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PERIPHERAL OSSIFYING FIBROMA: A CASE REPORT

PERİFERAL OSSİFYİNG FİBROM: VAKA RAPORU

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ABSTRACT

This manuscript aims to describe the clinical, radiological and histopathological properties of a case of peripheral ossifying fibroma (POF) located in a 41 years old woman's maxillary vestibular gingiva. Because the clinical and radiological features of POF are non-specific, for an accurate diagnosis, histopathological examination of the surgical specimen is mandatory.

Keywords: Peripheral ossifying fibroma, fibroma, giant cell granuloma.

ÖZET

Bu makalede 41 yaşındaki bir bayan hastanın üst çene vestibüler dişetinde görülen periferal ossifying fibrom (POF) vakasının klinik, radyolojik ve histopatolojik özelliklerinin sunulması amaçlanmıştır. POF'un klinik ve radyolojik özellikleri tanı konması açısından yetersiz olduğundan kesin tanı için cerrahi olarak çıkarılan parçanın histopatolojik olarak incelenmesi zorunludur.

Anahtar kelimeler: Periferal ossifying fibrom, fibrom, dev hücreli granülom

INTRODUCTION

POF, as well as focal fibrous hyperplasia, pyogenic granuloma (PG) and peripheral giant cell granuloma (PGCG), are localized enlargements of the gingiva that are thought to be reactive, non-neoplastic, in nature.[1] POF is a relatively rare lesion, 3.1% of all oral tumors and 9.6% of gingival lesions, with variable expressions.[2] It is defined as well demarcated and occasionally encapsulated lesion consisting of fibrous tissue containing variable amounts of mineralized material resembling bone, cementum-like tissue, dystrophic calcifications or all of them.[3,4] Although the pathogenesis of this lesion remains uncertain, it is widely accepted that this lesion originates from the cells of the periodontal ligament and periosteum[5] and is often associated with the traumatic effects of local irritants, such as subgingival plaque and calculus, orthodontic appliances and poor-quality dental restorations.[5,6]

The purpose of this manuscript is to present a case of POF, and briefly review the current literature on this condition.

CASE REPORT

A 41 years old woman referred to Department of Periodontology, Faculty of Dentistry, with the chief complaint of a soft tissue mass in the right lateral-canine site of the maxilla. The lesion had been present for three months and had been slowly increasing in volume. Patient was systemically healthy and her dental and medical histories were non-contributory. Also, during the anamnesis, it was learned that her family dentist had discussed the possibility of the lesion being a carcinoma. This situation had raised the patient's anxiety level considerably.

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Clinical and radiographic examination

Clinical examination revealed asymptomatic, non-ulcerated, well-circumscribed, sessile, slightly erythematous, pinkish-red in color, firm swelling measuring 0.8 × 0.8 cm in diameter, located on the vestibular mucosa of the right maxillary lateral and canine teeth. The palatal gingiva was not involved. Plaque and calculus were abundant at the proximal surfaces of teeth (Figure 1,2). Panoramic and periapical radiographs were obtained. In radiographic examination, no signs of involvement of alveolar ridge were observed (Figure 3).

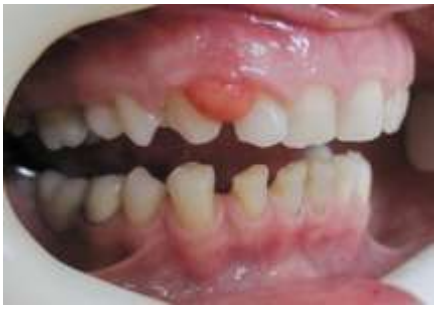

Figure 1. Facial view of the lesion.

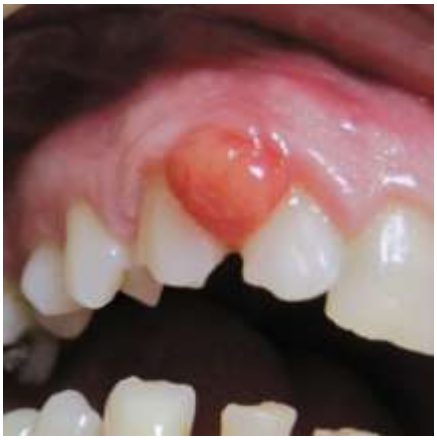

Figure 2. Facio-oclusal view of the lesion.

Preliminary diagnosis

Because the lesion located among the teeth surfaces and interdental gingiva and, in appearance, pushed the gingiva, preliminary diagnosis of POF was made. The differential diagnosis consisted of POF, PG, PGCG, peripheral odontogenic fibroma and irritation fibroma.

Figure 3: Intra-oral periapical radiograph showing non-involvement of the alvealar bone.

Treatment

Under the local anesthesia, the localized lesion was completely excised with para-marginal and intra-sulcular internal bevel incisions, and following adjacent teeth surfaces were scaled to remove aetiological factors and underlying bone were curetted. Removed tissue submitted for histopathological examination. Flaps were sutured with interdental interrupted non-resorbable 4-0 silk sutures.

Histopathological examination and definitive diagnosis

The histopathological examination revealed a dense, cellular, fibrous connective tissue stroma containing calcified osseous structures covered by parakeratinized stratified squamous epithelium (Figure 4,5). The histopathological properties of the surgical specimen supported a diagnosis of POF.

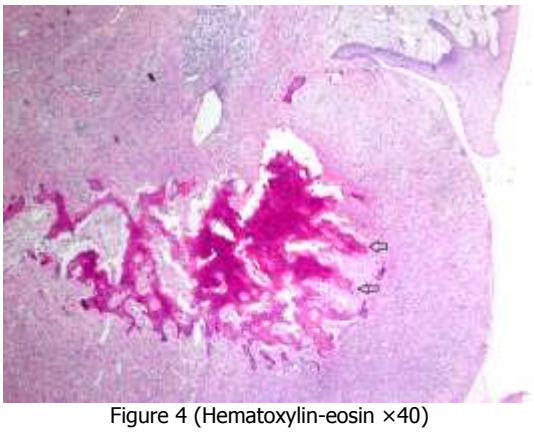

Figure 4 (Hematoxylin-eosin ×40)

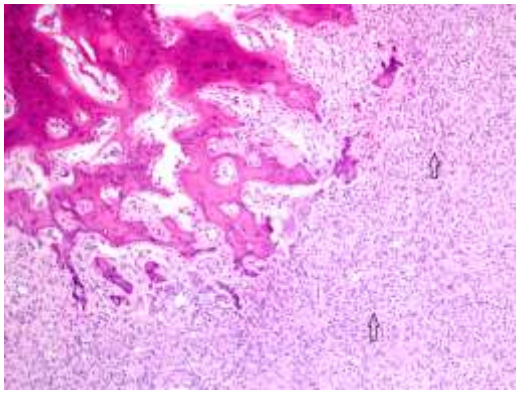

Figure 5 (Hematoxylin-eosin ×100)

Figure 4 and 5. Bony trabeculae within cellular fibrous connective tissue stroma covered by stratified squamous epithelium (Hematoxylin-eosin ×40 and ×100, respectively)

Follow-up

The patient presented for a recall appointment 3 weeks later then suture removal day. The surgical site appeared to be healing well (Figure 6). There was no evidence of recurrence of the lesion at postoperative 5th month. The patient is still regular follow-up which consists of 3 months intervals.

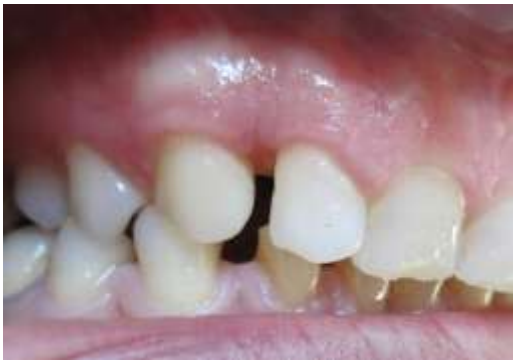

Figure 6. The satisfactory healing 55 days after surgical excision.

DISCUSSION

Ossifying fibroma was first described by Menzel in 1892, while intraoral ossifying fibromas have been described since the late 1940s. There are two types of ossifying fibromas: the central ossifying fibroma (COF) and POF. Central type originates from the periodontal ligament or endoosteum adjacent to the root apex and causes the expansion of the medullar cavity. The peripheral type occurs solely on the soft tissues covering to tooth-bearing areas of the jaws.[7] Central type is more common encountered than peripheral type.[8] Also, it was found that COF lesions had higher numbers of argyrophilic nucleolar organizer regions (AgNORs) and proliferating cell nuclear antigen-(PCNA-) positive cells than in POF lesions.[9] These findings suggest that COF has higher proliferative activity than POF.

The use of a variety of terminologies for POF, such as peripheral cementifying fibroma, ossifying fibroepithelial polyp, peripheral fibroma with osteogenesis, peripheral fibroma with cementogenesis, peripheral fibroma with calcification, calcifying or ossifying fibroma epulis, and calcifying fibroblastic granuloma[10], indicates a great amount of confusion regarding the clinical and histopatological appearances of the POF.

Clinically, POF is sessile or pedunculated, usually ulcerated and erythematous or exhibits a colour similar to that of surrounding gingiva.[11] In the majority of the cases, POF is situated in the gingival papilla.[12] Most lesions, including our case, are <2 cm in size, although lesions larger than 10 cm are occasionally observed. POF affects both gender, but a higher prevalence for females has been reported in the literature. This condition may give rise to thought the role of hormonal influences in the etiology of POF in addition to the local irritants. Approximately 60% of the lesions occur in the maxilla and more than 50% of all cases affect the region of the incisors and canines.[5] In vast majority of cases, there is no apparent underlying bone involvement visible on roentgenogram. However, on rare occasions, there appear to be superficial erosion of bone.[12,13-16] Also, it was displayed that POF may cause tooth migration.[5,16] In the present case, the small size of the lesion (0.8 × 0.8 cm) and limited radiographic findings were found which indicated that this can be an early stage lesion.

Histologically, POF shows a parakeratinized and hyperplastic epithelium and well-cellularized connective tissue containing mineralized components ranging from bone to cementum and, less frequently, dystrophic calcifications.[1,4] All the classic clinical and histological properties of POF were present in our case. Despite the majority of lesions occur in the second decade, this female patient was 41 years old with the lesion occurring between the vestibular side of the maxillary lateral and canine teeth.

Because the clinical features of POF may be similar to those of such kind of benign (irritation fibroma, PG, PGCG, peripheral odontogenic fibroma) or malign (squamous cell carcinoma) gingival lesions, histopathological examination of the surgical specimen is mandatory for an accurate diagnosis. Histologically, POF can be differentiated from the PDHG by the presence of irregular basophilic calcified areas and by the absence of giant cells. Also, as a clinical difference, while POF generally exhibits a colour similar to that of surrounding gingiva, PGCG is associated with purple or blue discoloration. POF can be separated from the peripheral odontogenic fibroma by the absence of odontogenic epitelium and dysplastic dentine.[3,4]

The preferred treatment consists of conservative surgical excision of the lesion[13], curettage of its osseous floor and scaling of adjacent teeth.[3] The rate of recurrence has been reported from 8.9% to 20%.[1,12] Relatively higher recurrence rate may be a result of incomplete excision of the lesion or inadequate scaling of the local irritants.

CONCLUSION

Since the clinical properties of POF are non-specific, the diagnosis of the POF with only clinical examination is very difficult and may be incorrect. In addition to the clinical examination, radiological examination of the lesion area and histopathological examination of the surgical specimen are mandatory for an accurate diagnosis. Also, close postoperative follow- up is required because of the high recurrence rate.

Conflict of Interest

The authors declare that they have no conflict of interests.

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