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PALATAL PERIPHERAL OSSIFYING FIBROMA ALONG WITH GENERALIZED MARGINAL GINGIVITIS: A CASE REPORT

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ABSTRACT
Peripheral Ossifying Fibroma (POF) is a non–neoplastic enlargement of the gingiva which histopathologically represents osseous or cementum-like calcification in a fibrous connective tissue stroma. It is often found on the labial gingiva. These lesions may arise as a result of several irritants and are more prevalent in the anterior part of the maxilla. We report a rare case of palatal Peripheral Ossifying Fibroma in a 13- year old male. Clinical, radiographic and histopathological features along with etiopathogenesis, differential diagnosis and treatments are also discussed.

INTRODUCTION

POF is a slow growing nodular mass that may be pedunculated or sessile with smooth or ulcerated surface and pink to red of color. The origin of POF is thought to be the periodontal ligament, especially at the region of the interdental papillae [1]. There are two types of ossifying fibroma, central and peripheral. The central type arises from the endosteum or periodontal ligament near to the tooth apex. The peripheral type occurs on the soft tissue of the gingiva [2]. Peripheral ossifying fibromas are inflammatory response of the connective tissue to irritations, such as trauma, dental plaque, calculus, microorganisms, dental appliances in contact with gingiva and poor quality restorations [3,4].

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There is a mild tendency to occur in females with predominantly in the second and third decades of life [5]. Migration of teeth and bone loss has been reported in a few cases [6]. POF varies in size but usually measures less than 1.5 cm in diameter. Histopathological views show non-encapsulated masses of cellular connective tissue with osseous or cementum-like calcification. POF usually has no radiographic changes but occasionally foci of radiopaque material may be seen, especially in larger cases [7].

POF is treated by surgical removing of the lesion and the periosteum located at the base of the mass. Recurrence rates are minimal ranging from 8% to 20% [8]. The aim of the current study is to report and describe a rare case of palatal Peripheral Ossifying Fibroma associated with generalized gingivitis in a 13- year old male.

Case report

A 14 years old boy referred to the periodontal department with a chief complaint of a mass in left palatal region of upper jaw since two years. The medical history was not contributory [9]. The lesion appeared a painless pedunculated mass on the palatal gingiva adjacent to the left upper premolars with no history of spontaneous bleeding or pain. The overlying mucosa was normal in color, and showed no vascular presentation. The mass was firm in consistency and measured approximately 2x2 cm in diameter (Fig 1). The gingiva was red, swollen and non-scalloped. There was a significant amount of supragingival and subgingival calculus around teeth. Intra-oral clinical examination revealed moderate probing depth and bleeding on probing in almost all parts of the mouth. On the basis of history and clinical findings a provisional diagnosis of pyogenic granoloma associated with generalized marginal and papillary gingivitis was given [10] and for treating gingival inflammation chlorhexidine (0.2%) as a mouthwash prescribed [11,12].

The list of differential diagnosis included chronic fibrous epulis, peripheral giant cell granuloma, osteosarcoma, chondrosarcoma, pyogenic granuloma and peripheral odontogenic fibroma. Radiographic examination of the region revealed no significant findings pertaining to the lesion (Fig2,a). Treatment plan included scaling, root planning and oral hygiene education for treating gingivitis and excisional biopsy for diagnosing the lesion. The excisional biopsy was performed under local anaesthesia for histopathologic evaluation [13]. histopathological examination was performed on Haematoxylin Eosin (H&E) stained section [14].

The sections in Light microscopy revealed parakeratinized epithelium, well-vascularized underlying fibrous connective tissue, with collagen fibers and spindle-shaped fibroblasts. Irregular multiple foci of calcified areas were evident within the connective tissue (Fig 2, b). Thus, a final diagnosis of POF was given.

Table 1. Differential diagnosis of Peripheral Ossifying Fibroma and their diagnostic criteria (Neville, 2009).

lesion	Mean age	Sex predilection	Common site	Size
chronic fibrous epulis	Forth to six decades of life	Male to female ratio is almost 1:2	Buccal mucosa	Usually less than 1.5 cm in diameter
peripheral giant cell granuloma	31 to 41 years	60 percent female	Exclusively gingival or edentulous alveolar ridge	Usually less than 2 cm in diameter
osteosarcoma	third to fourth decades of life	Slight male predominance	Posterior body of the mandible and inferior portion of the maxilla	Varies in size
chondrosarcoma	Usually older than 50 years of age	No significant sex predilection	Maxilla	Varies in size
pyogenic granuloma	Most common in children and young adults	Definite female predilection	75% of cases reported in the gingiva	Varies in size
peripheral odontogenic fibroma	second to seventh decades of life	No significant sex predilection	Facial gingiva of the mandible	Usually between 0.5 and 1.5 cm in diameter

Figure 1. Photograph showing the origin of the lesion from interdental papill

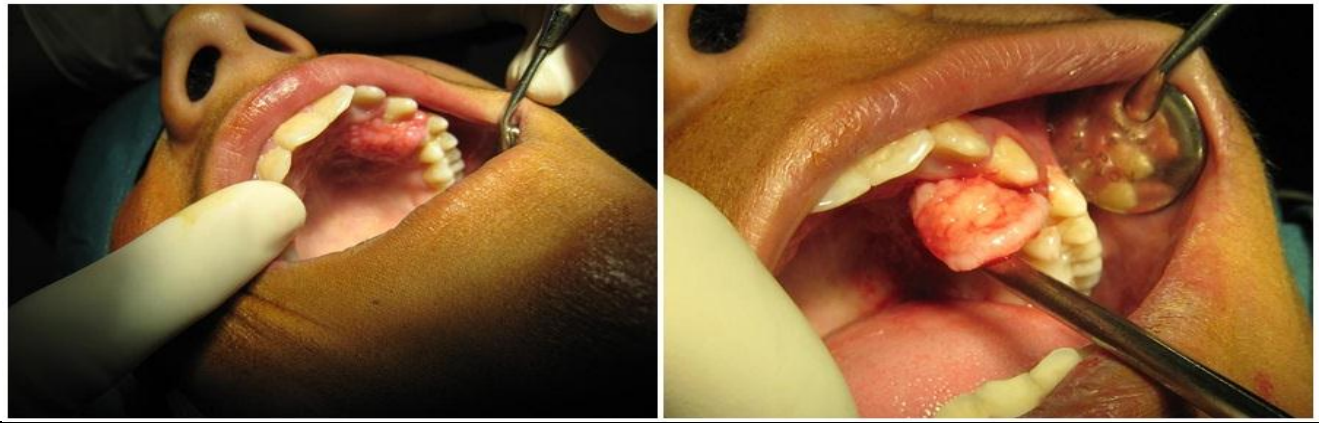
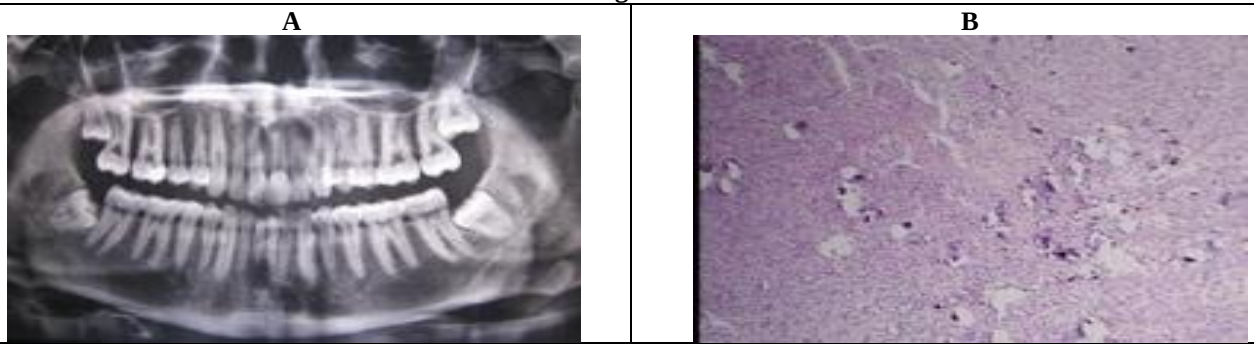


Figure 2. A) Orthopantomogram of the patient with POF, B) Hematoxylin and eosin staining of the POF lesion with × 10 magnification



DISCUSSION

The first case of intraoral ossifying fibroma was reported in 1844 [1] and the term "peripheral ossifying fibroma" for the lesion was used in 1972 [4]. Many names have been given to this lesion, such as epulis [5], peripheral fibroma with calcification [5], calcifying fibroblastic granuloma [15], peripheral ossifying fibroma [3], peripheral cemento-ossifying fibroma [16], peripheral cementifying fibroma and peripheral fibroma with cementogenesis [17].

POF is the kind of gingival enlargement that is considered to be reactive rather than neoplastic in nature. It appears as a slow growing nodular mass, either pedunculated or sessile. The color ranges from pink to red and usually less than 2 cm in size. The lesion is more prevalent in female teenagers and young adults and there is a predilection for the buccal surface of anterior maxillary gingival [1]. However the lesion the authors herein reported was in the palatal surface of the maxillary premolars and the patient was a 14 years old boy.

The exact etiology of POF is not known but factors such as trauma, subgingival plaque and calculus, food impaction, microorganisms and poor-quality dental restorations all has been related to the development of the lesion [18]. Since the lesion has a higher incidence among females, increasing occurrence in the second decade and declining incidence after the third decade, hormonal influences have been proposed as another etiologic factor [19]. The presence of generalized gingivitis in the case we reported indicates the probable etiology of microbial plaque and calculus in development of POF.The definitive diagnosis of POF is made by histopathologic evaluation of the lesion. The features include benign fibrous connective tissue with fibroblasts and collagen fibers, variable amounts of endothelial proliferation, mineralized materials like woven or lamellar osteoid, cementum-like calcification and inflammatory cells. The origin of the mineralized product probably is cells of the periosteum or periodontal ligament [20]. In the histopathologic view of the case authors have reported the surface of the lesion was covered with stratified squamous epithelium with a subjacent zone of granulation tissue with inflammatory cells. Areas of fibrous connective tissue, fibroblast and endothelial proliferation and mineralization were present. The type of mineral products was mainly woven and trabecular bone with some parts of dystrophic calcification.

CONCLUSION

POF is a non-neoplastic response of the connective tissue or the periodontal ligament to local irritations. There is a mild predisposition to women in the second and third decades of life. Though the most common site is the labial surface of anterior part of the maxilla, it can also occur in the palatal aspect of the maxilla. However clinical and radiographic examination followed by histopathogical examination is necessary for diagnosis. The treatment of choice is surgical excision of the mass with root planning and curettage of the area to prevent recurrence. Regular follow up is required as there is a growth potential for recurrence.

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