Peripheral ossifying fibroma
S V S G Nirmala, Ramasub Bareddy, Sivakumar Nuvvula, Swetha Alahari, Sandeep Chilamakuri

Abstract
Background: Peripheral ossifying fibroma is a solitary growth on the gingiva which is thought to arise from the periodontal ligament. We report a case of peripheral ossifying fibroma in the maxillary anterior region of a 13 year old girl.
Case Presentation: The patient presented with a gingival lesion in the maxillary left anterior region of the mouth since 2 weeks. Following thorough full mouth scaling, an excisional biopsy was done and the specimen was sent for histopathological examination. Healing of the surgical site was uneventful. Based on the clinical and histopathological findings a final diagnosis of peripheral ossifying fibroma was made.
Conclusion: The diagnosis warrants for frequent recall interval for monitoring recurrence. This report highlights the importance of definitive diagnosis in order to provide appropriate treatment. (El Med J 2:2; 2014)
Keywords: Maxillary Gingiva, Peripheral Ossifying Fibroma, Pyogenic Granuloma

Introduction
Solitary gingival enlargements in children are relatively common findings and are usually the result of a reactive response to local irritation [1]. Peripheral ossifying fibroma (POF) is a reactive lesion characterized by the growth of non-neoplastic mass in the gingiva [2-6]. Its color may resemble that of a normal mucosa or may be slightly reddish and its surface may be either intact or ulcerated [2]. Although this lesion is thought to be relatively common, it accounts for less than 1% of all oral biopsies performed. The lesion usually doesn’t exceed 2.0 cm and involves predominantly the anterior region of the mandible affects more commonly females and it is more frequently found during the second decade of life [2-8].

The etiology of the peripheral ossifying fibroma is unknown, although some authors have suggested that the lesion is associated with inflammatory hyperplasia of the periodontal ligament [4, 8]. Others speculate about a possible hormonal influence since prepubertal patients are rarely affected and the disease incidence falls significantly after the third decade of life [8]. Histologically, the lesion consists of fibrous proliferation associated with formation of mineralized tissue, which can resemble both cementum and dystrophic calcification. When formed is observed, the lesion is called peripheral cemento ossifying fibroma [4, 5]. The objective of the present article is to report a case of POF occurring in the maxillary anterior region of a 13 year old girl.

Case Presentation
A healthy 13 year old girl reported to the department of Pedodontics with a slow growing painless swelling behind her front teeth. According to the patient, the “reddish purple lump” had been present for approximately 1 month and her father stated that it had just recently become visible between the front teeth. As reported by the patient, the growth was interfering with her bite and felt uncomfortable. Occasional bleeding was reported while brushing. During consultation, it became apparent that the patient’s father was very concerned about the pathogenesis of the lesion. According to the father, their family physician had discussed the possibility of the lesion being cancer, which had raised the father’s anxiety level considerably.

The lesion appeared reddish pink with areas of white. It was slightly pedunculated with what appeared to be a broad based attachment. The lesion was not fluctuant, nor did it blanch with the pressure, but had a rubbery consistency. It was tender to firm pressure, but not to light palpation. Bleeding on probing was observed. The tooth was not tender on percussion and vitality test was positive. The differential diagnosis consisted of irritation fibroma, pyogenic granuloma and peripheral giant cell granuloma (PGCG). The differential diagnosis was discussed with the patient and her father in an attempt to alleviate fears of malignant lesion.

Complete hemogram was performed which showed all blood counts to be within normal limits. Written consent was acquired for the procedure, the patient was scheduled for a thorough full mouth scaling. Under local anesthesia, whole growth was excised completely using both a scalpel and an electrocautery device. The tissue was submitted to the oral pathology division for histopathological diagnosis. Microscopic examination of the excised tissue revealed a gingival...
nodule that was partly ulcerated and partly lined with hyperkeratinized stratified squamous epithelium with a normal maturation pattern. Much of the nodule consisted of hypercellular well vascularized fibrous connective tissue containing plump mesenchymal cells as well as numerous multinucleated giant cells. The specimen also exhibited a fairly large area of immature bone formation but no evidence of malignancy (Figure 2). Based on histopathological and clinical examination, the diagnosis stated was peripheral ossifying fibroma maintaining the nature and clinical appearance of the growth.

The patient presented for a follow up examination 20 days postoperatively. The surgical site appeared to be healing well. There was no evidence of recurrence of the lesion and the child was asymptomatic (Figure 3).

POF, as discovered in this case, is a focal, reactive, non-neoplastic tumor-like growth of soft tissue often arising from the interdental papilla [2, 3, 9]. It is a fairly common lesion, comprising nearly 3% of oral lesions biopsied in one study, approximately 1%–2% in other studies [8-11]. In 1993, Das and Das obtained similar results, with 1.6% POFs among 2,370 intraoral biopsies [12]. POF may present as a pedunculated nodule, or it may have a broad attachment base [2, 5, 14]. These lesions can be red to pink with areas of ulceration, and their surface may be smooth or irregular. Although they are generally < 2 cm in diameter, size can vary [5, 13]. Reports range from 0.2–3.0 cm to 4 mm–8 cm and some lesions may be as large as 9 cm in diameter [1, 13-15]. Cases of tooth migration and bone destruction have been reported, but these are not common. However in the present case tooth migration was there.

The female to male ratio reported in the literature varies from 1.22:1 to 1.7:1 [1, 8, 13, 16]. By most reports, the majority of the lesions occur in the second decade, with a declining incidence in later years [2, 13, 16]. There are 2 reported cases of POF present at birth, presenting clinically as congenital epul[i. In a 2001 study, Cuisia and Brannon found that only 134 out of 657 diagnosed POFs (20%) were in the pediatric population (0–19 years), with 8% in the first decade [14]. In a retrospective study of 431 cases in the Chinese population by Zhang and others, the mean age of incidence of POF
was found to be 44 years, which is contradictory to previously published literature [19]. POF appears to be more common among white people than black and slightly less common among those of Hispanic origin [14]. The case presented by us was female patient and Asian origin.

The lesion may be present for a number of months to years before excision, depending on the degree of ulceration, discomfort and interference with function [1, 8]. Approximately 60% of POFs occur in the maxilla, and they occur more often in the anterior than the posterior area with 55%–60% presenting in the incisor-cusp region [2, 3, 8, 9, 13, 14, 16, 19]. The finding is in accordance with our finding.

POFs are believed to arise from gingival fibers of the periodontal ligament as hyperplastic growth of tissue that is unique to the gingival mucosa [2, 3, 20]. This hypothesis is based on the fact that POFs arise exclusively on the gingiva, the subsequent proximity of the gingiva to the periodontal ligament and the inverse correlation between age distribution of patients presenting with POF and the number of missing teeth with associated periodontal ligament [8, 14, 19, 20]. In a study of 134 pediatric patients with POF, in only two cases was POF intimately associated with primary teeth, bringing into question the histogenesis of this type of lesion [2, 3, 6, 8, 9, 11]. In the present case the lesion was associated with the permanent teeth.

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 [8]. In an isolated case the lesion was associated with the permanent teeth with associated periodontal ligament [8, 14, 19, 20]. In a study of 134 pediatric patients with POF, in only two cases was POF intimately associated with primary teeth, bringing into question the reactivity of the lesion. The exfoliation of primary teeth and eruption of their successors should result in an increased incidence of periodontal ligament-associated reactive lesions [3, 6, 8, 9, 11]. In the present case the lesion was associated with the permanent teeth.

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 [8]. In an isolated case of multicentric POF, Kumar and others noted the presence of a lesion at an edentulous site in a 49-year-old woman, which once again raises questions regarding the pathogenesis of this type of lesion [12]. In the present case it may be due to hormonal influence. Treatment consists of conservative surgical excision and scaling of adjacent teeth [2, 8, 9]. The rate of recurrence has been reported at 8.9–20% [2–4, 13, 14]. Therefore, regular follow-up is required.

**Conclusion**

In children, peripheral ossifying fibroma can exhibit an exuberant growth rate and reach significant size in a relatively short period of time. Early recognition and definitive surgical intervention result in less risk of tooth and bone loss.

**Competing interests:** The authors declare that no competing interests exist.

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