Central Ossifying Fibroma of the Mandible: A Case Report

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Abstract

The Central Ossifying Fibroma (OF) of bone is a bone neoplasm which has remained in controversy in the past due to its confusion of terminology and diagnosis criteria. It was first designated as jaw lesions by Montgomery. It is a definite entity and should be separated from other fibro-osseous lesions & Fibrous Dysplasia of bone as these do not represent true a neoplasm. This article aims to present a case report of a 28 year old female patient with Central Ossifying Fibroma.

Keywords: Cemento-ossifying fibroma, Fibro-osseous Lesion, Fibrous Dysplasia.

Introduction

The term"Cemento-Ossifying Fibroma" (COF) is replaced by "Ossifying Fibroma" (OF) by the recent edition of odontogenic tumors produced by WHO (2005).[1,2,3] Brannon and Fowlerstarted to reuse the term ossifying fibroma over the "Cemento-Ossifying Fibroma" (COF) and this trend was continued by Reichart and Philipsen. The term Ossifying Fibroma is recently vacated by Schajowiczover the term "Osteofibrous Dysplasia".[4] Central Ossifying Fibroma of the jaw is a benign, fibro-osseous lesion of mesenchymal origin, consists of highly cellular, fibrous tissue with varying amounts of calcified tissue, resembling cementum, boneor both. All these terms Cemento-Ossifying Fibroma, Cementifying Fibroma and Ossifying Fibroma are appropriate for this tumor as they contain a variety of calcified materials.[3] It is generally seen in third –fourth decade, and occur as a painless swelling of the mandible.[5]

Case Report

28 year old female patient reported to the outpatient department of I.T.S Dental College, Hospital and Research Centre, Greater Noida with a chief complaint of swelling in lower right back region of mouth since 1year (Fig.1). Intraoral examination revealed a bony hard swelling in the region of 46, 47about 3x2.7cm extending up to the inferior border of mandible, showing buccal & lingual cortical plate expansion.

Orthopantamograph revealed a single, solitary radiolucent lesion mixed with radio-opaque flecks having radiolucent margins present on the distal surface of the root of 45 extending till the lower border of mandible, posteriorly till mesial root of 47 (Fig. 2). Occlusal radiograph showed buccal & lingual cortical plate expansion. Computer tomography showed extent of lesion (Fig. 3).

An Incisional biopsy was performed and both

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soft & hard tissue were received for histopathological evaluation. H & E stained sections showed cellular connective tissue stroma with plump proliferating fibroblast (Fig. 4). Scattered small to large foci of irregular bony trabeculae, few with osteoblastic rimming was observed (Fig. 5). Dystrophic calcifications and acellular ovoid or spherical calcification along with scattered hemosiderin pigments were also observed. Overall features were suggestive of Ossifying Fibroma.

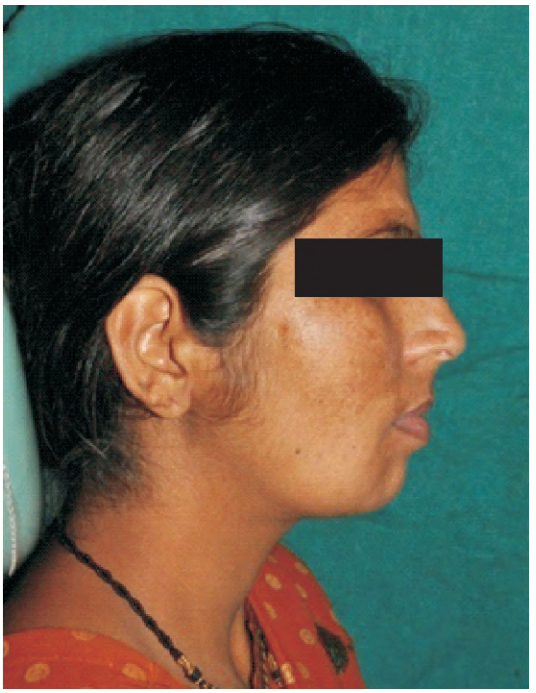

Fig. 1:Pre-operative view showing swelling on the right posterior mandibular region in relation to 47, 48.

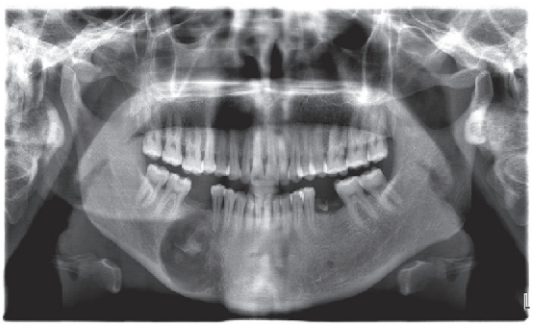

Fig. 2: Pre-operative Panoramic view showing single, solitary, radiolucent lesion mixed with radio-opaque flecks.

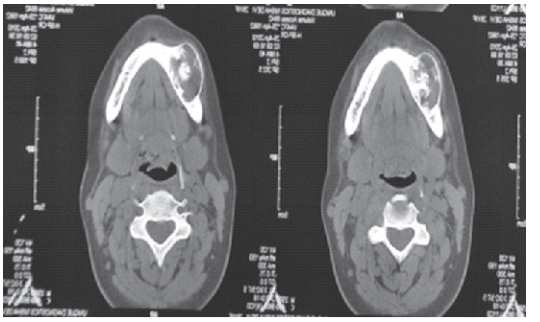

Fig. 3:Computer Tomography(CT) showing bucco-lingual extension of lesion.

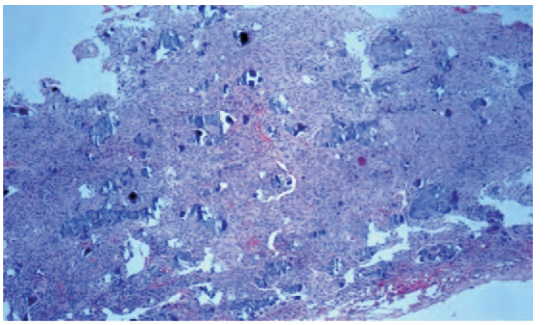

Fig. 4 : Photomicrograph showing cellular connective tissue stroma with scattered small to large foci of irregular bony trabeculae, dystrophic calcifications and acellular ovoid or spherical calcification. (H & E, X40)

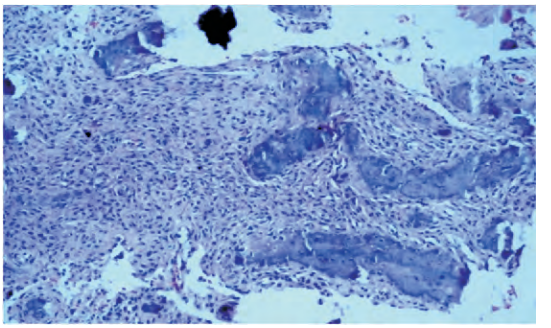

Fig. 5:Photomicrograph showing plump proliferating fibroblast, foci of irregular bony trabeculae are seen, few with osteoblastic rimming. (H & E, X100)

Disscusion

The term “Ossifying Fibroma” is used since 1927and it is grouped with cementum-containing tumors since 1968. The WHO In 1971 classified cementum containing lesions into four types as: Fibrous Dysplasia,

Ossifying Fibroma, Cementifying Fibroma & Cemento-Ossifying Fibroma. In the second WHO classification, benign fibro–osseous lesions are divided intoosteogenic neoplasm and non neoplastic bone lesions, the ossifying fibroma belongs to the former category. The WHO in 2005[6] reduced the term "Cemento-Ossifying Fibroma"to Ossifying Fibroma.

There is confusion between Cemento-osseous dysplasia with true Ossifying Fibromas. The epidemiology of Ossifying Fibroma is unclear. It appears at third and fourth decades of life, although mean age is lowest in Sub-Saharan Africans [7] and is highest in East Asian communities. According to Skota the mean age is almost 5.71 years lower for males. Hongkong reports confirm high female preponderance and it was same in our case[7].The commonest site in oral cavity is molar and premolar areas. It is commonly seen in mandible. It produces cortical plate expansion, usually in buccal plane. Hong Kong report[7]showedbuccal expansion in 74% cases and Sciubba and Younai reported it in 72% cases. Vertical expansion was also observed by Adekeye and co-authors[8] and Agestini and co-authors.Hong Kong reports showed erosion of the lower border of the mandible. 90% maxillary Ossifying fibroma cases show expansion into maxillary antrum. East Asian reports suggested root resorptionalso.[4]

The detailed report of clinical signs was given by Aldekeye and co–authors[8] and they reported variable clinical presentations. According to Waldron, Eversole, Summerlin & Tomichthe lesions were asymptomatic painless swelling and mostly were discovered incidentally as compared to Hong Kong report.[7]

Radiographic features according to Hong Kong reports, show mainly radio-opacity within radiolucency, as is seen in our case. But Sciubba & Younai described them as a complete radiolucent lesions.[9] Complete radiolucencies which are seen in younger cases suggest that the opacification increases with increasing age. The absence of radiolucencies in oldest group in Hong Kong report suggests that the larger size and expansion of Ossifying Fibroma reflects reactivation of Ossifying fibroma that existed before the onset of menopause, rather than being de novo lesions. They also present as a lesion of well defined borders, accompanied by marginal sclerosis having thin cortex.[4]

Histologically, fibroblastic hyper cellularpattern prevails.[9] Bland spindle cell is the predominant cell of this lesion and it rarely exhibits mitotic figures. Irregularly shaped osseous islands are seen admixed in the fibrous background. The trabeculaevary in size and they demonstratea mixture of woven and lamellar pattern frequently. As it matures, the ossification islands increase in number, enlarge and coalesce ultimately. Similar islands are seen in fibrous dysplasia, but they show much sharper separation from the surrounding spindle cells. The diagnostic features for this lesion are the presence of active osteoblasts, surrounding the island of bone referred to as osteoblasticrimming.[10]

The Ossifying Fibromais generally well circumscribed thus permits enucleation of the tumor. Recurrence after removal of the tumor is rare.[9] Eversole and co-authors reported a 28% recurrence rate[4] which is shown by relatively small lesions. Larger lesions exhibiting bone destruction and may necessitate surgical resection and bone grafting. The prognosis is very good. Long term follow up should be done. Malignant

transformation is extremely uncommon.

Conclusion

We reported a case of Ossifying fibroma in a 28-year old female patient who came with an asymptomatic swelling on the right side of the mandible. We suggest that a proper correlation of the clinical, radiological and the histological features is necessary for establishing a definitive diagnosis, as well as for categorizing the Fibro osseous lesions. Since chances of recurrence of Ossifying Fibroma are reported in the literature, surgical resection and long term follow-up of the patients is warranted.

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