Pathological, Radiological, Microbiological and Biochemical Evaluations and Rehabilitation: Peripheral Ossifying Fibroma in a Young Woman: Case Report

Genç Kadın Hastada Periferal Ossifiye Fibroma Olgusu: Patolojik, Radyolojik, Mikrobiyolojik, Biyokimyasal Değerlendirmeleri ve Tedavisi

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ABSTRACT The peripheral ossifying fibroma (POF) is a reactive gingival overgrowth occuring frequently in the anterior maxilla in between second and third decades. The clinical appears of it is usually a small, well-demarcated , focal mass with a sessile or pedunculated base on the free margin of the gingiva. A 43-year-old Turkish woman referred with the complaint of a soft tissue mass of the buccal maxillar gingiva. The lesion had been present for approximately one year. Intraoral examination showed a well circumscribed, lobulated, sessile, erythematous, firms swelling measuring 3 cm in size, located on the left buccal maxillary gingiva between lateral incisor and second premolar. Panoramic radiography revealed radioopaque foci within the tumor and radicular radiolucencies extended by occupying the roots apex. The patient was investigated from the view of microbiologists and biochemists. In the microbiological evaluation of the plaque that was obtained from the lesion of subgingival crevicular fluid, human cytomegalovirus was determined. The lesion was completely excised and the histopathologic examination of the gingival lesion was diagnosed of peripheral ossifying fibroma.

Key Words: Fibroma, ossifying; cytomegalovirus

ÖZET Periferal ossifiye fibrom sıklıkla hayatın 2. ve 3. dekatlar arasında, maksillanın ön kısmında görülen aşırı şekilde reaktif dişeti büyümesidir. Klinik görüntüsü serbest diş eti kenarında iyi sınırlı saplı veya sapsız küçük lokal bir kitledir. Kırk üç yaşındaki bir kadın hasta üst çene yanak tarafındaki dişetinde yer alan yumuşak doku kitlesi şikayetiyle kliniğimize başvurmuştur. Lezyonun yaklaşık bir senedir mevcut olduğu öğrenilmiştir. Ağız içi muayenede üst çene yanak tarafındaki diş etinde, yan kesici ve ikinci küçük azı arasında, 3 cm büyüklüğünde, sınırlı, loblu, saplı, eritematöz sert bir şişlik görülmüştür. Panoramik radyografta tümör içinde radyopak odak ve kök uçlarını kaplayan radiküler radyolüsensi gözlenmiştir. Hasta mikrobiyolojik ve biyokimyasal açıdan değerlendirilmiştir. Lezyona komşu dişin subgingival cep bölgesindeki plağın mikrobiyolojik incelenmesinde insan sitomegalo virüsü tespit edilmiştir. Tamamı eksize edilerek çıkarılan lezyonun histopatolojik incelemesi sonucu ise periferal ossifiye fibrom teşhisi konulmuştur.

Anahtar Kelimeler: Ossifiye fibrom; sitomegalovirüs

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The peripheral ossifying fibroma (POF), also known as **ossifying fibrous epulis**, and **the ossifying fibroma (OF)** are lesions that exhibit similar histomorphologic features. The literature suggests that both originate from periodontal ligament cells; however, they are classified in distinct ways. The POF is included in the reactive lesions of the gingiva, which have often been called by the generic term "epulis". The OF is a benign neoplastic lesion included in the group of benign fibro-osseous lesions of the jaws.[1-3]

Clinically, POFs are sessile or pedinculated, usually ulcerated and erythematous or exhibit a color similar to the surrounding gingiva. Most lesions are less than 2 cm size, although larger ones occasionaly occur. Furthermore, the lesions have female predilection and recurrence rate is considered high for a benign reactive proliferation.[4-7]

This case report presents radiological, pathological, microbiological and biochemistry evaluation and rehabilitation of patient with peripheral ossifying fibroma.

CASE REPORT

A 43-year-old Turkish woman referred with the complaint of a soft tissue mass of the buccal maxiller gingiva. The lesion had been present for approximately one year. Intraoral examination showed a well circumscribed, lobulated, sessile, erythematous, firms swelling measuring 3 cm in size, located on the left buccal maxillary gingiva between lateral incisor and second premolar (Figure 1, 2). Pain and bleeding could be induced by palpation of the lesions.

Panoramic radiography revealed radioopaque foci within the tumor and radicular radiolucencies extended by occupying the roots apex (Figure 3).

The patient was investigated from the view of microbiologists and biochemists. In the microbiological evaluation of the plaque that was obtained from the lesion of gingival crevicular fluid and healty area. The samples were examined by polymerase chain reaction (PCR) for herpes simplex virus (HSV) and cytomegalovirus (CMV). While it was detected human cytomegalovirus (HCMV) by the PCR analysis in the lession area, healthy region wasn't determined viruses. Routine blood chemistry and complete blood count levels taken yearly were always within normal limits. Laboratory tests performed throughout the course of her condition, which included analysis of most major autoantibodies, were unremarkable. Comprehensive metabolic work-up along with lipid and thyroid panels were within normal limits. Tests for hepatitis A, B and C were negative and hormonal (LF, FSH) tests were within normal limits.

Excisional biopsy was performed and the operative findings revealed that the lesion was friable and was removed in several pieces. The differential diagnosis included traumatic fibroma and pyogenic granuloma.

The lesion was completely excised and 2.3, 2.4, 2.5 number of the teeth were extracted. The histopathologic examination of the gingival lesion was diagnosed of peripheral ossifying fibroma Microscopically, the tumor composed of lamellar bone with prominent osteoblastic rimming in dense fibrous stroma (Figure 4 a, b).

The patient was subjected to clinical and radiological follow-up after excision of the lesion, to discard possible relapses (Figure 5). The patient's masticatory functions, fonation and aesthetics were restored with partial dentures (Figure 6). There was no recurrence of the lesion at a 1-year follow-up.

DISCUSSION

The POF occurs almost exclusively on the free margin of the gingiva and usually involves the interdental papilla. Dental calculus, plaque, dental appliances, ill-fitting crowns, and rough restorations are considered to be the irritants causing its growth. It may occur at any age, but exhibits a peak incidence between the second and third decades. Females are affected more than males; the ratio ranged from 3:2 to 2:1.

Sixty percent of the lesions occur in the maxilla, with more than 50% occuring in the incisor-canine region. Kfir et al[5] reported that the size of the POF is usually smaller than 1.5 cm in the diameter. Poon et al[8] reported that lesion can reach a much larger size and cause separation of the adjacent teeth, resorption of the alveolar crest, severe destruction of adjacent relevant bony structures, and a cosmetic deformity. The present case showed that this lesion was 3 cm in size, located on the left buccal maxillary gingiva between lateral incisor and second premolar teeth.

Irritating factors, microorganisms, masticatory forces, minor trauma, trapped food and debris, dental plaque, calculus influence the development of these lesions. For this reason POF is considered not

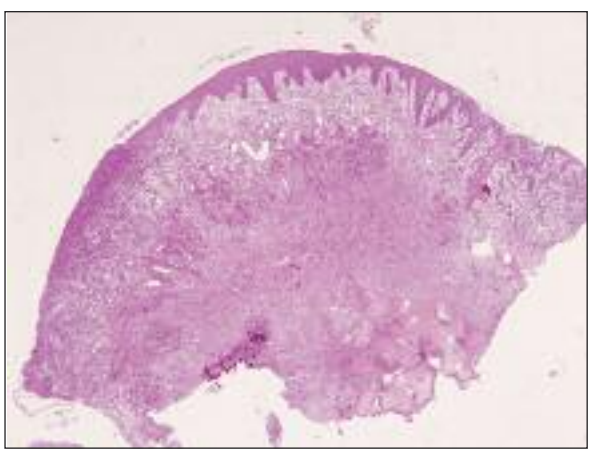
FIGURE 1, 2: Clinical appearance of the POF involving vestibular (facial) gingiva of the left buccal maxillary between lateral incisor and second premolar teeth.

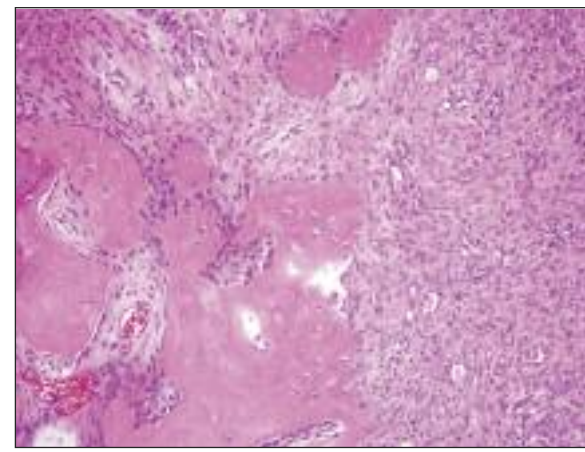
to be neoplastic, but rather to be a hyperplastic reaction due to inflammation.[9-11]

Radiographic features of the peripheral ossifying fibroma vary. Radiopaque foci of calcifications have been reported to be scattered in the central area of the lesion, but not all lesions demonstrate radiographic calcifications. Underlying bone involvement is usually not visible on a radiograph. In rare instances, superficial erosion of bone is noted.[12,13] In the present case, radioopaque foci within the tumor and radicular radiolucencies extended by occupying the roots apex.

Buccal lesions caused by CMV are rare and diverse manifestations of HCMV infection e.g. gingival hyperplasia, gingivitis, periodontitis, osteomyelitis of the jaw, hyperplasia of the oral mucosa and concurrent infection in Kaposi's sarcoma and reccurrent apthous stomatitis have also been reported.[14,15] HCMV is the ability of virus to establish a lifelong infection within the host following the initial infec-

FIGURE 3: Panoramic radiography showing radioopaque foci within the tumor and radicular radiolucencies extended by occupying the roots apex.





a **b**

FIGURE 4a, b: The tumor composed of lamellar bone with prominent osteoblastic rimming in dense fibrous stroma (H&E) **a)** Increase of 50x. **b)** Increase of 200x.

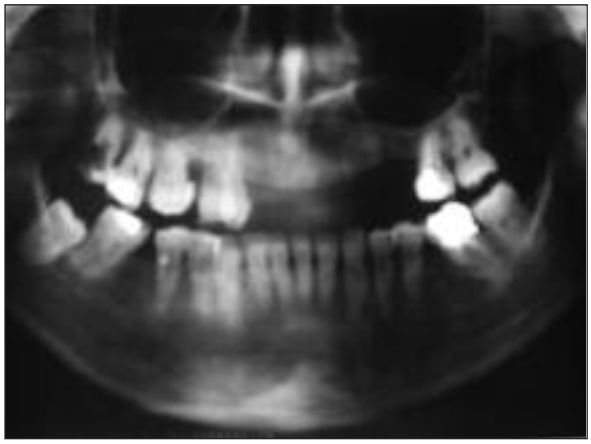


FIGURE 5: The radiographic view of the patient after one year treatment.

FIGURE 6: The clinical view of the patient with new prothesis (denture) after treatment.

tion. Reactivation may occur spontaneously or as a result of concurrent infection, fever, drugs, tissue trauma, emotinal stress, or other factors impairing the host immune defense.[16] HCMV interferes with CMV infection causes the activation of cytotoxic T lympocytes and natural killer cells, which represent a significant part of the implammatory cell infiltrate in periapical granuloma.[17] CMV also affect cytokine networks. Especially it induces the production of proinflammatory cytokines interleukin 1β (IL-1β), IL-6, IL-12 on tumor necrosis factor-α.[18] It is of clinical significance that cytokines may exert detrimental effects when a challenge becomes over whelming, or with chronic pathophysiologic stimulus. In the present case, CMV was found in the subgingival area of POF lesion. While it was not determined in the healty area, this finding may be interesting in the etiology of POF.

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