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Central odontogenic fibroma: A case report

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ABSTRACT

Central odontogenic fibroma (cof) is an uncommon odontogenic neoplasm derived from odontogenic ectomesenchyme, representing less than 1% of all odontogenic neoplasms. It occurs centrally within the jaw bones and manifests usually as an asymptomatic, slowly growing, hard, bony swelling, leading to cortical expansion and facial asymmetry., this article reports clinical, radiological and histological features of cof occurring in the left mandible of a 13 year old male with an emphasis on distinguishing this tumor from some other centrally occurring lesions with similar clinical presentation like myxofibroma and desmoplastic fibroma.

Key words:-central odontogenic fibroma, odontogenic tumors, mixed odontogenic tumors, central bone lesions, desmoplastic fibroma, myxofibroma

INTRODUCTION

Central odontogenic fibroma (cof) is a somewhat controversial and an uncommon lesion. It occurs in tooth bearing regions of upper and lower jaws and is believed to owe its origin to odontogenic ectomesenchyme [1]. It is reported to occur between 4 80 years of age with a mean age of occurrence at 40 years. It shows an approximately 2.2:1 female predilection. About 45% of the reported cases have occurred in maxilla with most lesions occurring anterior to first molar, while in mandible almost half of the lesions have occurred posterior to first molar[2]. Cof manifests as asymptomatic, slowly growing mass. Tooth mobility and / or conspicuous swelling may develop subsequently in larger tumors [3]. Radiographically, smaller tumors present as well defined, round, unilocular radiolucencies, while larger lesions tend to be multilocular radiolucencies. Divergence of roots and root resorption is also common. About 1/3rd of cof occur in association with an unerupted tooth and about 12% of cof exhibit radiopaque flecks scattered within the lesion [4]. Vincent et al [5] reported a granular cell variant of cof, while allen et al [6] and mosqueda et al [7] have reported cases of cof in association with giant cell granuloma like component.

CASE REPORT

A 13 year old male reported with history of a gradually enlarging, painless swelling in the left face since one year. No other associated symptoms were reported. Extra oral examination revealed a well defined, hard, non tender swelling extending from left posterior body of mandible to angle, measuring roughly 4.5cm x 3cm in size. Intra orally, the swelling extended into the left mandibular labio-buccal sulcus. Pulp vitality tests were normal.

The lateral oblique radiograph showed a well defined, multilocular radiolucency extending

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from 37 till ascending ramus. A provisional diagnosis of odontogenic keratocyst, desmoplastic fibroma and ameloblastic fibroma was made and subsequently, an incisional biopsy was performed and the specimen was submitted for histopathological examination. The diagnosis upon histopathological examination was given as central odontogenic fibroma. Subsequently, a complete surgical excision was performed and the post surgical healing was uneventful.

DISCUSSION

cof, a rare neoplasm is believed to arise from the odontogenic ectomesenchyme i.e. Dental papilla, periodontal ligament or dental follicle[8]. Being a mixed tumor, this lesion is liable to be confused histologically with desmoplastic fibroma, ameloblastic fibroma (if odontogenic islands are large and numerous) or myxofibromas. Gardner d [9] has subdivided cof into three types microscopically:

1. Hyperplastic dental follicle.
2. Simple type made of mature, collagenous tissue and containing variable amounts of inactive odontogenic epithelial nests and / or strands.
3. Who type which, apart from above features, also shows presence of dysplastic dentin or cementum like tissue.

however, while the latest who classification distinguishes between a peripheral and central odontogenic fibroma, it does not subdivide the cof into any subtypes. Wesley et al[10] in 1975 suggested a set of criteria for diagnosing cof as follows:

1.Characteristically the lesion is central in the jaws and has an insidious, slow growth, resulting in asymmetric cortical expansion.

2.Radiologically, most lesions are multilocular, radiolucent and in some instances, the lesion may be associated with an Impacted / unerupted tooth.

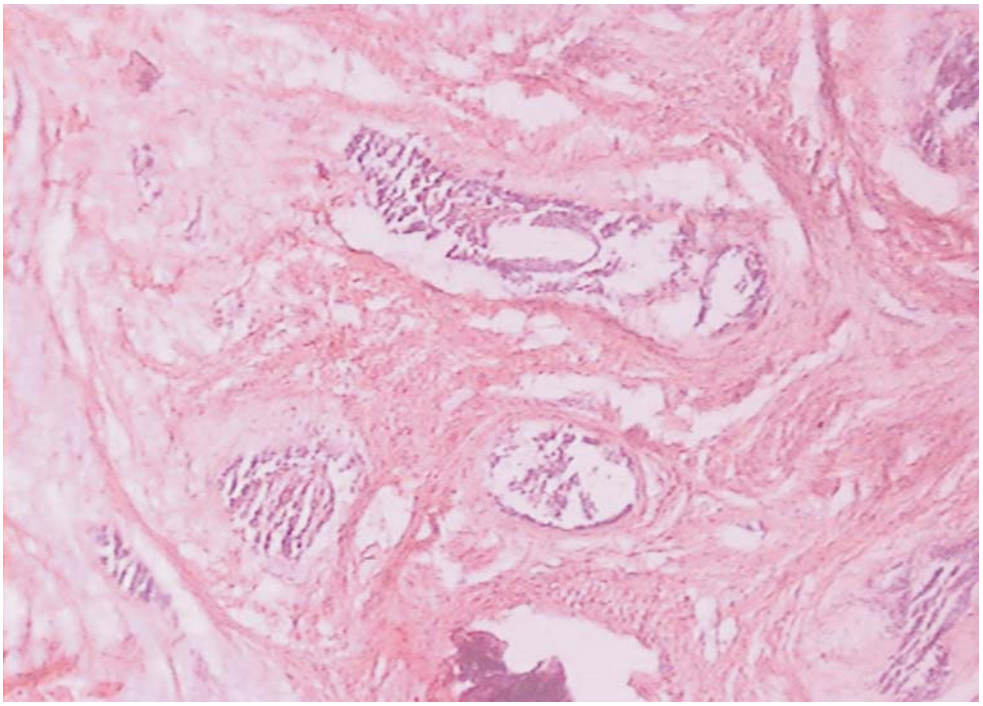
3. Histologically the lesion is typically composed of mature collagen fibers interspersed with numerous spindle shaped fibroblasts. Strands and / or rests of inactive odontogenic epithelium may or may not be present.

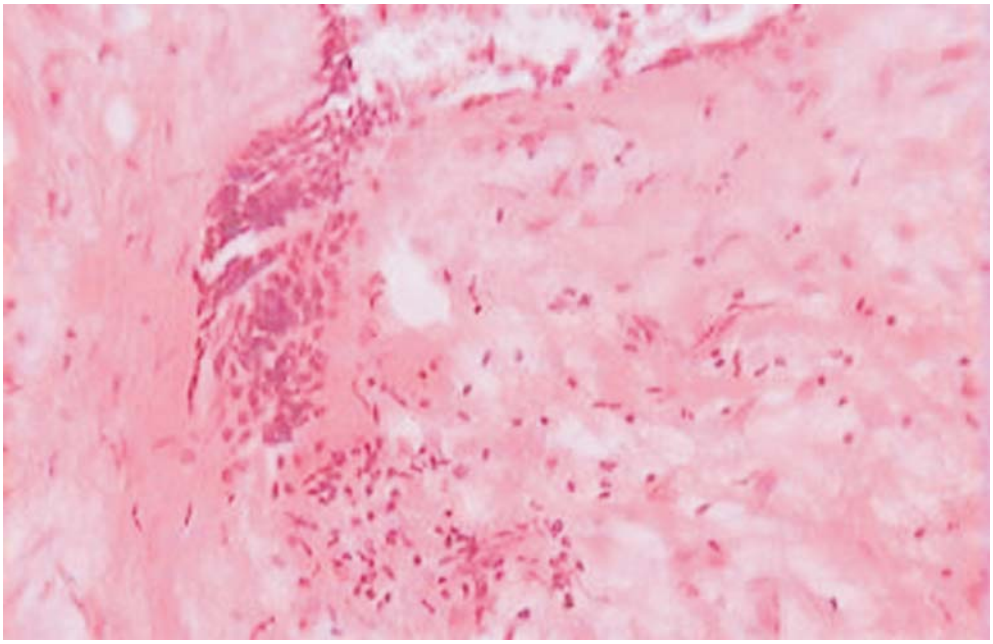
4. The lesion is benign and responds well to conservative surgical treatment with no tendency to recur or undergo malignant transformation.

according to most reviews[2, 3, 7], cof occurs commonly in the maxilla whereas our case occurred in the mandible, with a pronounced predilection to occur in females, while our case occurred in a male. Typically, the lesion appears as a well demarcated, multilocular radiolucency. In the present case also, the lesion appeared as a multilocular, although well defined radiolucency mimicking an odontogenic keratocyst. Microscopically, cof shows mature, fibrous connective tissue with interspersed, inactive odontogenic epithelial rests/islands or even dysplastic dentin and cementum like material. Our case showed all the above histological features and consequently a diagnosis of central odontogenic fibroma was made based on clinical and histological findings. , the purpose of reporting this case is to draw attention towards distinguishing cof from some other centrally occurring lesions like odontogenic keratocyst, ameloblastic fibroma, myxofibroma and desmoplastic fibroma. Apart from its obvious histological features, odontogenic keratocyst shows antero-posterior growth and consequently grows to a large size without causing considerable expansion of cortical plates. Ameloblastic fibroma occurs most commonly in posterior mandibular region and is very commonly associated with an impacted / unerupted tooth. Histologically, the features are distinctive, showing characteristic ameloblastic follicles surrounded by a highly cellular dental follicle like stroma. Myxofibromas present as scalloped / ill defined radiolucent defects and histologically show abundant collagen fibers along with stellate / spindle / round cells. Desmoplastic fibroma is more common in

posterior mandible and is more often seen as a unilocular rather than a multilocular radiolucency. It is histologically characterized by abundant collagen fibers and absence of odontogenic epithelial rests easily distinguishes it from cof.

the cof is considered a benign odontogenic tumor; therefore the treatment of choice is enucleation with careful follow up for a few years[11,12], although no cases of recurrence or malignant transformation have been reportedso far.





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