



## RESEARCH ARTICLE

### PERIPHERAL OSSIFYING FIBROMA OF HARD PALATE: A CLINICAL AND HISTOPATHOLOGICAL CASE REPORT

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#### ABSTRACT

Gingival growths are most commonly seen now – a – days in daily routine diagnosis. These growths may be localized or generalized involving the gingiva. Most of these enlargements are considered to be reactive rather than neoplastic in nature. Clinically it is often difficult to differentiate one entity from other one. So in order to identify the lesion it is mandatory to perform biopsy and thus the histological evaluation. In this study, the clinical report of a 17 years old female patient with peripheral ossifying fibroma in the right maxilla (hard palate region) exhibiting significant size is presented posing diagnostic challenge. Clinical, radiographical and histological investigations are done to reach the final diagnosis of peripheral ossifying fibroma. Recommendations regarding treatment and follow up are provided in this case report.

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#### INTRODUCTION

Reactive lesions found on the gingiva are common and mostly non-neoplastic in nature. Many types of reactive lesions are found on the gingiva including pyogenic granuloma i.e pregnancy tumor, drug induced enlargement, focal fibrous hyperplasia and peripheral ossifying fibroma. (Bhaskar and Jacoway, 1966) The term peripheral ossifying fibroma was coined by Eversol and Robin, (1972). Waldrom in 1993 defined it as a well demarcated and occasionally encapsulated lesion consisting fibrous tissue with variable amounts of mineralised material resembling bone. In the literature, it is known by many names like peripheral cement ifying fibroma, calcified or ossifying fibroid epulis and peripheral fibroma with calcification. (Gardner, 1982) There are two types of fibromas central and peripheral. (Neville *et al.*, 2004) It is most commonly associated with interdental gingival with more female predication in their 2 to 3<sup>rd</sup> decade of life. Main causative agents for POF are subgingival plaque, poorly fitted

dental restorations, trauma (Bonder and Dayan, 1987) etc. Clinically, POF appears as a nodular painless mass, either pedunculated or sessile, usually ulcerated or erythematous or exhibiting a similar color to the adjacent gingiva. (Kenney *et al.*, 1989) The purpose of this article is to understand and discuss the case of 17 years old female patient with peripheral ossifying fibroma of hard palate reported to our OPD (Deptt. Of Oral Medicine & Radiology, PGIDS, Rohtak, Haryana)

#### Case report

A 17 years old female patient reported to Department Of Oral Medicine And Radiology (PGIDS, Rohtak Haryana), with the chief complaint of a growth on the right back palatal region for 6 months. The lesion started as a small painless papule approximately 1-1.5cm in size 5-6 months back and gradually enlarged to the present size of 2-3cms. Patient had difficulty in speech and eating food. Extraoral examination showed bilateral facial symmetry and overlying skin showed no signs of inflammation. The regional lymph nodes were also non palpable and non tender. Intraoral examination revealed solitary, oval, pedunculated, growth of approximately 2x3 cm in size present on upper palatal region extending from tooth 15 to 16 till the midpalatine area (Fig.1). On palpation growth was

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firm in consistency and non-tender. A provisional diagnosis of peripheral ossifying fibroma was made on the basis of clinical examination and history. Prescribed radiographs included an intraoral periapical radiograph (IOPA) and an occlusal radiograph, orthopantomogram (OPG). Intraoral periapical radiograph (IOPA) revealed mesially displaced tooth (15), rarefaction and mild radioopacity associated with the same tooth. Radiopacities wrt tooth no. 16 suggestive of root stump (Fig.2). The Occlusal radiograph revealed a soft tissue shadow on the palatal region crossing the midpalatine region (Fig.3) and orthopantomogram (OPG) revealed root stump wrt 16 (Fig. 4) Routine blood investigations with random blood sugar and INR were also advised to the patient before the surgical intervention. After ensuring that the all routine investigations of the patient were within the normal limits, excisional biopsy of the lesion was performed under local anesthesia (2% Lignocaine HCL with ADR) with scalpel and 15 no. blade. Adjacent tooth was also thoroughly root planned and scaled with gracey curettes (Fig.5). Antibiotics, analgesics with 2% chlorhexidine gluconate mouth were also prescribed for 5days. Patient was recalled after 14 days for follow up (Fig.6). Normal healing with no scarring and infection was noticed after 14days.



**Fig. 1. Pre-Operative**



**Fig. 2. IOPA**



**Fig.3. Occlusal view**



**Fig.4. OPG**



**Fig.5. Intraoperative view**



Fig.6. Post operative view after 14days

### Histopathology

Histopathological reports revealed fibrous proliferation with large numbers of fibroblasts are seen associated with formation of mineralized product that may include bone, cementum-like material, dystrophic calcification or a combination of each. The surface of the lesion may be intact or ulcerated stratified squamous epithelium. (Fig.7)

### DISCUSSION

Peripheral ossifying fibroma elaborate bone, cementum and spheroidal calcifications, which has given rise to various terms for this reactive lesions. Clinically the POF are sessile or it may be pedunculated and are usually less than 2 cm but occasionally can reach the size of 6 cm. Almost 2/3<sup>rd</sup> of all cases occur in female with more in anterior maxillary region and comprises about 9% of all gingival growths. High female predilection in their 2-3<sup>rd</sup> decade of life suggests that hormonal influence of the lesion. (Miller *et al.*, 1990) The pathogenesis of this lesion is uncertain and is thought to arise from the periosteal or the periodontal membrane (Santhosh Kumar *et al.*, 2011). An origin from the cells of periodontal ligament has been suggested because of exclusive occurrence of POF from Interdental papilla, the proximity of gingiva to periodontal ligament, the presence of oxytalinfibres within the mineralized matrix of some lesions, and the fibrocellular response similar to other reactive gingival lesions of periodontal ligament origin (Moon *et al.*, 2007). On the sagittal MR images, however, the epicentre of the lesion appeared to be somewhere at the junction of the hard palate and alveolar process. This suggested that it might have originated from the gingival tissue overlying alveolar process rather than the hard palate. Although radiological reports of POFs are rare, a plain radiograph may detect the focal calcifications in a POF. In this case, scattered calcifications of the POF were best depicted on CT scans. At MR imaging, the area of calcification showed a very low signal on T2 weighted sequences. A POF is known to have a variable amount of mineralization in the form of dystrophic calcifications, bone (woven or lamellar) and cementum-like material. Histologically, POF can exhibit either ulcerated or

intact stratified squamous epithelium. In typical ulcerated lesions, 3 zones could be identified:

**Zone I:** The superficial ulcerated zone covered with the fibrous exudates and enmeshed polymorphonuclearneutrophils (PMN) and debris

**Zone II:** The zone beneath the surface epithelium composed almost exclusively of proliferating fibroblasts with diffuse infiltration of chronic inflammatory cells mostly lymphocytes and plasma cells

**Zone III:** More collagenized connective tissue with less vascularity and hishcellularity; osteogenes is consisting of osteoid and bone formation is a prominent feature, which can even reach the ulcerated surface in some cases. (Bianca Nazareth *et al.*, 2011)

Treatment modulaties includes total excision with conventional scalpel and blade. Diode laser is also widely used these days as it provides bloodless field with rapid healing. (Sagar Kamal *et al.*, 2013) Other treatment options are excision with electrocautery, chemical cautery or hard water lasers i.eEr: Cr; YSSG. Still total excision is the preferred management of POF to prevent its recurrence (Kumar *et al.*, 2009).

### Conclusion

POF is a slowly progressing lesion, the growth of which is generally limited. Many cases will progress for long periods before patients seek treatment due to lack of symptoms associated with the lesion. Treatment consists of total surgical excision, including the periosteum, and scaling of adjacent teeth. Close postoperative follow-up is required because of the growth potential of incompletely removed lesions and the 8%–20% recurrence rate. (Shetty and Adyanthaya, 2012)

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