteum, which may undergo a metaplastic change into osteoblasts, fibroblasts or cementoblasts in response to the local irritants [6].

The mineralized product seen in ossifying fibromas probably originates from periosteal cells or from the periodontal ligament. The periodontal ligament origin is considered because of the exclusive occurrence of these fibromas in the gingiva (interdental papilla), the proximity of gingiva to the periodontal ligament. All lesions do not demonstrate radiographic calcifications but a few may demonstrate radiopaque foci of calcifications scattered in the central area of the lesion. Usually there is no underlying bone involvement associated; rarely superficial erosion of bone may be present. [7] Various investigations have attempted to establish a relationship

between PG and POF, stating that PG and POF may represent extremes of the spectrum of the same pathology [8].

It has to be remembered that POF is not the counterpart of the central ossifying fibroma which represents a central benign neoplasm which arises from endosteum or periodontal ligament. POF shows a contiguous relationship with periodontal ligament occurring only in the soft tissues covering the alveolar bone. Pyogenic granuloma which is a vascular type reactive lesion of gingiva usually does not show any calcifications. However recently there is an opinion that POF falls within the spectrum of PG which undergoes maturation. It is believed that initially the lesion starts as PG which in long standing duration undergoes process of organisation which leads to the reduction in vascularity, increased fibrotic component and foci of calcifications seen histologically. The other lesions which may resemble POF are fibrous hyperplasia, irritation fibroma, peripheral giant cell granuloma and squamous cell carcinoma [9].

Surgical excision is the treatment of choice for POF. Adjunctive local periodontal treatment in the form of scaling and root planing may only ameliorate the lesion to a negligible extent. The traditional method is scalpel excision. With the advent of soft tissue LASER, Nd YAG Laser has been successfully used for excision of both PG and POF because of the lower risk of bleeding compared to other surgical techniques.

POF has a very high rate of recurrence ranging from 8% to 20% and repeated recurrences are not uncommon. Studies have reported 16-20% of recurrence (Das & Azhar, 2009) [10].

Till date there has been plethora of case reports/series on POF and its management. Although it's not an emergency condition, the gingival growth should always be viewed with circumspection. Histopathological examination of the excised lesion is the sine qua non because we should remember that an innocuous and benign looking lesion may sometimes prove to be a dangerous malignant lesion. Literature has already reported many cases of gingival squamous cell carcinomas which are mimicking soft gingival overgrowth. A practitioner with good clinical acumen should indeed always wary of non-resolving reactive lesions of oral cavity which are present over a considerable duration.

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