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Central Odontogenic Fibroma in the Mandible: Clinical Features, Diagnosis, and Surgical Approach

Mandibulada Santral Odontojenik Fibroma: Klinik Özellikler, Tanı ve Cerrahi Yaklaşım

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ABSTRACT
This case report describes the characteristics, diagnosis, and treatment approaches of central odontogenic fibroma, a rare tumor. A systemically healthy 29-year-old female patient was admitted to our clinic for routine checkups. Intraoral examination revealed a depression in the lingual gingiva of the right mandibular premolar region. Radiographic examination revealed a mixed, multilocular lesion in the right mandibular canine-premolar region with prominent cortical borders. A botryoid odontogenic cyst was considered in the differential diagnosis. A puncture biopsy of the lesion area was negative. With this finding, the lesion was considered a solid mass, and an incisional biopsy was performed. The results of the histopathologic examination of the lesion were central odontogenic fibroma. The lesion was excised under local anesthesia. After 18 months of follow-up, no recurrence was observed.
Keywords: Central odontogenic fibroma, ectomesenchyme, odontogenic tumor

ÖZ
Bu olgu sunumunda, çok nadir görülen bir tümör olan santral odontojenik fibromun özellikleri, tanısı ve tedavi yaklaşımları anlatılmaktadır. Sistemik olarak sağlıklı 29 yaşında bir kadın hasta rutin kontroller için kliniğimize başvurdu. Ağız içi muayenede sağ mandibular premolar bölgesinin lingual gingivasında çöküntü görüldü. Radyografik muayenede sağ mandibular kanin -premolar dişler bölgesinde belirgin kortikal sınırları olan karma, multiloküler bir lezyon görüldü. Ayırıcı tanıda botryoid odontojenik kist düşünüldü. Lezyon bölgesinin ponksiyon biyopsisi negatifti. Bu bulguyla lezyonun solid bir kitle olduğu düşünüldü ve insizyonel biyopsi yapıldı. Lezyonun histopatolojik incelemesinin sonuçları santral odontojenik fibroma olarak geldi. Lezyon lokal anestezi altında çıkarıldı. 18 aylık takip sonrasında nüks gözlenmedi.
Anahtar kelimeler: Santral odontojenik fibroma, ektomezenkim, odontojenik tümör

INTRODUCTION

Central odontogenic fibroma (COF) is a rare fibroblastic benign tumor of odontogenic ectomesenchyme origin. It has two different clinical types: central (intraosseous) and peripheral (extraosseous). There are two different histopathological subtypes. These are the simple type, which resembles a hyperplastic follicle with hyalinized stroma and little odontogenic epithelium, and the WHO type, which contains a cellular stroma.[1]

In this case report, COF, a rare odontogenic tumor, has been described.

CASE PRESENTATION

A 29-year-old woman presented to our clinic for a routine examination. Intraoral examination of the systemically healthy patient revealed mild expansion in the buccal region of the right mandibular canine-premolar teeth and depression in the lingual gingiva (Figure 1). Panoramic radiography revealed a multilocular, mixed lesion with sclerotic borders between the right mandibular canine and premolar teeth (Figure 2). A cone beam computed tomography (CBCT) examination revealed perforation of the lingual bone (Figure 3).

Differential diagnosis: multilocular lateral periodontal cyst (botryoid odontogenic cyst) and desmoplastic fibroma were considered. After obtaining consent from the patient, a puncture biopsy was performed, and it was negative. An incisional biopsy was taken from the relevant area under local anesthesia. Histopathologic examination was reported as COF (Figure 4). After a definitive diagnosis, total excision of the lesion was decided. Local infiltrative anesthesia was applied to the relevant area. The crevicular incision was made from the right mandibular central tooth to the second premolar, and

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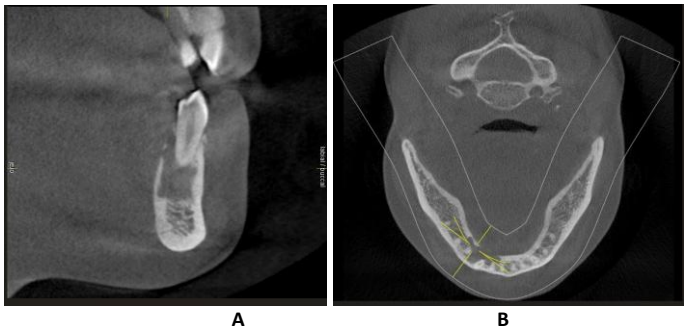
the extraction of the right mandibular first premolar, the lesion was enucleated entirely and easily separated from the bone (Figures 5,6). The area was sutured with a 3/0 silk suture. Histopathologic examination revealed cords of odontogenic epithelial remnants in loose connective tissue-rich stroma and a cement-like calcification focus in one area, consistent with COF. The patient has been followed up periodically for 18 months. No evidence of a recurrence was observed.

Figure 1. Appearance of recession on the lingual aspect of the gum

Figure 2. Panoramic radiography



A **B**

Figure 3. Cone Beam Computed Tomography a: Sagittal cross-section b: Axial cross-section

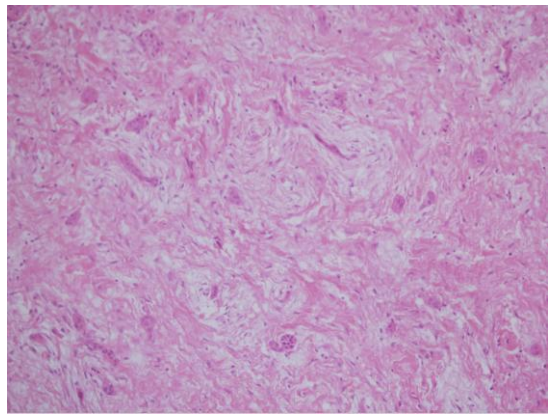


Figure 4. Immature odontogenic epithelial cords within the fibroblastic connective tissue (HEX200)

Figure 5. Intra-operative image

Figure 6. Excisional biopsy materials

DISCUSSION

COF is a rare benign odontogenic tumor of ectomesenchyme origin with a rate of 0.1% among neoplasms in the oral cavity.[2, 3] It is twice as common in women as in men. Although cases have been reported across a wide age range, they are especially prevalent in the second and third decades.[4] It is usually asymptomatic and detected incidentally during routine checkups. Our patient is consistent with the literature in terms of gender, age, and diagnosis. The frequency is higher in the maxilla compared to the mandible. Our case differs from the literature as the lesion was located in the anterior region of the mandible. While the frequency of COF in the maxilla decreases from anterior to posterior, it is the opposite in the mandible.[1] A depression on the maxillary palatal mucosa is a typical finding for this pathology.[5, 6] In our case, a depression was observed in the lingual region. Large lesions may cause tooth mobility, eruption disorder, tooth resorption, and jaw

expansion. Sometimes, it may be associated with impacted teeth.[1] In our case, no tooth displacement or resorption was observed due to its small size. However, after enucleation of the lesion, the right first premolar tooth was extracted due to the loss of bone support.

There are two histopathologic types of COF: simple type and WHO type.[1] In simple type COF, there are stellate fibroblasts arranged in a spiral shape. There may or may not be odontogenic islands, sometimes with foci of dystrophic calcification. In WHO-type COF, odontogenic epithelial complexes are seen as long strips embedded in fibrous connective tissue. Cement or dentin-like calcifications can also be seen.[7] In those seen in the mandible, the epithelium is more dense.[1] In this case, odontogenic epithelial remnants in the form of cords in loose connective tissue-rich stroma and a cement-like calcification focus in one area were observed in tissue samples where no covering epithelium was observed. The findings are consistent with the WHO-type COF.

Radiologically, COF is a radiolucent lesion that may be unilocular or multilocular with distinct cortical borders. Sometimes, it may contain radiopaque areas, resulting in a mixed appearance (12%).[8] The mixed appearance of the lesion in our case is consistent with the literature. Radiographic findings are not specific to COF.[1] Lateral periodontal cyst, hyperplastic dental follicle, odontogenic myxoma, desmoplastic fibroma, ameloblastoma, traumatic bone cyst, and radicular cyst can be considered in the differential diagnosis.[4, 8, 9] This case is consistent with the literature as radiologically, a mixed lesion with a cortical border and a small amount of radiopacity was observed, and there was a perforation in the lingual cortical layer on CBCT.

COF is easily separated from bone despite the absence of a capsule. Curettage after enucleation has been reported to give good results in treating COF. After appropriate treatment, the prognosis is good, and recurrence is rare.[10, 11] In our case, surgical treatment consisted of enucleation after extraction of the tooth associated with the tumor. After 18 months of follow-up, no recurrence was observed.

CONCLUSION

COF is a rare ectomesenchymal tumor. Since its radiographic findings are non-specific, it may be confused with many lesions. Histopathologic evaluation is a crucial component of the diagnostic workup. The appearance of a notch or depression in the gingiva on intraoral examination should bring COF to mind in the differential diagnosis.

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