

Case Report

Central Odontogenic Fibroma

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ABSTRACT

In 1991, Handlers and colleagues described the Central odontogenic fibroma (COF) as a distinct entity which is a rare benign odontogenic tumour and up to the present, only 78 cases of it have been published. COF usually occurs in an adult patient and has a predilection for the anterior region of the jaws. A 2.8:1 female to male ratio is typically noted. This article presents a case of COF in a 50-year-old male in the right side of mandible and discuss about the clinic pathological findings, radiographic feature, differential diagnosis, as well as surgical technique of the COF

Keywords: Odontogenic Tumors, Fibroma, Case Report

Introduction

Central odontogenic fibroma (COF) is a rare odontogenic tumor of the jaws first described in 1991 by Handlers et al. (1). It usually occurs in an adult patient and has a predilection for the anterior region of the jaws. A 2.8:1 female to male ratio is typically noted. The WHO classification in 2005 explains the COF as a proliferation of odontogenic ectomesenchyme, with or without included odontogenic epithelium (2). COF is an uncommon tumor of ectomesenchyme containing strands of odontog-

enic epithelium with collagenous stroma (3). The tumor may be arising from periodontal ligament or dental pulp. One third of lesions are related with an impacted tooth. Because of its non-monopolized histological appearance, this tumor may be mistaken with other lesions, like hyperplastic follicular sac, fibromyxoma, desmoplastic fibroma and ameloblastic fibroma which clinical correlation should help, in the diagnosis of odontogenic fibromas (3). There is little information about surgical technique and gross appearance of this lesion. This study report a case of large COF in the right premolar/

Received: 23 May 2012

Accepted: 02 October 2012

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molar region of the mandible, also discuss about the clinic pathological findings, radiographic feature, differential diagnosis, as well as surgical technique of the COF.

Case Report

A 50-year-old male was referred to Ghaem Hospital, Masshad, Iran with 6- year history of swelling in the right side of mandible. Intraoral examination, indicated a firm swelling in right buccal vestibule of mandible (Fig.1). Right wisdom tooth was displaced by the lesion without related mobility and negative responses were achieved to electric pulp test of pulp vitality in third molar. The overlying mucosa was normal. There was no sensory loss or difficulty in chewing. Extra oral examination revealed bulging of mandibular inferior border. Panoramic radiograph showed multilocular radiolucency extending from right first premolar to mandibular angle area which was $2/7 \times 5/3$ cm in dimension. There was root resorption of the third molar in apical third, inferior displacement of the mandibular canal, and thinning of inferior border (Fig. 2). Axial computed tomography (CT) scan demonstrated a large mass of the mandible, which expanded but indicted buccal and lingual cortical bone on right side (Fig.3). The patient therefore underwent an aspiration biopsy that was negative. Finally incisional biopsy was done, and then samples were sent for histopathological examination. The gross specimen was consisted of two pieces tissue which was $0.8 \times 1 \times 1$ cm in size, white in color, and firm consistency (Fig. 4). Histopathologic examination revealed proliferation of spindle fibroblastic cells within a collagenous background in a whorling arrangement, also myxoid change areas were clear. The histopathological diagnosis was simple type of COF (Fig. 5). The lesion was treated by enucleation. Under general anesthesia buccal cortical plate was removed by osteotome and inferior alveolar nerve preserved. Total

lesion enucleated one piece and was sending for pathological examination. The specimen was evaluated and histopathology was conformity with the incisional biopsy report. Follow up after 2- years' operatively showed no recurrence and lip sensation was normal.



Fig.1- Clinical photography shows bulging of mandibular inferior border.

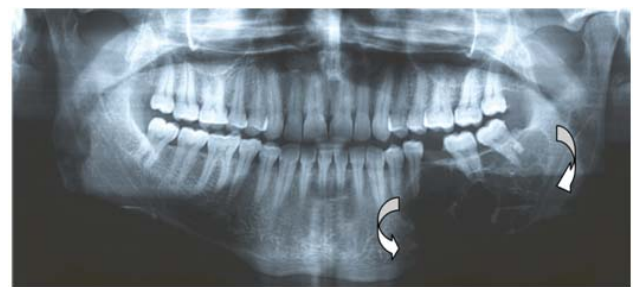


Fig. 2- Panoramic view showed multilocular radiolucency extending from right first premolar to mandibular angle area and root resorption of the third molar .



Fig. 3- Axial CT image shows expanded but intact buccal and lingual cortical bone on right side.

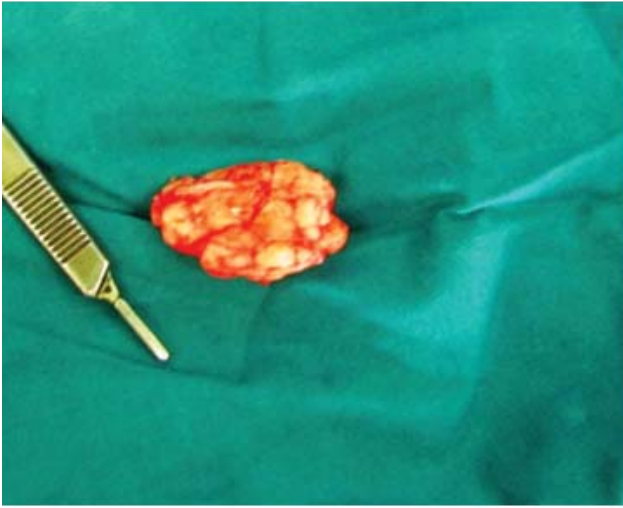


Fig. 4- The gross specimen shows multilobulated, encapsulated, white one piece enucleated lesion.

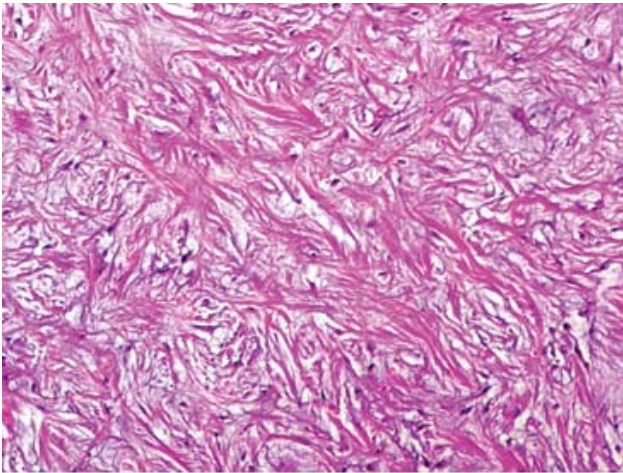


Fig. 5- Benign proliferation of spindle fibroblastic cells within a collagenous background in a whorling arrangement and myxoid fibrous change areas were clear (H& E staining, Original Magnification $\times 400$).

Discussion

COF constitute approximately 1.5 % of odontogenic tumor. Up to the present, only 78 cases of it have been published. It has been reported in an adult patient (range, 4-80 yr), and existed in either jaw (2). Approximately 70% of the cases have occurred in female (M:F= 1:2/8). The lesion with small size, are usually asymptomatic, but larger tumors are occasionally painful with bony expansion or mobility of teeth. COFs are

generally painless and slow growing (4-8). Our patient only claimed 6-yr history of swelling in the right side of mandible, and complaining only the discomfort caused by that painless mass, without mobility.

Radiographically, the lesions appear as well-defined unilocular radiolucencies, but the large lesions, may become multilocular. Restoration of adjacent tooth roots is also frequently observed. In the present cases multilocular radiolucency extending from right first premolar to mandibular angle area and root resorption of the third molar observed on panoramic radiograph.

Microscopically, two patterns are attributed to COF. The simple type of COF composed of scattered fibroblast within a fine collagenous background; epithelial rests may or may not be seen. In this view it might be similar a hyperplastic follicular sac of an unerupted tooth. The WHO type of COF has a mature connective tissue contain collagen fiber with narrow cored of odontogenic epithelium. It lacks the palisading of columnar cells around epithelial nest. There are calcific deposits composed of dentinoid, cementum-like or dysplastic osteoid substance in some patients. Focal area of hyalinization and myxoid change may be present (9). There are no differences; between the two subtypes of this lesion in clinical appearance behavior.

The present case was compatible with the so called simple type of odontogenic fibroma. The primary differential diagnosis consideration in this lesion is desmoplastic fibroma (the bony counterpart of fibromatosis). Since desmoplastic fibroma be considered as a more aggressive, fast growth and recurrent behavior with ill-defined margins that it occur usually in younger age clinical, eventually radiological, and microscopic features must be considered together to distinguish them. Odontogenic myxomas may occasionally mimic the histopathologic appearance of simple type of COF due to fine collagen and considerable ground substance (10).

The odontogenic myxomas are locally infiltrative lesions that have recurrent potential. Ameloblastic fibromas (AF) is a true mixed tumor in which both the epithelial and mesenchymal component are neoplastic but COF as a tumor of odontogenic ecomesenchyme (11). AF almost occurs in younger patients, and males are affected slightly more than female. Microscopically, in this lesion, the cord of odontogenic epithelium, often in an anastomosing arrangement is supported by primitive connective tissue. Radiographically, smaller odontogenic fibroma has an average of 2.2 cm in size; average size of larger lesions is 4.2 cm. Thus, enblock removal in large lesion must be requested for prevention of recurrence. The case present is among the large size of reported COFs. The nature of the COF commonly allows enucleation of the lesion with relative facility.

Treatment of COF is enucleation. Recurrences have been reported, but are very uncommon. One piece enucleation of the lesion is possible because it has no attachment to a tooth root and bone but, a few cases, which have grown large, may necessitate extraction tooth to more access for total removal. .

Enucleation is the choice of treatment in COF which prevents of nerve injury, and defect in the mandible in large lesions. Supplemental treatments such as curettage with curette or bur and cryotherapy are not necessary. Removal of the teeth is not necessary requirement, unless it prevents from complete eradication of the lesion.

Acknowledgements

The authors declare that there is no conflict of interest.

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