

Unusual Occurrence of Peripheral Ossifying Fibroma in an Elderly Male

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ABSTRACT

The present case is a scenario of occurrence of relatively common peripheral ossifying fibroma in an uncommon site of occurrence. It was noted in the maxillary posterior region in contrast to its usual occurrence in anterior maxillary region. The lesion was observed in elderly male subject aged 64 years, contradictory to its usual predilection for young females in the second or third decade of life. As this case contradicts the common norms of predilection of the lesion with regard to age, gender and site, it emphasizes the need for looking beyond the conventional norms for proper diagnosis and prompt treatment.

Keywords: Peripheral ossifying fibroma, Elderly male, Posterior maxilla, Fibroblasts.

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INTRODUCTION

There are numerous histologically different types of focal overgrowths which may occur on the gingiva, such as the peripheral giant cell granuloma, simple fibroma and peripheral ossifying fibroma (POF). They fall under the general description of benign tumors of connective tissue origin.¹ The POF is a relatively common lesion of the gingiva with a considerable confusion prevailing in the nomenclature. The various synonyms used were:

1. Peripheral cementifying fibroma
2. Peripheral odontogenic fibroma
3. Ossifying fibroepithelial polyp
4. Ossifying fibroid epulis
5. Peripheral fibroma with osteogenesis
6. Peripheral fibroma with calcification
7. Calcifying or ossifying fibrous epulis
8. Calcifying fibroblastic granuloma.

The lesion was earlier described as peripheral fibroma with calcification by Bhaskar et al. Later the term POF was coined by Eversole and Robin.²

POF has been used for relatively common gingival lesion characterized by a high degree of cellularity usually exhibiting bone formation, although occasionally cementum like material or rarely dystrophic calcification may be found instead. The lesion is considered to be reactive rather than neoplastic in nature.³

POF: The lesion is usually seen in teenagers and adults aged 10 to 19 years with a predilection for females. POF usually manifests as a well-defined and slow growing gingival mass measuring less than 2 cm in size. It occurs exclusively on gingiva, appears as a nodular mass, pedunculated or sessile that usually emanates from interdental papilla. The color ranges from red to pink with the lesion frequently but not always ulcerated. A predilection for the maxillary arch and more than 50% lesions occurring in the incisor cuspid region has been observed. The teeth are usually unaffected and rarely migration or loosening of adjacent teeth has been noticed. In vast majority of the cases, there is no apparent underlying bone involvement visible on a roentgenogram. However, on rare occasions, there does appear to be superficial erosion of bone.³ It accounts for 3% of all oral tumors and for 9.6% of all gingival lesions.⁴

The pathogenesis of this lesion is uncertain. Due to clinical and histopathological similarities, researchers believe that some POFs develop initially as pyogenic granulomas that undergo fibrous maturation and subsequent calcification. However, not all POF may develop in this manner. The mineralized product probably has its origin from cells of the periodontium or periodontal ligament.³ An origin from the cells of periodontal ligament has been suggested due to its exclusive occurrence in the interdental papilla, which is in proximity to periodontal ligament and due to the presence of oxytalan fibers within the mineralized matrix of some lesions.² Further, trauma or local irritants such as subgingival plaque and calculus, dental appliances; poor quality dental restorations, masticatory forces, food lodgement and iatrogenic factors have been thought to influence the development of the lesion.⁵

The definitive diagnosis is based on histological examination with the identification of cellular connective tissue and the focal presence of bone or other calcifications.⁶ Histology shows mainly fibrous proliferation associated with formation of a mineralized product. If the epithelium is ulcerated it is covered by a fibrinopurulent membrane with a subjacent zone of granulation tissue. The deeper fibroblastic component is often cellular especially in areas of mineralization. Mineralized component is variable cementum like material, dystrophic calcification or bone. The bone is usually woven or trabecular and older lesions may demonstrate mature lamellar bone. Trabeculae of unmineralized osteoid may be seen.³

Prognosis is good, but some instances of recurrence have been reported regularly in various studies. Surgery is the treatment of choice. The mass should be excised down to the periosteum because recurrence is more likely, if the base of the lesion is allowed to remain. The teeth associated with POF are generally not mobile, though there have been reports of dental migration secondary to bone loss. Extraction of the neighboring teeth is usually not considered necessary.^{1,3}

Incidences of recurrence have been put at 16 to 20% by various studies.¹ The reasons for recurrence include: (a) Incomplete removal of lesion, (b) failure to eliminate local irritants and (c) difficulty in access during surgical manipulation due to intricate location of POF being present usually at interdental areas. Deep excisions have been preferred as interjections to these recurrences.³ A free gingival graft can be employed to cover denuded bone after excision.⁶

This report is a presentation of a unique case of POF which was seen in an elderly male subject in the maxillary posterior tooth region. This contradicts the frequent occurrence of the lesion in adolescents. The lesion was observed in the posterior maxilla in contrast to its normal occurrence in anterior maxilla.

CLINICAL CASE PRESENTATION

A 64-year-old male presented to Department of Periodontology, JSS Dental College and Hospital, Mysore, with the complaint of a swelling in the region of upper left molar teeth since 18 months. The past dental history revealed that the patient had a similar lesion in the same region 12 years back, which was excised by a private dental practitioner.

The lesion was reported to have started as a small papule and enlarged to the present size. There was no history of pain, ulceration, bleeding or pus discharge. However, patient reported interference during mastication and discomfort due to food lodgement. Medical history revealed that he patient was hypertensive and was under medication for the same since 10 years. The blood pressure on regular monitoring was found to be under control.

On intraoral examination, oral hygiene was found to be fair. A circular growth measuring approximately 12 × 16 mm was noticed on the buccal gingiva in the region of upper left molar teeth. It was a sessile, nontender, firm and pink growth emanating from the interdental papilla (Fig. 1). The associated teeth were vital and had no mobility or pocket. Radiographic examination revealed no appreciable finding. Based on the clinical findings, a differential diagnosis of fibroma was made.

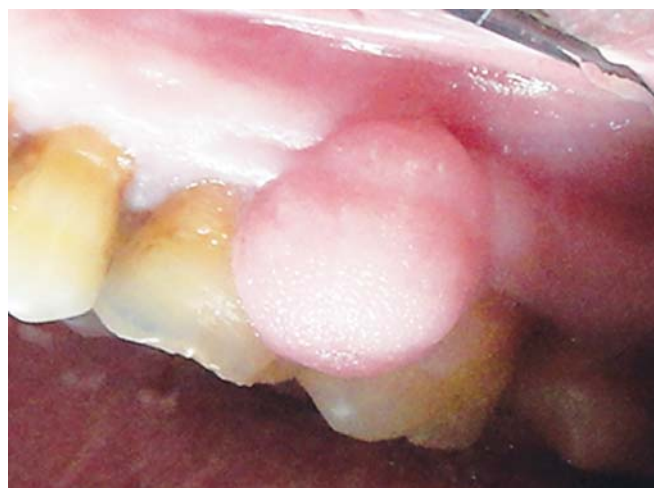


Fig. 1: Clinical appearance of lesion

The phase I therapy comprising of scaling and root planing was performed. The patient was re-evaluated after 4 weeks and scheduled for surgery. After a preprocedural rinse with 0.12% chlorhexidine gluconate mouth, local anesthetic containing 2% lignocaine with 1:80,000 adrenalin was administered. The lesion was excised using a loop electrode (Figs 2 to 4). The electro-surgical excision was opted to minimize operative bleeding as the patient was hypertensive. The fact that the activated electrode has bactericidal properties rendering the wound sterile was considered an added advantage. The biopsy was then sent for histopathological evaluation. Two weeks postoperatively, the patient reported with satisfactory healing and was asymptomatic (Fig. 5). Three months follow-up examination also showed satisfactory healing (Fig. 6). The patient is under periodic maintenance therapy and no recurrence has been observed till date.

Histopathology revealed an intact stratified squamous parakeratinized epithelium on the surface with a highly cellular underlying connective tissue with large number of



Fig. 2: Electrocautery—loop electrode

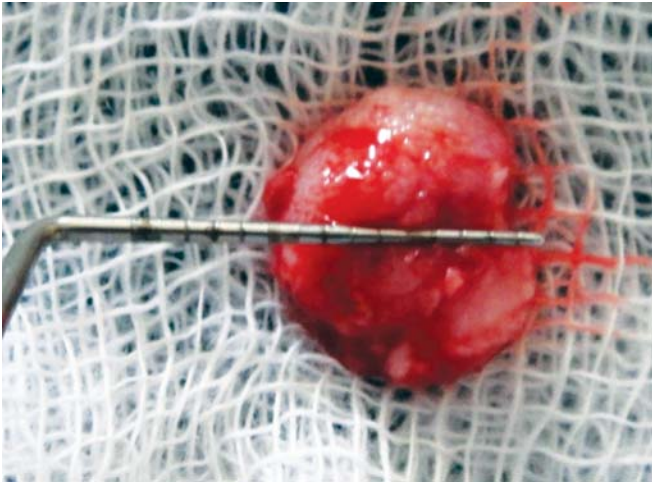


Fig. 3: Horizontal dimension of lesion



Fig. 6: Postoperative (3 months)

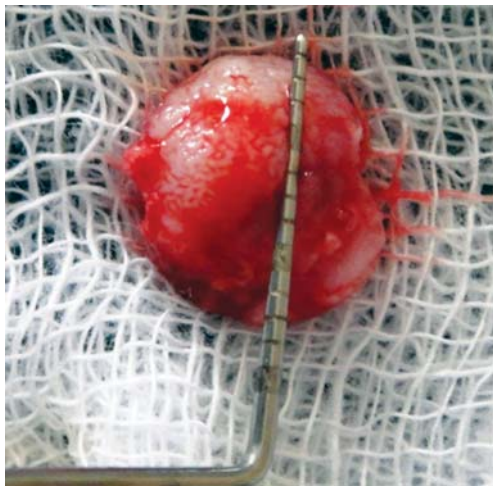


Fig. 4: Vertical dimension of lesion

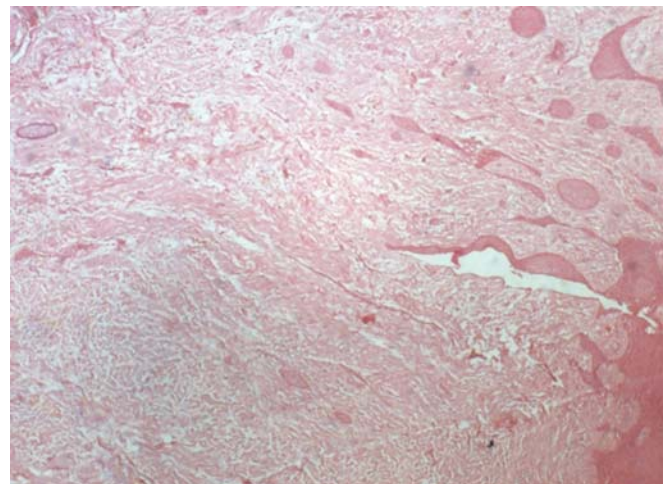


Fig. 7: Histological section showing epithelium, connective tissue and areas of calcification



Fig. 5: Postoperative (2 weeks)

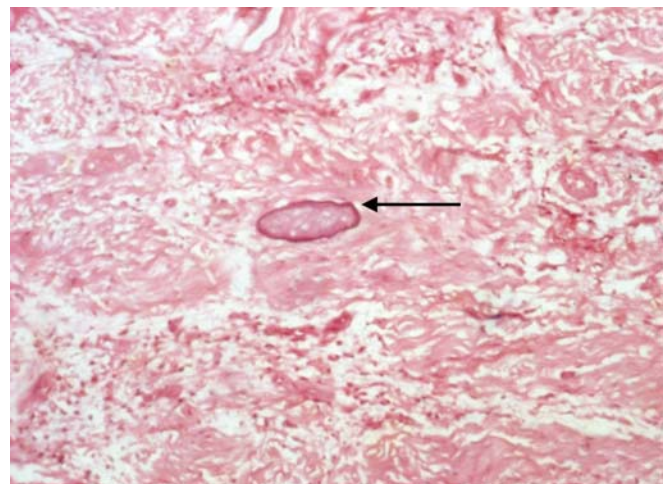


Fig. 8: Histological section with magnification showing area of calcification

plump proliferating fibroblasts. Areas of calcification were seen in the connective tissue in the form of interconnecting trabeculae of bone and osteoid (Fig. 7). The lesion was quite characteristic in its high degree of cellularity in contrast to

a simple fibroma and showed decreased vascularity in contrast to pyogenic granuloma. The identification of cellular connective tissue and the focal presence of bone, confirmed the histologic diagnosis of POF (Fig. 8).

Table 1: Differential diagnosis of peripheral ossifying fibroma

	<i>Oral fibromas</i>	<i>Peripheral odontogenic fibroma</i>	<i>Pyogenic granuloma</i>	<i>Central ossifying fibroma</i>
1. Clinical features				
Site	Buccal mucosa, gingiva, lips, palate	Mandible	Any intraoral site: Gingiva, labial mucosa	Mandible
Age	3rd-5th decades	5-65 years	3rd-4th decades	Mean age: 33 years
Gender	Female predilection	No gender predilection		Female predilection
Appearance	Well defined, slow-growing mass. Elevated nodule, normal color, sessile or pedunculated. Surface is smooth or ulcerated	Solid, slow growing, firmly attached to gingival mass arising sometimes between teeth sometimes displacing teeth.	Discrete spherical pedunculated. Bright red or purple in color. Either friable or firm. Surface ulceration	Asymptomatic, slow growing mass, rarely causing mild deformity and displacement of teeth
2. Histological features				
	Stratifies squamous epithelium. Short and flat rete pegs. Bundles of interlacing collagen fibers. Varying numbers of fibroblasts	Epithelium is usually seen in deep in the lesion away from surface. Markedly cellular and fibrous. Calcifications—trabeculae of bone, osteoid, dentin or osteodentin.	Epithelial ulceration, both atrophic and hyperplastic areas seen. Endothelial proliferation, numerous vascular spaces, chronic inflammatory cell infiltration	Numerous interlacing collagen fibers and fibroblasts. Foci of irregular bony trabeculae
3. Radiographic features				
	Nonsignificant	Islands of calcification—radiographic flecks	No significant finding	Islands of calcification—radiographic flecks
4. Treatment				
	Conservative surgical excision	Conservative surgical excision	Conservative surgical excision	Conservative surgical excision
5. Recurrence				
	Rare	Rare	15%	Rare

DISCUSSION

Benign tumors of nonodontogenic and odontogenic occurring on the gingiva present as various types of focal overgrowths. Diagnosis of these lesions can only be made on the basis of a full consideration of clinical, histological and radiological features.

Despite the similarity in terminology, POF is not considered to be an extrasosseous counterpart of the central ossifying fibroma.¹ Further, with the similar sex and site predilection of pyogenic granuloma and, as well as similar clinical and histologic features, it was believed that POF lesions may simply be varied histologic responses to irritation.⁷ A hypothesis that early POF presented as ulcerated nodules with little calcification also existed which allowed easy misdiagnosis as a pyogenic granuloma.⁸ Later on, it was proposed that the POF cellular connective tissue is so characteristic that a histologic diagnosis can be made with confidence, regardless of the presence or absence of calcification.⁹ After years of research, it has now been recognized that the POF represents an entirely separate clinical entity. Thus, a brief summary of a differential diagnosis of the lesions is presented (Table 1) to enable proper diagnosis.

Generally, POF is a lesion of the gingival tissues that predominantly affects young women and is usually located in the maxilla anterior to the molars. But, in the present case, POF was found in a 64-year-old male patient, in the posterior maxillary teeth region. A similar case has been reported in a 67-year-old man, in anterior maxillary region.²

Since, POF has an obvious predilection for females and occurs frequently in specific periods of life such as puberty and pregnancy, the existence of hormonal factors in the development of POF has been suggested in the literature. Hormonal influences may play a role given the higher incidence of POF among females, increasing occurrence in the second decade and declining incidence after the third decade.⁷ But the incidence of the present lesion in an elderly male could probably negate the theory of hormonal influence as a possible etiology for such lesions.

Other factors that have been implicated in the etiopathogenesis of POF are trauma and local irritants such as calculus, microorganisms and chewing forces.⁵ The present case also presented with local factors and hence supports this hypothesis.

The clinical appearance of this lesion is characteristic but not pathognomonic. It is a well-demarcated focal mass of tissue on gingiva with a sessile or pedunculated base. It is the same color as the normal mucosa or slightly reddened.

The surface may be ulcerated or intact. It commonly appears to originate from the interdental papilla.³ In the present case, the lesion was solitary, sessile and pink in color. It appeared to emanate from the interdental papilla of the maxillary left first and second molar. Radiograph revealed no underlying bony changes which were in agreement with the reported literature.

Histologically, the lesion showed an intact surface of stratified squamous epithelium with an extremely cellular connective tissue stroma having areas of calcification. These features were in favor of the diagnosis of POF (Table 1). The high degree of cellularity ruled out the possible differential diagnosis of a simple fibroma (Table 1). The vascularity of the lesion was not as prominent as seen in pyogenic granuloma (Table 1).

As with the reported recurrences of POF, the present case also had a history of occurrence of a similar lesion in the same area 12 years back. The treatment of choice for POF is local resection with peripheral and deep margins including both the periodontal ligament and the affected periosteal component. In addition, elimination of local etiological factors is required.³ It has been reported that electrocautery can minimize intraoperative bleeding and render the wound sterile. Also no overt redness of inflammation has been reported postoperatively after the use of electrocautery.¹⁰ Thus in the present case, after eliminating the local factors, considering the hypertensive status of the patient and also as an attempt to prevent further recurrence, electrocautery was opted. Uneventful and satisfactory healing was observed and no recurrence has been reported till date.

CONCLUSION

The peculiarity of the present case is the intriguing and uncertain occurrence of POF in an elderly male patient in contrast to its common occurrence in young female. Further the lesion was located in the posterior maxillary lesion which contradicts its usual presence in anterior maxillary region. This case asserts the need for the clinician to anticipate the occurrence of a common lesion in an uncommon site, age and gender of occurrence. The clinician has to look beyond the usual norms of gender, age and site predilection to arrive at a clinical diagnosis. Further, radiographic and histologic investigations are integral for confirmation.

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