10.5005/jp-journals-10029-1054

CASE REPORT

# Cemento-ossifying Fibroma Involving Mandible

**Mustafa Abdel Bagi, Kamran Bokhari, Mutasim Al Nager, Sulphi Abdul Basheer, Mohammed Abdullah M Assiri**

## ABSTRACT

Cemento-ossifying fibroma (COF) is a rare neoplasm representing one of the benign fibro-osseous lesions of the jaw. This benign mesenchymal odontogenic lesion occurs more frequently in women than in men. Clinically, these tumors are slow growing with a centrifugal growth pattern. Radiologically, COFs present a number of patterns depending on the degree of mineralization. Histologically, these lesions are characterized by fibrous tissue with islands of bone or cementiform calcifications. We present a case of COF involving mandible in a 35-year-old male patient treated by excision.

**Keywords:** Tumor, Fibroma, Benign, Mandible.

**How to cite this article:** Bagi MA, Bokhari K, Al Nager M, Basheer SA, Assiri MAM. Cemento-ossifying Fibroma Involving Mandible. Int J Experiment Dent Sci 2013;2(2):127-129.

**Source of support:** Nil

**Conflict of interest:** None declared

## INTRODUCTION

Cemento-ossifying fibroma (COF) is a rare fibro-osseous lesion that affects the jaw bones.[1] These are benign, well-defined unilocular or multilocular fibro-osseous tumors with a slow progressive enlargement of the affected bone.[2] According to the World Health Organization, these tumors are classified as nonodontogenic tumors derived from the mesenchymal blast cells of the periodontal origin, that are able to form fibrous tissue, cement and bone with a combination of all three elements. The most common location is mandible with predominance in the third and fourth decades of life.[3,4] These lesions are more frequent in women than in men (4:1).[4-6] Trauma or local irritation such as dental calculus, ill-fitting denture appliance and faulty restorations are known to precipitate the development of this lesion.[7]

These lesions are usually asymptomatic and slow growing until growth produces a noticeable swelling and deformity. Displacement of teeth or obliteration of the vestibule may be the only early clinical sign. COFs present variable radiographic appearance depending upon its stage of development and degree of maturation. In the early stages, it may appear as a radiolucent lesion with no evidence of internal radiopacities. As the lesion progresses, there is increasing calcification and appears as an extremely radiopaque mass.[6] Diagnosis is based on correlation of clinical, radiological and histopathological findings. Though some authors advocate conservative surgical management like curettage, surgical excision with a long-term follow-up remains to be the best treatment modality. We present a case of COF involving right mandible in a 35-year-old male patient treated with surgical excision.

## CASE REPORT

A 35-year-old male patient reported to our center complaining of swelling on the right side of the face since 8 months. Detailed dialog history revealed he had been visiting general dental practitioner with the same complaint with no specific diagnosis or treatment rendered. Clinical examination revealed a bony hard swelling on the right side of the face. Intraorally, there was obliteration of the vestibule with significant expansion of the buccal cortex from the right retromolar pad to the first molar on the same side. Orthopantomogram (OPG) (Fig. 1) revealed a mixed radiolucent-radiopaque lesion measuring approximately $4 \times 4$ cm$^2$ in the greatest dimension. The second molar was impacted and displaced to the inferior border of the mandible. Figure 1 shows third molar follicle being displaced upward near the coronoid process. Figure 2 shows computed tomographic (CT) scan with bicortical expansion

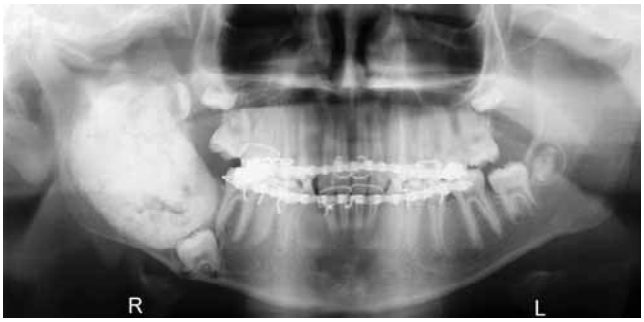


**Fig. 1:** Preoperative OPG

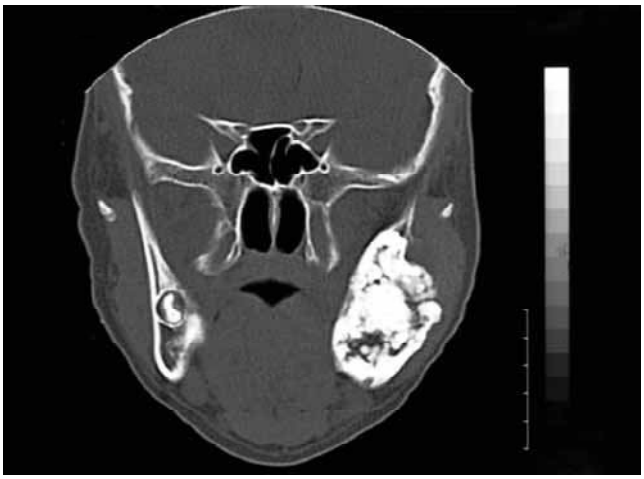

**Fig. 2:** Preoperative CT scan

due to a mixed radiolucent-radiopaque lesion. There were no secondary changes involved clinically or radiographically provisionally ruling out a malignant lesion.

An incisional biopsy was planned under local anesthesia and the report was suggestive of a benign ossifying tumor. Surgical treatment was planned in terms of wide excision with preservation of the condylar head and reconstruction with a titanium reconstruction plate. Figures 3 and 4 shows PA skull and OPG with titanium reconstruction plate placed postoperatively. The histopathological report was evident of COF. Figures 5 and 6 shows osteoid matrix mixed with acellular cementum with numerous reversal lines. Postoperative recovery was uneventful and the patient was discharged after 5 days. Regular follow-up for a period of 3 years showed no evidence of recurrence.

## DISCUSSION

COF is a slow-growing lesion composed of cellular fibroblastic tissue containing basophilic masses of cementum-like tissue.[6] Fibro-osseous lesions of the jaw have been broadly classified by Waldron and Giansanti[8] into three distinct groups: (a) fibrous dysplasia, (b) fibro-osseous lesions arising in the periodontal ligament of which COF is a variant and (c) fibro-osseous neoplasms of uncertain or debatable relationships in which cementoblastoma and osteoblastoma have been categorized. Though the exact origin of COF remains unclear, trauma inducing stimulation of progenitor tissues has been suggested as one of the primary etiological factor.[2] Clinically, the COF presents as a painless, slowly increasing expansion of the jaw.[9] Radiographically, these tumors present a number of patterns depending on their degree of mineralization.[3] Jithendhar Reddy et al[4] have described two basic patterns radiographically based on their degree of mineralization: one characterized by the presence of a unilocular or multilocular radiotransparent image and another showing mixed density due to a variable internal amount of radiopaque material. Sarwar et al[6] have stated that the COF along with central cementifying fibroma and central ossifying fibroma have a centrifugal growth pattern rather than a linear one thus showing expansion equally in all directions. Histologically, COF is composed of fibroblatic tissue containing basophilic masses of cementum-like tissue.[6]

According to Reed, COF can be differentiated from other fibro-osseous lesions based on the presence or absence of

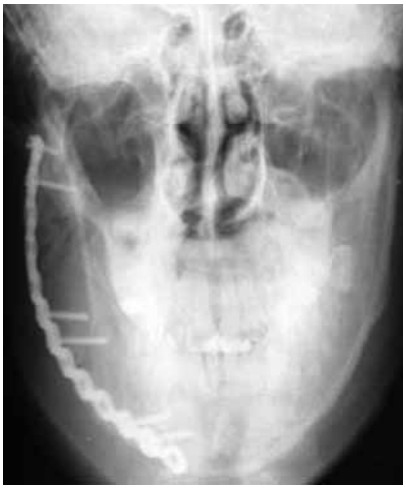

**Fig. 3:** Postoperative PA skull

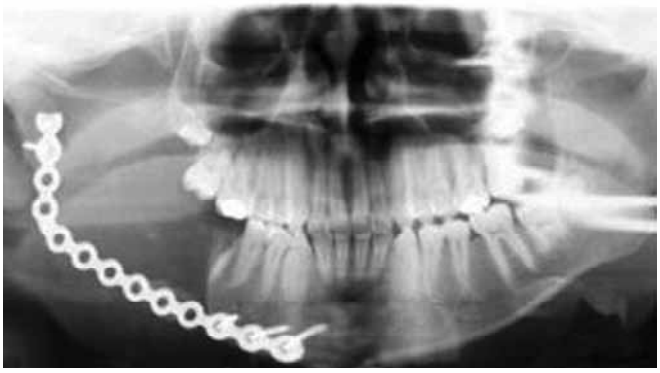

**Fig. 4:** Postoperative OPG

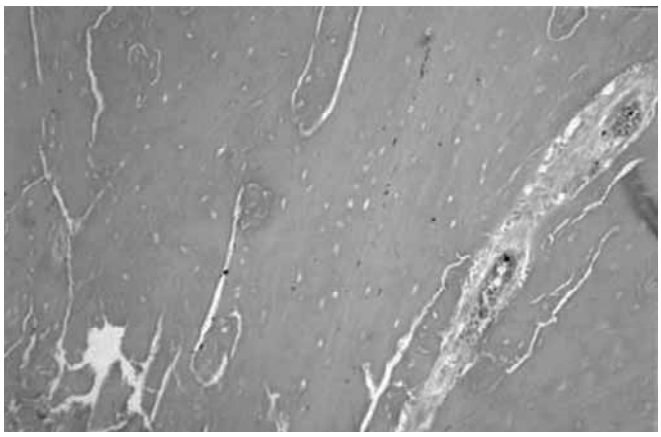

**Fig. 5:** 10× view: Histopathological findings

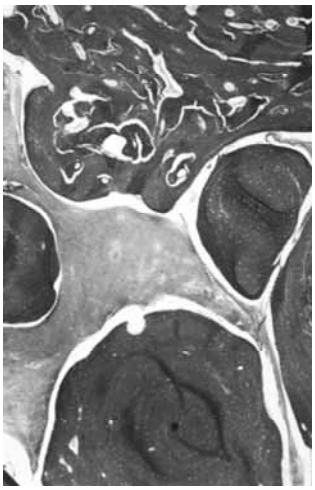

**Fig. 6:** 40× view: Histopathological findings

woven and lamellar bone.[10] Lesions which must be considered in the differential diagnosis of COF include fibrous dysplasia, ossifying fibroma. Fibrous dysplasia is often confused and misdiagnosed for COF. Few of the features which differentiate COF from fibrous dysplasia include: (a) fibrous dysplasia has a classic 'ground glass appearance' which is lacking in COF, (b) COF is well-demarcated and well-circumscribed from the surrounding bone as compared to true fibrous dysplasia, (c) fibrous dysplasia has no lamellar bone (contains arrested woven bone) as compared to COF which has lamellar bone often rimmed by osteoblasts.

Ideal treatment for large COF includes wide surgical excision. A recurrence rate of 28% has been reported by Jithendhar Reddy et al[4] for central COFs. Due to resistive nature of the lesion and postradiation complications, radiotherapy is contraindicated for COF.

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