

Cemento Ossifying Fibroma: A Case Report

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ABSTRACT

Cemento Ossifying Fibroma is a rare fibro-osseous lesion causing slow expansion of the involved bone and is most often discovered incidentally. Here we present a case of 45 year old female with complaints of nasal blockage for 6 months, post nasal discharge, sneezing and headache. CT scan of Para Nasal sinuses revealed mucosal thickening of the bilateral frontal, left ethmoid, left maxillary sinuses and nasal cavity on the left side, along with a few soft calcifications. Histopathological examination confirmed the diagnosis of Cemento Ossifying Fibroma.

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INTRODUCTION

Cemento Ossifying Fibroma (COF) is a relatively rare lesion considered an osteogenic tumour (non-odontogenic) with variable expression. It is defined as a well-demarcated and occasionally encapsulated lesion consisting of fibrous tissue containing variable amounts of mineralized material resembling bone (Ossifying fibroma), cementum (Cementifying fibroma) or both.^{1,2}

The most common location of this lesion is the mandible (75%) involving the premolar and molar regions. Facial sinuses and the nasal cavities are rarer locations.³ Cemento Ossifying Fibroma is usually diagnosed in the third and fourth decades of life with female to male ratio being 4:1.⁴

Small lesions are detected incidentally on radiographic examination and seldom cause any symptoms. Large tumours result in a painless swelling of the involved bone. The lesion may cause obvious facial asymmetry and is rarely associated with pain and paraesthesia. Few cases show root resorption or displacement of the neighbouring teeth⁵

Clinically, it manifests as a pedunculated or sessile nodular mass, which usually originates in the interdental papilla. Its

colour is similar to that of the mucosa unless the lesion is ulcerated.⁶

CASE REPORT

A 45-year-old female reported to the Sri Guru Ram Das Institute of Medical Research, Amritsar with complaints of nasal blockage for 6 months, post nasal discharge, sneezing and headache.

Local Examination

Local examination of the patient revealed, a deviated nasal septum (S shape) with left inferior turbinate hypertrophy. No nasal mucosa congestion was seen. No active nasal discharge was present.

On Radiography

Radiographic investigations were carried out in the form of CT of the paranasal sinus. It revealed mucosal thickening of the bilateral frontal, left ethmoid, left maxillary sinuses and nasal cavity on the left side along with a few soft calcifications. Hence, a provisional diagnosis of Fungal/

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Chronic Sinusitis was made.

Pathological Examination

Grossly we received multiple, irregular grey-yellow to grey-brown gritty soft tissue pieces altogether amounting to about 1.5gm

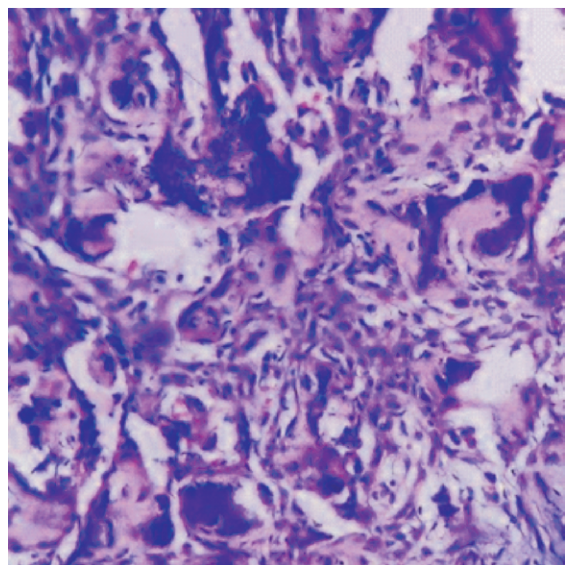
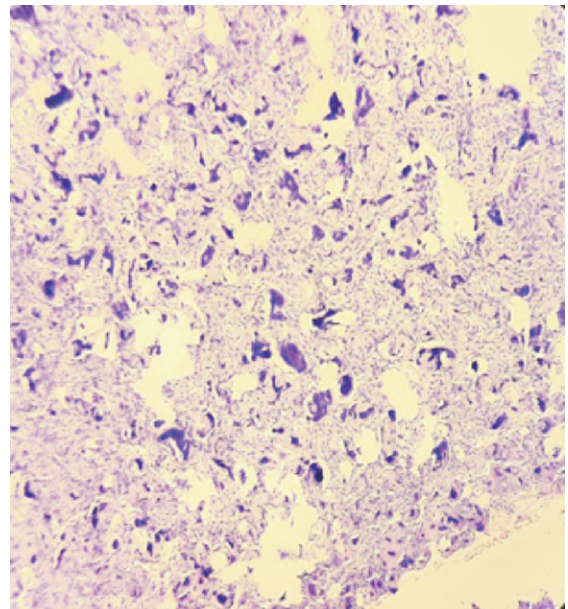
CT scan: Paranasal Sinus showing mucosal thickening of bilateral frontal, left ethmoid, left maxillary sinuses and nasal cavity on left side along with few soft calcifications



Microscopic examination revealed the presence of woven and lamellar bone deposits and cementum-like calcification surrounded by hyperchromatic, pleomorphic, oval to spindle cells with vesicular nuclear chromatin, inconspicuous nucleoli and a moderate amount of cytoplasm.

The final diagnosis of Cemento Ossifying Fibroma was made on histopathology.

Histologic view of lesion under 10x and 40x magnification showing the cementum-like calcification surrounded by fibrous tissue.



DISCUSSION

In 1872 Menzel first described Cemento Ossifying Fibroma as a variant of ossifying fibroma or a benign fibro osseous neoplasm.⁷ According to the World Health Organization (WHO), the Cemento Ossifying Fibroma is an osteogenic neoplasm comprising of fibrous tissue having varying quantities of mineralised material.

While the aetiology is yet to be known, trauma may act as a predisposing factor, which suggests a connective tissue reactive aetiology rather than a neoplastic one. It has been proposed that trauma or dental extractions may leave part of the periodontal membrane attached to the wall of the alveolus, predisposing to stimulation and subsequent deposition of cementum, thus supporting the theory of periodontal membrane as the origin of Cemento Ossifying Fibroma⁸

Cemento Ossifying Fibroma may occur in 2 forms- a central variant arising from the periodontal ligament adjacent to the root apex and a peripheral variant occurring solely in the soft tissue area of the jaw. While the central variant is a neoplastic entity, the peripheral variant is a focal, reactive non-neoplastic growth of soft tissue which may be composed of mature collagen, cellular fibroblastic tissue, mineralized tissue and multinucleated giant cells. These lesions are slow-growing, while one-half of all cases are asymptomatic, the growth of the tumor over time may lead to facial asymmetry: the lesion causing cortical expansion.⁹

Ossifying fibromas elaborate bone, cementum and spheroidal calcifications, which has given rise to various terms for this benign fibro-osseous neoplasm. When bone predominates, "ossifying" is the appellation, while the term "identifying" has been assigned when the curvilinear trabeculae or spheroidal calcifications are encountered¹⁰

Reed used the criteria of the presence or absence of woven and lamellar bone to differentiate Cemento Ossifying Fibroma from other osteogenic lesions¹¹. Fibrous dysplasia consists of woven bone, whereas Cemento Ossifying Fibroma and Ossifying Fibroma contain woven bone with the presence of osteoblastic rimming. Another differentiating feature between fibrous dysplasia and Cemento Ossifying Fibroma is the presence of cementum in the form of psammoma bodies in a benign fibrous tissue matrix.¹¹

The absence of suggestive clinical signs makes it possible to immediately rule out any acute inflammatory or trauma-related disorder. The slow, progressive as well as painless course, orient the diagnosis towards a benign neoplastic process.¹²

Larger tumours may involve the nasal septum, orbital floor and infraorbital foramen. Root resorption and tooth displacement may be evident, suggesting an active proliferating stage¹³

Cemento Ossifying Fibroma has three radiographic stages. In the early stage, the lesion appears to be radiolucent because of the proliferation of fibrous tissue. As the tumour advances, calcification starts appearing, making the lesion a mixture of radiolucency and opacity, till the lesion ultimately appears as a radio-opaque mass due to advanced calcification due to the formation of bone and cementum¹⁴

Surgical resection of the lesion with enucleation and curettage of the bone bed is the treatment of choice. Without treatment, the lesion evolves slowly and progressively and may erode the surrounding dental roots.³

Inadequate resection of the lesion may lead to recurrence of the lesion.⁵ The average recurrence rate of Cemento Ossifying Fibroma is 10.1% with an average follow-up of 25 months. Eversole et al. reported a recurrence rate of 28 % after enucleation and curettage and Liu also reported a recurrence rate of 27.2%.^{8,15}

CONCLUSION

Cemento Ossifying Fibroma is a rare slow growing tumour that should be kept in the differential diagnosis while evaluating for slow-growing tumors of the maxillofacial region.

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