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Ossifying Fibroma in the Upper Jaw: Case Report

Üst Çenede Ossifiye Fibrom: Olgu Sunumu

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Abstract

Ossifying fibroma is demarcated lesion of fibrous tissue with varying amounts of mineralized material resembling bone and/or cementum. This report presented a 31-year-old female patient with a large ossifying fibroma of the maxilla. In addition, the report discussed the clinician's role in correct diagnosis and the importance of biopsy for the correct management was emphasized.

Keywords: *Ossifying fibroma, cemento-ossifying fibroma, fibro-osseous lesions*

Özet

Osifiye fibrom kemik ve/veya semente benzer farklı miktarlarda mineralize yapılar içeren iyi sınırlı fibröz bir oluşumdur. Bu olgu sunumunda 31 yaşındaki kadın hastanın üst çenesindeki büyük hacimli osifiye fibrom tanımlandı. Ayrıca, tedaviyi belirleyecek doğru tanı için klinisyenin rolü ve biopsinin önemi vurgulandı.

Anahtar sözcükler: Osifiye fibrom, semento-osifiye fibrom, fibro-osseöz lezyonlar

Introduction

Fibro-osseous lesions are a poorly-defined group of lesions affecting the jaws and craniofacial bones which are characterized by the replacement of bone by cellular fibrous tissue containing foci of mineralization that vary in amount and appearance.[1] Ossifying fibroma (OF) is considered as a part of complex entity of tumors in the fibro-osseous group of lesions which is essentially identical to lesions that have been designated as cementifying fibroma and cemento-ossifying fibroma (COF).[2,3]

COF is described by the World Health Organization (WHO) classification of odontogenic tumors to be more of bony origin than related to the odontogenic tissue because of the presence of cementicles as a characteristic feature.[4] Classification and, therefore, diagnosis of these lesions is problematical, partly because of a lack of agreement about terminology, but also because of a significant overlap in histological features [5] (Table 1).

The original most widely used term was cemento-ossifying fibroma which was coined on the basis that most lesions may be associated with the teeth or may contain cementum-like spherical calcifications.[1-5] However, lesions not associated with the jaws, particularly in the sinonasal regions frequently contain these types of calcifications and it is now recognized that cementum and bone are essentially the same tissue. Accordingly the designation ossifying fibroma is now regarded as more appropriate.[2,4,5]

Table 1. Classification of fibro-osseous lesions

Newer classification (Neville et al. 1995)	Older classification (WHO)
Fibrous dysplasia	Fibrous dysplasia
Cemento-osseous dysplasia	Cementoid lesions
(a) Periapical cemento osseous dysplasia	Periapical cemental dysplasia
(b) Focal cemento-osseous dysplasia	
(c) Florid cemento-osseous dysplasia	
Cemento-ossifying fibroma	Ossifying fibroma

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Different clinical variations of OF have been reported such as peripheral cemento-ossifiying fibroma (PCOF). Peripheral cemento-ossifiying fibroma (PCOF), occurs on gingiva and is often known as calcifying fibrous epulis. It is usually composed of cellular fibroblastic tissue containing little or plenty of mineralized tissues-bone, cementum-like material and dystrophic calcification.[6,7] PCOF exhibits similar histo-morphological features similar to OF. However, PCOF is not considered to be a neoplastic lesion, but a hyperplastic reaction caused by chronic inflammation.[2,7,8] According to WHO, a lesion with aggressive growth in patients under the age of 15 is known as juvenile ossifying fibroma (JAOF). JAOF is felt to have a greater propensity for recurrence and exhibits aggressive clinical behavior.[2,9]

The aim of this case report was to present an example of COF in the maxillary arc and emphasize the importance of differential diagnosis of fibro-osseous lesions.

Case report

A thirty-year-old woman was referred to the Oral Diagnosis and Radiology Clinic of Ege University, School of Dentistry with the chief complaint of a painless swelling that had enlarged gradually for three months on the right side of her upper face. The patient had no medical history of systemic diseases or drug use.

The physical examination revealed a non-tender, firm, large (about 3 cm in diameter) swelling located on the vestibular area of the right upper second premolar, second molar and wisdom teeth extending to the right maxillary sinus and orbital floor of right side. The cervical and submandibular lymph nodes were not palpable.

Intra-oral examination showed an expansion of the right maxillary alveolar process extending to the hard palate. The teeth within the region of complaint were vital and no mobility was observed (Fig 1). The radiographic findings revealed a ground glass appearance of an expansile lesion involving the right maxilla with mixed radiopacity and radiolucency between the right upper first premolar and wisdom teeth (Fig 2).

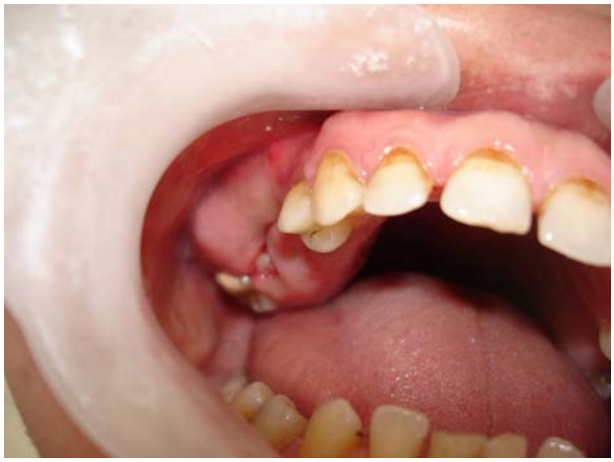

Fig 1. Photograph showing the preoperative clinical appearance of the patient with expansive lesion involving the maxilla.

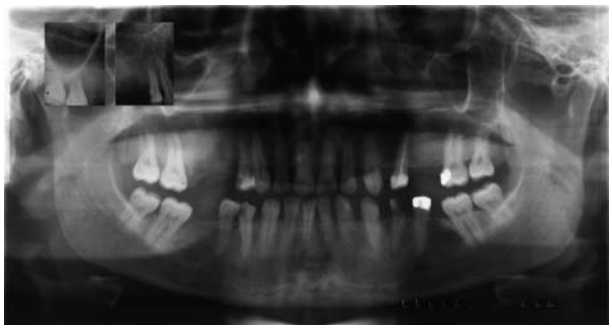

Fig 2. Panoramic radiograph demonstrating the ground glass appearance of the lesion.

Fig 2 inset: Preoperative periapical radiographs

Following the biopsy of the lesion, histological diagnosis was reported as central ossifying fibroma (Fig 3). Under local anesthesia, a subperiosteal partial maxillectomy was prepared from the upper right premolar to the wisdom teeth. The right upper second premolar, second molar and the wisdom teeth which were within the borders of the lesion were extracted (Fig 4). The healing was uneventful without any complications and the panoramic radiographs taken three months and two years after the surgery showed no recurrence (Fig 5).

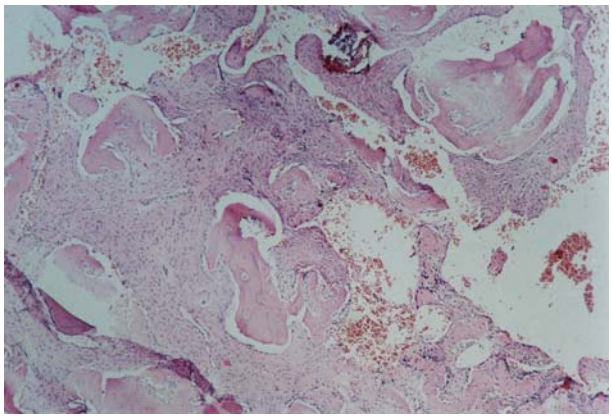

Fig 3. Microscopic view showing trabeculae of viable bone surrounded by a connective tissue stroma of hypercellularity below the intact-strafied squamous epithelium.

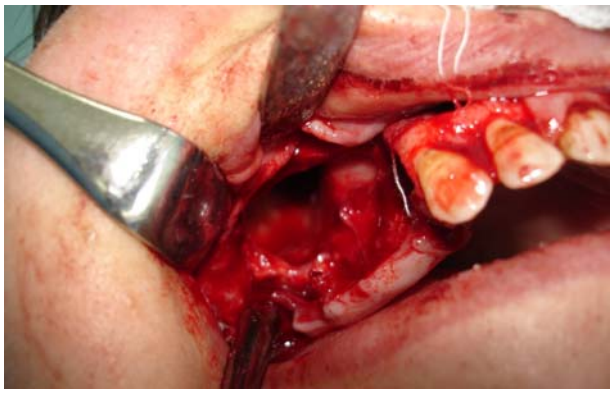

Fig 4. Intra-operative photograph (haematoxylin-eosin; original magnification x110)

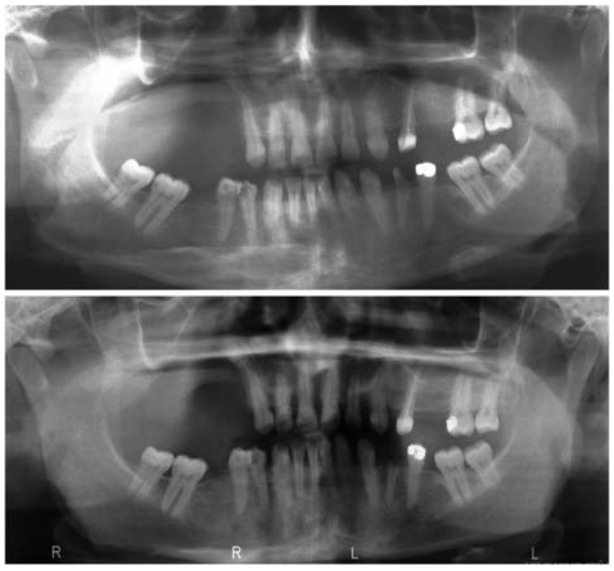

Fig 5. Panoramic radiographs taken three months and two years after the operation.

Discussion

COF is a relatively rare lesion that can be distinguished by its clinical, radiological and histological features. They tend to occur in the third and fourth decades of life with a predilection for women. The premolar and molar region of the mandible is the most common site. This lesion usually appears within the bone, although cases involving the gingiva soft tissue have been reported.[1,2,8] Unlikely in our case the lesion was located in the posterior maxilla within the bone.

Although occasionally a patient may complain of facial asymmetry or painless swelling[8] most cases of OF are asymptomatic and discovered on routine radiographic examination as is seen in the present case. When it grows beyond the confines of the jaw, it maintains a thin capsule of new subperiosteal cortical bone, an important feature that distinguishes it from the more destructive growth pattern of intraosseous osteosarcoma. Ossifying fibromas rarely erode or displace teeth and are generally slow growing and expansive. It has been noted that ossifying fibromas do not become malignant but cases of osteosarcoma have been reported to arise in long-standing fibrous dysplasia.[2,6]

Radiographic features are well-delineated radiolucent or mixed, depending on the amount of calcification, or are radiopaque lesion and surrounded by a radiolucent rim. In each type, there is a sclerotic border around the lesion. Multilocularity is rare. Root divergence and resorption are not common. OF shows varying degrees of radiographic density depending on amount of calcification and ossification.[6,8] Likewise in our case the appearance of the lesion was ground glass with mixed radiopaque and radiolucent appearance. Also in our case the lesion was located in the right maxilla and no root resorption was observed.

Histomorphologically, ossifying fibroma is well demarcated from surrounding bone. The tumor bone is seen as trabeculae and/or oval islands distributed in a relatively uniform pattern

throughout the lesion. Jaw lesions that contain predominantly oval hard-tissue islands, instead of osseous trabeculae, have been referred to as cemento or psamomatoid- ossifying fibromas. Osteoblasts are usually prominent, typically rimming the new bone, and osteoclasts are scant. Accordingly in our case the lesion was not encapsulated and osteoblasts were prominent. With time, ossifying fibromas show continued expansion, with little change microscopically.[2,4,5,8]

The treatment of OF involves the complete removal through the use of curettage, enucleation, or excision. Small maxillary lesions may be excised via a window made in the alveolar bone, although large lesions require more extensive surgery. Radiotherapy is contraindicated in the management of ossifying fibroma, and a "wait-and-see" policy is not generally recommended.[5] In our case partial maxillectomy was performed as the choice of treatment.

The differential diagnosis should include true fibrous dysplasia, osteoid osteoma, osteoblastoma, cementoblastoma, periapical and focal cemento-osseous dysplasia, juvenile COF, chronic osteomyelitis, and sclerosing osteomyelitis of Garré.[6,8] Radiographically, the intraosseous COF is unilocular, well circumscribed, and surrounded by a sclerotic margin. This feature is important in distinguishing COF from fibrous dysplasia, where it is absent. A key feature of ossifying fibroma that particularly distinguishes it from fibrous dysplasia is that the pattern of mineralization varies from place to place within the lesion, whereas in fibrous dysplasia, the pattern tends to be uniform throughout the lesion.[1,6] Radiological features may help to separate these entities but diagnosis requires careful clinic, radiologic and histologic evaluation.

Conclusion

It can be stated that slow growing soft tissues should be examined carefully in suspicion of a reactive gingival lesion and excisional biopsy is mandatory for correct diagnosis and management planning.

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