

## Central Ossifying Fibroma of the Mandible: A Case Report with Review of Literature

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**Abstract:** Cemento ossifying fibroma is a benign, non odontogenic tumour of the jaw, a subdivision of fibro-osseous lesions. These are slow growing, painless lesions which are seen more commonly in women between the third and fourth decades of life. This article reports a case of Ossifying fibroma of the mandible in a 45 year old female patient with the review of literature.

**Key words:** Cemento Ossifying Fibroma • Non Odontogenic Tumor • Fibro-Osseous Lesions

### INTRODUCTION

Central Ossifying Fibroma (COF) is a benign osseous neoplasm which consists of highly cellular, fibrous tissue with varying amounts of calcified tissue, which resembles the bone, the cementum or both [1, 2]. It is most commonly seen between the third and fourth decades of life [3-7] and is more frequent in women than in men (4:1). The most common location is the mandible [8]. The lesion is generally asymptomatic until the growth produces a noticeable swelling and mild deformity; displacement of teeth may be an early clinical feature [9-11].

Radiographically, COF presents as a well-defined, unilocular lesion which contains varying amounts of radiopaque material [5]. Once it is completely excised, COF does not usually recur [6]. This article presents a case of COF in the mandible of a 45 year old female patient.

**Case Report:** A 45 year old female patient reported with pain and swelling in the left back teeth region for the past one week. The history of present illness revealed that the pain started one week back which was intermittent in nature. The patient reported that the swelling was present for the past four years. Since the swelling was not associated with pain all these years, patient had not taken any treatment for the same.

Extraoral examination (Fig 1) revealed mild diffuse swelling in the left mandibular region extending from the commisures to the inferior border of the mandible.



Fig. 1: Extraoral View

There was a left submandibular lymph node measuring 1 x 1 cm in diameter, which was tender on palpation and freely mobile.

On intraoral examination (Fig 2) there was missing 36 and 37. There was a firm swelling extending from mesial side of 38 upto 35 region, partially covering the occlusal surface of 35. There was obliteration of buccal and lingual cortical area in 36 and 37 regions. The teeth 33, 34 and 35 proved to be vital in vitality test performed.

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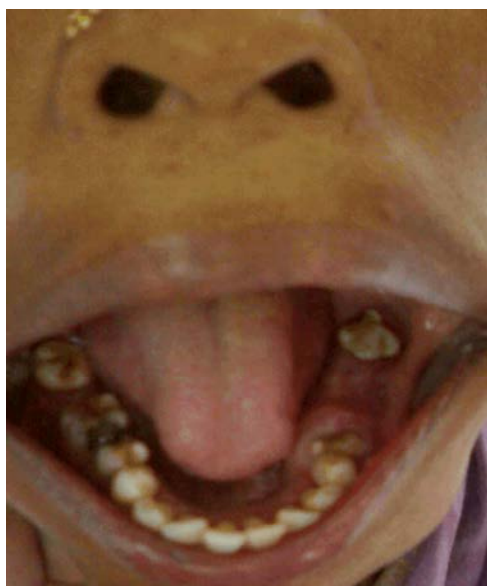


Fig. 2: Intraoral View



Fig. 3: Intraoperative 1



Fig. 4: Intraoperative 2

An orthopantomograph (Fig 7) showed a well defined round unilocular radiolucency measuring around 3cm x 2cm extending from the periapical region of 33 to the 37 region mesiodistally and upto the inferior border of the mandible inferiorly. There were small areas of radiopacities seen inside the radiolucent region.



Fig. 5: Excised Specimen 1

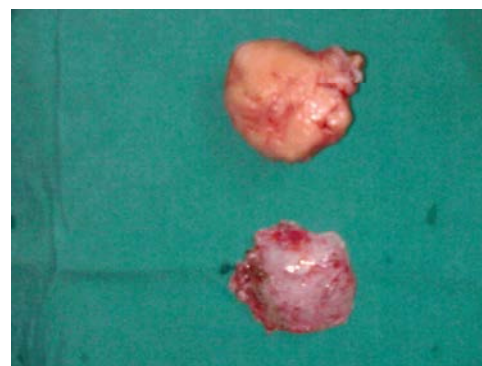


Fig. 6: Excised Specimen 2



Fig. 7: Orthopantomograph

Surgical excision (Fig 3 and 4) under general anesthesia was done, followed by primary closure of the wound with 3-0 silk sutures. Along with tumor mass teeth 33, 34 and 35 were extracted. The gross specimen measured 3 cm x 2cm (Fig 5 and Fig 6). The excised mass was sent to the pathology department for histopathological examination.

Histopathological picture had shown highly cellular fields with some calcified areas. Cellular component was composed of fibroblasts arranged in different patterns. Calcified areas appeared to be composed of cementum like material. The lesion was diagnosed as a cemento-ossifying fibroma.

## DISCUSSION

Branon and Fowler were the first to use the term 'ossifying fibroma' (OF) in place of COF and the recent WHO (2005) edition of the classification of odontogenic neoplasms has replaced the term COF with OF [12].

The cemento-ossifying fibroma is odontogenic in origin, whereas ossifying fibroma is of bony origin. Cemento-ossifying fibroma is a fibro-osseous lesion that arises from the periodontal membrane [13]. It contains multipotential cells that are capable of forming cementum, lamellar bone and fibrous tissue [14, 15].

It is a slow-growing lesion most often seen in women between the third and fourth decades of life. While one-half of all cases are asymptomatic, the growth of the tumor over time may lead to facial asymmetry, with the appearance of a mass causing discomfort or mandibular expansion and the possible displacement of dental roots [3, 16].

Central cemento-ossifying fibromas are more commonly found in the mandible than in the maxilla [9] some reports indicate 90 percent of all cases are located in the mandible [17]. In mandible, it occurs particularly in the premolar-molar region [9, 18].

The neoplasm presents an extremely variable roentgenographic appearance, depending upon its stage of development. MacDonald-Jankowski described three stages of COF, based on the radiographic features; an initial radiolucent stage, then a mixed stage and eventually, a sclerotic appearing stage [19]. COF usually presents as a mixed lesion with well defined borders [2].

However, despite the stage of development, the lesion is always well circumscribed and well demarcated from surrounding bone, in contrast to true fibrous dysplasia. One additional important diagnostic feature of the lesion is its effect upon the inferior border of the mandible when the lesion reaches such a size as to encroach upon it.

The characteristic macroscopic features of this tumor is replacement of normal bone by a benign connective-tissue matrix with varying amounts of mineralized substances, however, there are some variations in microscopic features of this tumor. The microscopic findings mirror the radiographic findings. The more radiolucent lesions are composed of cellular fibrous connective tissue, frequently in a whorled pattern [20]. Collagen fibers are often arranged haphazardly, although a whorled, uniform pattern may be evident. Calcified deposits are noted throughout the fibrous

stroma. The nature of the hard tissue is generally quite variable within a given tumor as well as between lesions. Irregular trabeculae of woven bone or lamellar bone are most consistently noted in these tumors. Additional patterns of calcified material include small, ovoid to globular, basophilic deposits and anastomosing trabeculae of cementum-like material [18]. These variations in hard tissue configuration make no difference to the clinical behaviour of the tumour. However, recognition of these structures is important in establishing its diagnosis [21]. Osteoblast may or may not be evident at the periphery of the bone deposits. A thin outer zone of fibrous connective tissue is usually present, separating the fibro-osseous tissue from the surrounding normal bone [20].

The differential diagnosis of COF includes fibrous dysplasia (FD), a calcifying odontogenic cyst (COC), cementoblastoma, chondrosarcoma and osteosarcoma. FD has a characteristic 'ground glass' appearance. COC and cementoblastomas are associated with the roots of vital permanent teeth. COF is differentiated from sarcomas by presence of well defined margins [8].

Surgical curettage or enucleation with a long term follow-up is the initial treatment of choice for small COFs, whereas surgical resection is indicated for the large lesions. They are characterized by easy shell out from the surrounding bone. Conservative surgery is therefore recommended even if the tumour is large with bowing and erosion of the inferior border of the mandible and radical treatment of the tumour such as an en bloc resection should only be considered if there are recurrences due to its aggressive nature. of 4 Eversole *et al* reported a recurrence rate of 28% following curettage [19].

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