Peripheral ossifying fibroma - A case report

Pendyala G,* Joshi S.*, Marawar P.P.**, Pawar B.***, Mani A****

Abstract

Peripheral ossifying fibroma is a reactive gingival overgrowth occurring frequently in the anterior maxilla. A case of peripheral ossifying fibroma in the maxillary gingiva in a 30 year old female is described. The lesion was asymptomatic, firm, pinkish red and pedunculated. Histologically it showed cellular fibrous connective tissue stroma with calcified osseous and cementum like calcifications. Lesions histologically similar to peripheral ossifying fibroma have been given various names in existing literature. The controversial varied nomenclature and possible etiopathogenesis of peripheral ossifying fibroma is discussed.

Key words: *Peripheral ossifying fibroma, gingiva, ossifying fibroma*

Introduction

Solitary gingival enlargements are relatively common findings and usually the result of reactive response to local irritation[1]. One such reactive lesion is peripheral ossifying fibroma (POF). Peripheral ossifying fibroma is considered to be a non-neoplastic enlargement of the gingiva. There are two types of ossifying fibromas, the central type and the peripheral type. The central type arises from the endosteum or the periodontal ligament adjacent to the root apex and causes expansion of medullary cavity. The peripheral type occurs solely on the soft tissues covering the tooth bearing areas of the jaws i.e. it occurs solely on the gingiva[2]. It is widely considered that the lesion is often associated with trauma or local irritants such as subgingival plaque and calculus, dental appliances, and poor quality dental restorations [3,4].

Clinically peripheral ossifying fibroma appears as a nodular mass, either pedunculated or sessile, usually ulcerated and erythematous or it exhibits a color similar to the surrounding gingival[5]. POF may occur at any age, but exhibits a peak incidence between the 2nd and 3rd decades of life. It has a female preponderance. There is a slight predilection for the maxillary arch in the incisor and cuspid region[2]. Most lesions are less than 2cm in size, although larger ones occasionally occur[6]. The recurrence rate is considered rather high for this benign reactive proliferation. In a series of 50 cases reported by Eversole and Rovin the recurrence rate was 20%[4].

On roentgenogram, in a vast majority of cases, there is no apparent underlying bone involvement visible. However, on rare occasions, there does appear to be superficial erosion of bone[6].

Therapy for POF includes surgical excision which includes the periosteum and periodontal ligament, as well as aggressive agent removal. The purpose of this article is to present a case of POF, briefly review the current literature on this condition and emphasize the importance of discussion of a reasonable differential diagnosis with the patient.

Case Report

A healthy 30 year old female patient, reported with chief complaint of "lump" infront of her front teeth, which was present for approximately 6 months. The swelling started as a small growth and grew to the present size. The lump was interfering with her bite and it felt uncomfortable. Occasionally, bleeding occurred when she brushed her teeth.

*Senior lecturer, Department of Periodontics
*Senior lecturer, Department of Pedodontics
**Professor and Head, Department of Periodontics
***Professor , Department of Periodontics
****Reader , Department of Periodontics

Corresponding Author :
Dr . Gowri. Pendyala
Senior Lecturer, Department of Periodontics
Rural Dental college, Loni, Tal Rahata Dist Ahmednagar,
Maharashtra. - 413736. Email- gowri.pendyala@gmail.com

Clinical examination

Clinical examination revealed an exophytic nodular lesion with an irregular surface on the buccal aspect of 22 and 23. Palatally, there was erythematous papilla. The lesion measured approximately 12 mm laterally, 8 mm in the anterior- posterior direction and was 6 mm thick. The lesion appeared reddish pink with areas of white. It was slightly pedunculated with what appeared to be broad- based attachment. The lesion was non fluctuant and had a rubbery consistency. No evidence of erythema, ulceration or spontaneous bleeding was seen. It was tender to firm on pressure, but not to light palpation. No radiological signs of involvement of alveolar ridge was observed.

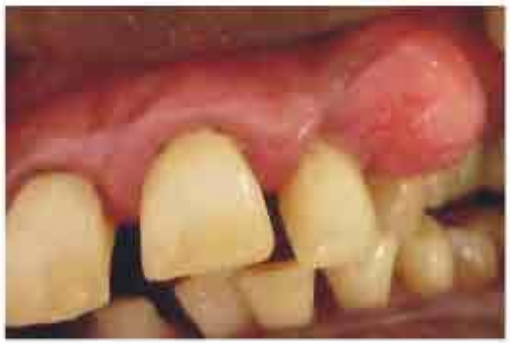

Fig. 1 : Pre-Operative Photograph

Diagnosis

The differential diagnosis consisted of irritation fibroma, pyogenic granuloma and peripheral giant cell granuloma, aneurysmal bone cyst, ginigival cyst of the adult, peripheral ododontogenic fibroma, peripheral giant cell granuloma, peripheral ossifying fibroma.

Treatment

Under local anesthesia, the lesion was excised completely using both a scalpel and an electrocautery device (Fig. 2 & 3). Adjacent teeth were scaled and

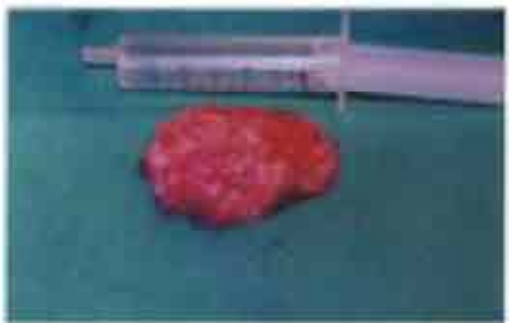

Fig. 2 : Excised Lesion

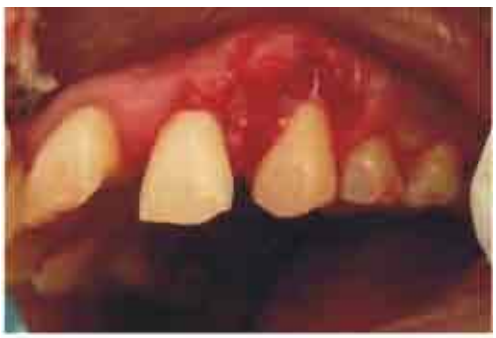

Fig. 3 : Intraoperative photograph following exision of lesion

rootplaned to remove any local irritants. The excised tissue was submitted for histopathological diagnosis.

Microscopic examination revealed highly cellular collagenous fibers and proliferating plump fibroblasts, which focal areas of trabecular bone lined by osteoblasts.

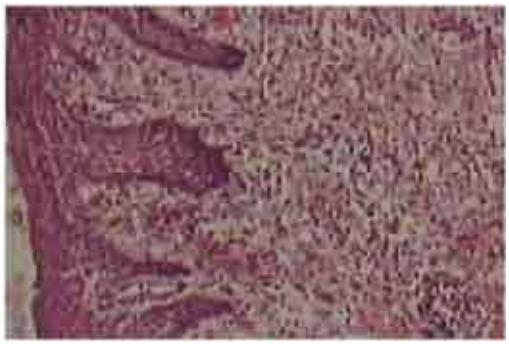

Fig. 4 : Histopathological picture of lesion

The covering stratified squamous epithelium was parakeratinized with focal areas of acanthosis. The histopathological diagnosis was peripheral ossifying fibroma.

The patient presented for a follow-up examination, 15 days postoperatively. The surgical site appeared to be healing well. A one year post surgical follow up showed no evidence of recurrence. (Fig. 5)

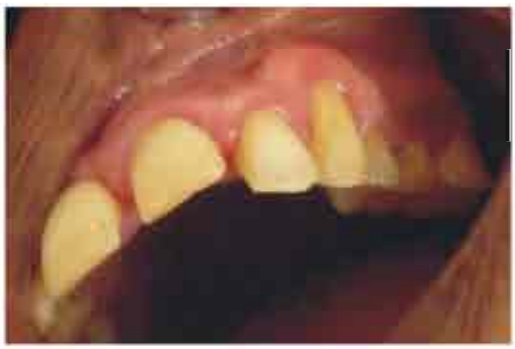

Fig . 5 : Post-operative photograph (one year after surgical removal of lesion)

Discussion

Gingiva is often the site of localized growths that are considered to be reactive rather than neoplastic in nature[7]. Intraoral ossifying fibromas have been described in literature since the late 1940s. Many names have been given to similar lesions such as epulis, peripheral fibroma with calcification, peripheral ossifying fibroma, calcifying fibroblastic granuloma, peripheral cementifying fibroma, peripheral fibroma with cementogenesis and peripheral cemento-ossifying fibroma[3,4]. The sheer number of names used for fibroblastic gingival lesions indicates that there is much controversy surrounding the classification of these lesions[8].

Ossifying fibroma elobarates bone, cementum and spheroidal calcifications, which has given rise to various terms for these benign fibro-osseous neoplasms. When bone predominates, "OSSIFYING" is the appellation, while the term 'cementifying' has been assigned when curvilinear trabeculae or spheroidal calcifications are encountered. When bone and cementum-like tissues are observed, the lesions have been referred to as cement ossifying fibroma. Cementifying fibromas may be clinically and radiographically impossible to separate from ossifying fibromas[4,9].

The term 'cement ossifying' is outdated and scientifically inaccurate, because clinical presentation and histopathology of cement ossifying fibroma are the same in areas where there is no cementum, such as skull, femur, and tibia[10]. They are all ossifying fibromas. Those that happen to occur in the jaws should not be termed cement ossifying fibromas merely because of the presence of teeth. Moreover there is no histologic or biochemical differences between cementum and bone[10].

Bhaskar et al. termed these lesions as peripheral fibroma with calcification[3]. Arnott later described two lesions microscopically and gave the diagnosis of ossifying fibroma. The term peripheral ossifying fibroma was coined by Eversol and Robin[4]. Though the etiopathogenesis of peripheral ossifying fibroma is uncertain, an origin from cells of periodontal ligament has been suggested[3]. The reasons for considering periodontal ligament origin for POF include exclusive occurrence of POF in the gingiva (interdental papilla), the proximity of gingiva to the periodontal ligament and the presence of oxytalan fibres within the mineralized matrix of some lesions[3]. Excessive proliferation of mature fibrous connective tissue is a response to gingival injury, gingival irritation, subgingival calculus or a foreign body in the gingival sulcus. Chronic irritation of the periosteal and periodontal membrane causes metaplasia of the connective tissue with resultant initiation of bone formation and dystrophic calcification. It has been suggested that the lesion may be caused by fibrosis of granulation tissue[11]. High female predilection, rare occurrence in the first decade, and decline in incidence after age 30 suggest that hormonal influence may be a lesional growth factor[6,12]. In this case, the patient had subgingival and supragingival calculus which probably contributed etiopathogenesis of this lesion.

Peripheral ossifying fibroma tends to occur in the 1st and 2nd decades of life, with peak prevalence between the ages of 10 and 19. Almost two thirds of all cases occur in females, with a predilection for the anterior maxilla[13]. In the present case, the clinical findings correlate well with these general characteristics. The surface is frequently but not always ulcerated. Ulceration was not noted in the present case. According to Mulcahy and Dahl and Cundiff there is a high prevalence of ulceration i.e., 62% and 65%. Among the patients with ulcerated lesions the male : female ratio was equal in the 2nd decade and in all other decades there was a female predominance[14,15]. The size of the POF ranges from 0.4-4.0cm. At its greatest dimension, the average lesion measures approximately 1.0. cm. In the present case, the dimensions of the lesions were well within the above mentioned ranges. POF can become large, causing extensive destruction of adjacent bone and significant functional or esthetic alterations.

Radiographic features of POF vary. Radiopaque foci of calcifications have been reported to be scattered in the central area of some lesions. Underlying bone involvement is usually not visible on a radiograph. In rare instances, superficial erosion of bone is noted.[16] In the present case, no radiographic findings were found which indicated that this could be an early stage of the lesion.

Treatment of these lesions is complete surgical excision as was done in the present case. Proper excision and aggressive curettage of the adjacent tissues is required for prevention of recurrence. The recurrence rate of POF has been considered high for reactive lesions and it probably occurs due to incomplete initial removal, repeated injury, or persistence of the local irritants[5,6].

According to a series of 134 POF's analyzed by Cuisia and Brannon, the average time interval for the first recurrence is 12 months[17]. Early surgical treatment of the POF, including removal of identifiable etiological factors is required to obtain satisfactory gingival repair and minimize possibility of recurrence.

Conclusion

POF is a slowly progressing lesion, the growth of which is generally limited. Many cases will progress for long periods of time before patients seek treatment. A slowly growing pink soft tissue nodule in the anterior maxilla of an adolescent should raise suspicion of a POF. Discussion of the differential diagnosis should be done tactfully to prevent unnecessary distress to the patient and family. Treatment consists of surgical excision, which should include the periosteum, and scaling of adjacent teeth. Close postoperative follow-up is required because of the recurrence potential of incompletely removed lesions.

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