

Peripheral Ossifying Fibroma – A Clinical Report

Fibroma Osificante Periférico - Un Reporte Clínico

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ABSTRACT: Localized growths are commonly seen on the gingiva. Many of these enlargements are considered to be reactive rather than neoplastic in nature. Clinically differentiating one from the other as a specific entity is often not possible. Histopathologic examination is needed in order to positively identify the lesion. The peripheral ossifying fibroma is one such lesion. We report in this study, the clinical report of a 20-yr-old male patient with a peripheral ossifying fibroma in the maxilla exhibiting significant size with the disease duration of 1 year. The signs of recurrence in spite of thorough excision and debridement exposed the need for further study of the causes of recurrence and possible modes to avoid the situation. Clinical, radiographical and histological characteristics are discussed and recommendations regarding treatment and follow-up are provided.

KEY WORDS: peripheral ossifying fibroma, gingival enlargement, peripheral cement ossifying fibroma, gingival overgrowth, fibrous hyperplasia.

INTRODUCTION

Localized gingival enlargements are fairly common and typically represent reactive proliferative lesions, rather than true neoplasms (Bhaskar & Levin, 1973; Stablein & Silverglade, 1985; van der Waal, 1991). Reactive or inflammatory lesions represent more than 90% of histopathologically analyzed gingival biopsies (Bhaskar & Levin; Stablein & Silverglade) and most commonly include diagnoses of pyogenic granuloma, fibrous hyperplasia, peripheral ossifying fibroma and peripheral giant cell granuloma.

Peripheral ossifying fibroma (POF) has been cited in the literature under various names such as cemento ossifying fibroma, peripheral fibroma with osteogenesis, peripheral odontogenic fibroma, calcifying fibroblastic granuloma etc (Bhaskar & Levin; Walters *et al.*, 2001).

POF is defined as a well demarcated and occasionally encapsulated lesion consisting of fibrous tissue containing variable amounts of mineralized material resembling bone (ossifying fibroma) (Waldrom, 1993). It is considered to be the soft tissue counterpart to central ossifying fibroma. A case of POF in the

maxillary gingiva of a 20 year old male patient is described in this report.

CASE REPORT

A 20-yr-old apparently healthy male patient reported to the Department of Periodontics with the chief complaint of soft tissue overgrowth in the palate. The patient first noticed it one year ago but did not seek treatment until it reached the current proportions. Extraoral examination showed bilateral facial symmetry and overlying skin showed no signs of inflammation. The regional lymph nodes were non palpable. A thorough intraoral examination revealed a firm, rubbery, reddish, sessile mass on the palatal aspect of the maxillary left permanent central incisor – premolar region (teeth #'s 2.1-2.6). Severely carious and malpositioned first and second premolars (teeth #'s 2.4 and 2.5) were also associated with the lesion. The lateral incisor and canine appeared to have been displaced buccally. The lesion was large; approximately 3 cm mesiodistally and 2 cm

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buccopalatally. The mucosa overlying the lesion was intact and pinkish red in color. The lesion was painless unless traumatized by enthusiastic tooth brushing or chewing certain hard foodstuffs.

Prescribed radiographs included a periapical radiograph (IOPA) and an occlusal radiograph. The occlusal radiograph revealed a soft tissue shadow extending from tooth # 2.2 to tooth #2.4 on the buccal aspect. Tooth #2.3 appears displaced buccally on the occlusal radiograph along with diffuse radioopacities which overlap on the normal trabecular pattern of bone. The lesion demonstrated diffuse radioopacities in a flocculant pattern between teeth #'s 2.2 and 2.3 extending interdentally as well as crestal bone resorption between teeth #'s 2.1 and 2.2. The lamina dura of teeth #'s 2.2 and 2.3 appear to have been partially lost.

A provisional diagnosis of peripheral ossifying fibroma was reached. After ensuring that the hemogram of the patient was within normal limits, excisional biopsy of the lesion was performed under local anesthesia. Tooth # 2.4 and tooth # 2.5 were extracted.



Fig. 1. Pre operative condition of the gingiva and buccal view of the lesion.



Fig. 2. Growth extending from midline to tooth number 14.

Histological examination of the specimen revealed peripheral covering of parakeratinized stratified squamous epithelium with moderate to marked proliferation. The basement membrane was intact uniformly. The connective tissue showed variable degree of maturation: more cellular in the juxta-epithelial region while being more mature in the deeper region where typical whorled pattern was observed. In addition there was evidence of calcifications in the hypercellular fibroblastic stroma in the form of numerous bony trabeculae scattered in the connective tissue confirming the diagnosis of POF.



Fig. 3. Occlusal radiograph.



Fig. 4. Radiograph showing soft tissue shadow and radiopacities between tooth 10 and 11.

The initial follow up of the case showed uneventful healing. However approximately 3 months after the procedure there appeared to be signs suggestive of recurrence in the same region. A slight swelling, when compared to the contralateral side, was noted. Also, the patient's

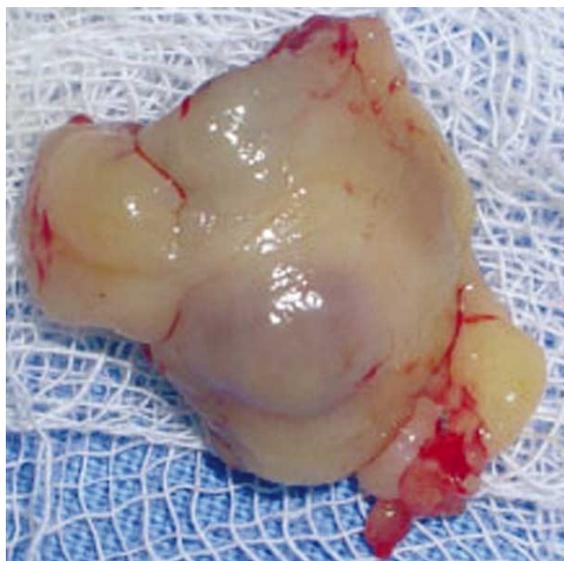


Fig. 5. Excised Growth.

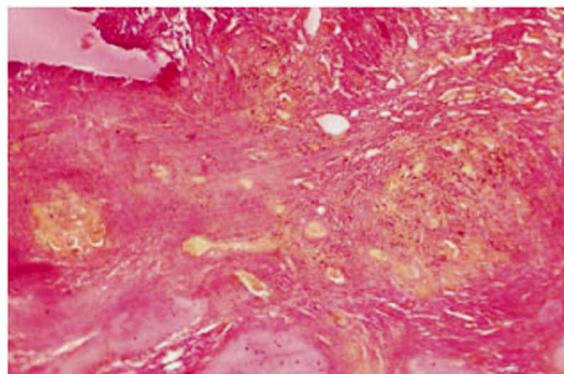


Fig. 6. Histological picture of the lesion (H.E. 10x).



Fig. 7. Post op after three months showing signs of recurrence.

oral hygiene was found to be lacking resulting in continued gingivitis in the rest of the mouth.

A second, more thorough surgical procedure was planned for the same patient, however the patient did not return for subsequent follow up visits.

DISCUSSION

A POF may occur at any age but exhibits a peak incidence between the second and third decades. Almost 60% of the lesions occur in the maxilla and mostly occur anterior to the molars in the second decade of life, which is consistent with the presented case. The lesion affects females more often than males (5:1 respectively) (Buchner & Hansen, 1987). Clinically, POF is sessile or pedunculated, usually ulcerated and erythematous or exhibits a color similar to that of surrounding gingiva. It does not blanch on palpation (Walters *et al.*; Kenney *et al.*, 1989).

The case presented with significant amounts of plaque, calculus and a significantly carious tooth which encouraged further food lodgement – all of which are considered to be irritants triggering the lesion (Gardner, 1982).

The lesions of POF are usually less than 1.5-2 cm in diameter, but have been known to grow to larger sizes (Poon *et al.*, 1995). The growth in the above case was significantly larger in size than the average lesion. POF can cause resorption of the alveolar crest and separation of adjacent teeth with pathologic migration (Poon *et al.*), both of which were seen in the present case.

Histologically, a typical ulcerated POF can exhibit three zones:

Zone I: the superficial ulcerated zone covered with fibrinous exudates and enmeshed with polymorpho-nuclear neutrophils and debris.

Zone II: The zone below 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 high cellularity; osteogenesis consisting of osteoid and bone formation is a prominent feature, which can even reach the ulcerated surface in some cases.

The non-ulcerated POF lesions are similar to an

ulcerated type except for the presence of surface epithelium (Bhaskar & Jacoway, 1966). The presented case demonstrated the features of a non-ulcerated POF.

Treatment requires proper surgical intervention that ensures thorough excision of the lesion including the involved periosteum and the periodontal ligament. Thorough root scaling and planing should be accomplished.

The recurrence rate of the POF is said to be 7-20% (Walters *et al.*; Buchner & Hansen; Kenney *et al.*; Gardner). Recurrence probably occurs due to incomplete removal of lesion, repeated injury or persistence of local irritants (Kenney *et al.*). The apparent progress towards recurrence,

seen in the case presented, maybe the result of one or both of two possibilities. One being the continued plaque accumulation during follow up which means one of the possible etiological factors has not been eliminated leading to a recurrence. The other possibility is an inadequate removal of the lesion at the time of the surgical excision which has led to the lesion re-growing at the same site.

In conclusion, it is difficult clinically to differentiate between the various gingival lesions. For positive identification, the lesion must be examined thoroughly both radiographically and histologically. Also regardless of the surgical technique employed, its complete removal as well as complete elimination of the etiological factors must be achieved to prevent recurrence.

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RESUMEN: Aumentos de volumen localizados se observan con frecuencia en la encía. Muchos de estos crecimientos se consideran de tipo reaccional más que de naturaleza neoplásica. Clínicamente diferenciar uno del otro como una entidad específica no siempre es posible. El examen histopatológico es necesario con el fin de identificar positivamente a la lesión. El fibroma osificante periférico es una de estas lesiones. Se presenta en este estudio, el informe clínico de un paciente de sexo masculino de 20 años de edad con un fibroma osificante periférico en el maxilar de un tamaño significativo con 1 año de duración de la lesión. Los signos de recurrencia a pesar de la escisión completa y desbridamiento expusieron la necesidad de estudiar más a fondo las causas de la recurrencia y los posibles modos de evitar la situación. Las características clínicas, radiográficas e histológicas son discutidas junto a recomendaciones sobre el tratamiento y seguimiento.

PALABRAS CLAVE: fibroma osificante periférico, hipertrofia gingival, fibroma osificante periférico, hiperplasia gingival, hiperplasia fibrosa.

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