

Peripheral ossifying fibroma: A case report

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Abstract

Peripheral Ossifying Fibroma is a non-neoplastic enlargement of the gingiva with randomly distributed calcifications, immature bone and osteoid. It is found exclusively on the gingiva and does not arise in other oral mucosal location. Clinically, it resembles a peripheral fibroma, but histopathologic analysis always reveals immature bone and osteoid within the lesion. Its incidence is 0.5% in the older age group. We report a rare case of Peripheral Ossifying Fibroma in a 70-year old female. Clinical, radiographic and histopathological features along with etiopathogenesis and differential diagnosis are also discussed.

Key words: Peripheral Ossifying Fibroma, Cementum-like calcification, Radiopaque foci.

Introduction

There are two types of ossifying fibroma, central and peripheral. The central type arises from the endosteum or periodontal ligament adjacent to the root apex and expands from the medullary cavity of the bone. The peripheral type occurs solely on the soft tissue overlying the alveolar process and is a 'non-neoplastic', reactive fibrous proliferation of gingiva^{1,2}.

Clinically, it resembles a peripheral fibroma, but histopathologic analysis always reveals immature bone and osteoid within the lesion³. Peripheral Ossifying Fibroma (POF) is found exclusively on the gingiva and does not arise in other oral mucosal location⁴.

It varies from pale pink to cherry red in color, can be either pedunculated or sessile and is typically located in the interdental papilla region^{2,4}. The lesion may cause a separation of the adjacent teeth, and occasionally minimal bone resorption can be seen beneath the lesion⁵.

The peak incidence is found most frequently in teenagers and young adults and has a high recurrence rate up to 20% while women are 2-4 times more likely to be affected than men^{6,7}.

The present report describes a case of POF in a 70-year old female patient.

Case report

A 70 years old female patient reported to the outpatient department with a chief complaint of a mass in right upper posterior teeth region since six years. The medical history was not contributory.

The lesion started as a small painless nodule from the interdental papilla of right upper canine and first premolar and gradually increased in size with no history of bleeding, parasthesia and pain.

Intra-oral clinical examination revealed a multilobular exophytic growth in relation to upper right premolar and canine region along the buccal side, measuring approximately 3x3 cm in diameter, extending mesio-distally from middle third of right upper lateral incisor to middle third of right upper second premolar and from marginal gingiva above and approximately 1.5 cm below the occlusal level of the involved teeth supero-inferiorly (Fig 1). The overlying mucosa was normal in color, ulcerated and showed no vascular markings.

On palpation the inspectory findings were confirmed. The mass was firm in consistency, pedunculated, non-tender and no bruit or pulse was felt. Considerable deposition of sub and supra gingival calculus and grade two mobility in relation to right upper canine and first premolar, was noticed (Fig 2).

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On the basis of history and clinical features a provisional diagnosis of POF was given. The list of differential diagnosis included chronic fibrous epulis, peripheral giant cell granuloma, osteosarcoma, chondrosarcoma, pyogenic granuloma and peripheral odontogenic fibroma.

The investigatory work up included pulp sensitivity test, complete hemogram, intra oral radiographs and excisional biopsy of the lesion.

Involved teeth responded within normal limits to electric pulp testing.

Routine haematological investigation values were also found to be within normal limits.

Maxillary cross sectional occlusal view revealed a soft tissue shadow of lesion along the buccal aspect of the involved teeth. Dystrophic trabecular bone formation could be appreciated within the lesion with displacement of right upper canine and first premolar (Fig 4).

Intraoral periapical radiographic view showed a marked interdental bone loss and radiopacity between the right upper canine and first premolar along with displacement of the teeth (Fig 3).

The excisional biopsy was performed under local anaesthesia and H&E stained section revealed parakeratinized stratified squamous epithelium with elongated rete ridges. Irregular multiple foci of homogenous calcified areas were evident within the connective tissue (Fig 5). Thus, a final diagnosis of POF was given.

Discussion

POF has been given many synonyms, such as epulis, calcifying fibroblastic granuloma, peripheral cementifying fibroma, peripheral fibroma with cementogenesis, peripheral cemento-ossifying fibroma, ossifying fibroepithelial polyp and peripheral fibroma with osteogenesis^{8,9}.

Bhasker et al in 1984 described this lesion as peripheral fibroma with calcification and the term POF was coined by Eversol and Robin^{10,11}.

The etiopathogenesis of POF is unclear, trauma or local irritants such as subgingival plaque and calculus, dental appliances, poor-quality dental restorations, micro-organism, masticatory forces, food lodgement and iatrogenic factors all influence the development of the lesion¹⁰.

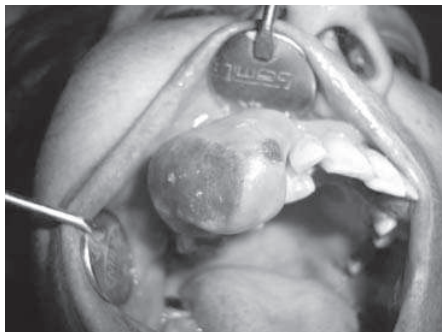


Fig 1: Photograph showing the lesion



Fig 2: Photograph showing the origin of the lesion from interdental papilla



Fig 3: Radiograph of the case



Fig 4: Radiograph showing the maxillary cross-sectional occlusal view. Displacement of right upper canine and first premolar is evident.

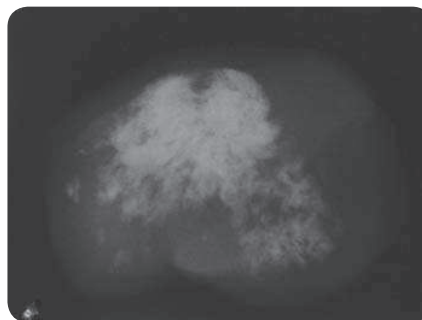


Fig 5: Radiograph showing radiopacities in excised tissue

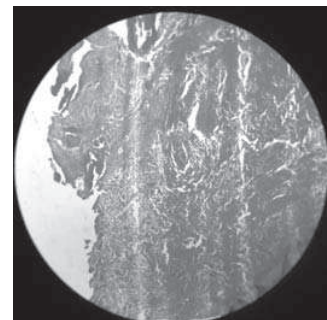


Fig 6: H-E staining ×10

An origin from cells of periodontal ligament has been suggested because of exclusive occurrence of POF from interdental papilla, the proximity of gingiva to PDL, the presence of oxytalan fibres within the mineralized matrix of some lesions, the age distribution which is inversely related to the number of lost permanent teeth, and the fibro cellular response similar to other reactive gingival lesions of periodontal ligament origin¹².

POF occurs 2-4 times more frequently in females than in males between the age of 25-35 years⁷. Only 0.5% cases are reported in the older age group¹¹. As in our case POF occurred in a 70 year old female.

The high female predilection and a peak occurrence in the second decade and declining incidence after third decade of life suggested hormonal influences¹³.

Approximately 60% of POFs occur in the maxilla and they are found more often in the anterior region, with 55-60% presenting in the incisor-cuspid region⁸.

In our case, lesion was present in right maxillary cuspid-bicuspid region.

It usually measures less than 1.5 cm and rarely reaches more than 3 cm in diameter, but lesions of 6 cm and 9 cm have also been reported^{6, 12}. The surface may be either intact (34%) or ulcerated (66%)¹³. The reported case was of 3×3cm in diameter with an ulcerated surface.

The lesion represents varying stages of a fibroma with ossification, however, ossification or calcification may not be evident in all cases, particularly in earlier stages of growth. Foci of radiopaque material, bone formation or dystrophic calcification may be seen, particularly in large lesions or lesions with overt mineralization¹².

The present case report demonstrated marked dystrophic calcification within the lesion (Fig 6).

POF can produce migration of teeth with interdental bone destruction¹⁴. Migration of teeth with appreciable interdental bone loss was present in our case.

Histopathologically, POF, can exhibit either an intact or ulcerated stratified squamous epithelium. The deeper fibroblastic component is highly cellular with central areas of calcification. The mineralized tissue may consist of bone, cementum like material, dystrophic calcification, or a combination of each⁶.

Treatment of POF consists of elimination of etiological factors, scaling of adjacent teeth and total aggressive

surgical excision along with involved periodontal ligament and periosteum to minimize the possibility of recurrence⁶.

Long term postoperative follow-up is extremely important because of the high growth potential of incompletely removed lesion and a relatively high recurrence rate of approximately 20%.

POF clinically resembles as pyogenic granuloma, peripheral giant cell granuloma or odontogenic tumors, so radiographic and histopathological examination is essential for accurate diagnosis.

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