

CASE REPORT

Cemento-ossifying Fibroma of Mandible

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ABSTRACT

Cemento-ossifying fibroma is a fibro-osseous neoplasm included among the nonodontogenic tumors derived from the mesenchymal blast cells of the periodontal ligament, with a potential to form fibrous tissue, cement, and bone or a combination of such elements. From a radiological perspective, the disorder generally manifests as a well-defined and delimited, unilocular radiotransparency, as a radiotransparent image with central opacifications, or as multilocular transparencies. Cemento-ossifying fibroma is a relatively rare, benign, non-odontogenic tumor of the jaws, regarded as a subdivision of fibro-osseous lesions. The usual age of occurrence is between 20 and 40 years. The female:male ratio is 5:1, usual site being the posterior mandible. Cemento-ossifying fibroma is a benign, asymptomatic lesion of the jaws characterized by the production of well-demarcated bone of slow growth. It typically affects females aged between 20 and 40 years, in the premolar and molar area, causing a painless swelling, of slow, expansile growth. The periodontal ligament contains both bone and cementum.

Keywords: Benign neoplasm, Cemental dysplasia, Cemento-ossifying fibroma, Fibrous tissue.

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INTRODUCTION

Cemento-ossifying fibroma (COF) is a benign mesenchymal odontogenic lesion characterized by well-circumscribed, unilocular radiolucency mixed with radiopacity based on presence of mineralized tissue either cementum or bone histologically.¹

These lesions are categorized under fibro-osseous lesions that include fibrous dysplasia, osseous dysplasia, ossifying fibroma, COF, and cemental dysplasia. Fibro-osseous lesions of the cranial and facial bones are usually benign and tend to grow slowly and have similar histopathological features as fibrous dysplasia, ossifying fibroma, and cemento-ossifying dysplasia.²

CASE REPORT

A 56-year-old male patient reported to the outpatient department with the chief complaint of ulceroproliferative growth over right alveolus and gingivobuccal sulcus since 3 years. The swelling was gradually increasing in size and was associated with pain.

Extraoral examination showed a 5×4 cm solitary, hard, fixed swelling on the right lower third of the facial region, which was mildly tender on palpation. No palpable lymph nodes were seen (Figs 1A and B).

Intraoral examination showed that the ulceroproliferative growth was hard, mildly tender, fixed, 5×4 cm in size, with restricted mouth opening (2 finger). Mild bicortical expansion with bowing of the inferior border of mandible was noted. The swelling was mildly tender, bony hard in consistency with intact overlying mucosa (Fig. 2). There was no paresthesia. Based on these clinical features, a provisional diagnosis of ameloblastoma and differential diagnosis of COF was made. Central giant cell granuloma and odontogenic myxoma were also thought of.

Medical history: h/o homeopathic medication for the same.

Habit history: h/o tobacco chewing since 10 to 15 years.

The laboratory findings like alkaline phosphatase, serum calcium levels, and other routine blood investigations were within normal limits.

Orthopantomograph revealed a radiolucency extending from distal to canine to distal of third molar with intact lower border of mandible (Fig. 3).

Histopathological reports show COF of mandible (Fig. 4).

Axial Computed tomography (CT) showing an expansile lesion (Fig. 5).



Figs 1A and B: Extraoral swelling



Fig. 2: Intraoral ulceroproliferative lesion

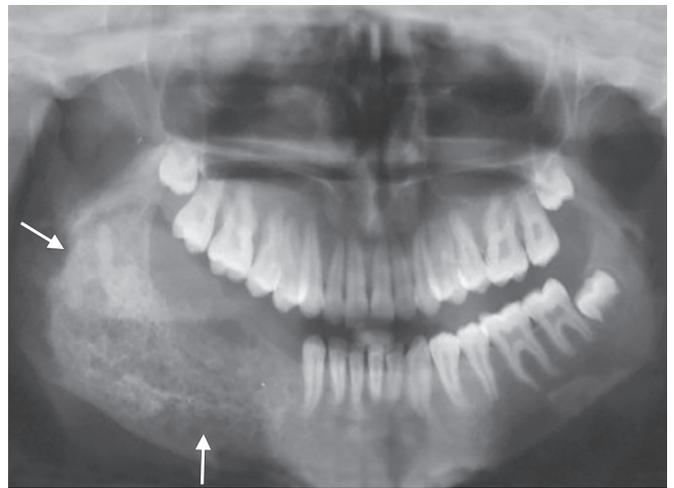


Fig. 3: Orthopantomograph

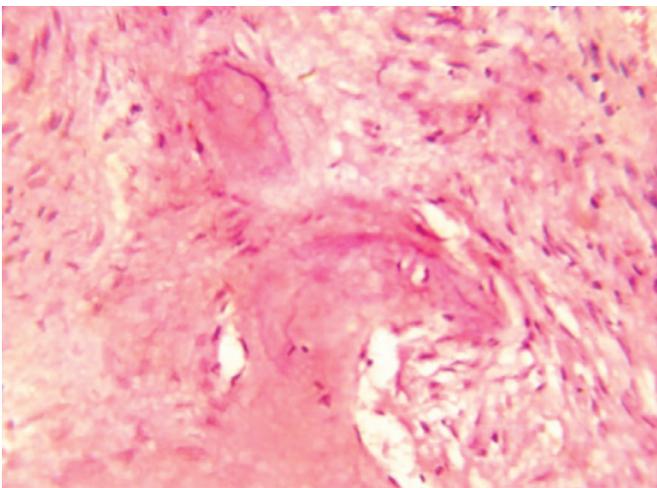


Fig. 4: Diffused areas of calcification and ossification in stroma

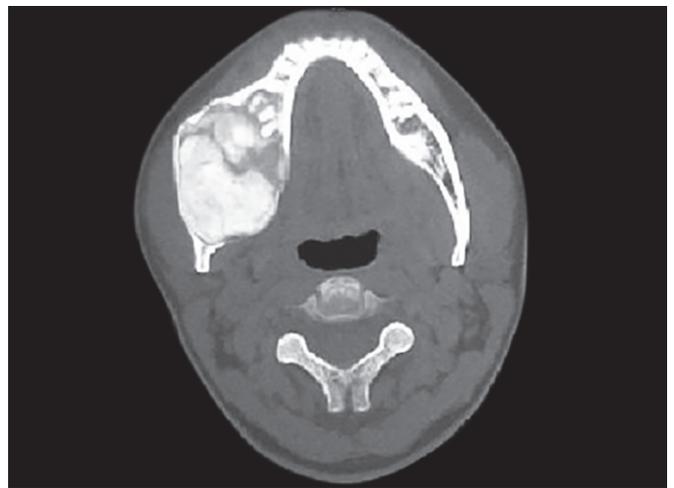


Fig. 5: Axial computed tomography showing an expansile lesion

DISCUSSION

The World Health Organization (WHO) classifies COF as a fibro-osseous neoplasm included among the nonodontogenic tumors derived from the multipotent mesenchymal blast cells of the periodontal origin that

are able to form fibrous tissue, cement and bone, or a combination of such elements.³

Clinically, the tumor tends to present as a slow growing, intrabony mass most often located in the region of the mandibular premolars and molars and in the ascending ramus. The growth is usually asymptomatic,

though there may be a degree of root resorption or displacement of neighboring teeth.⁴

Central COF occurs more frequently in women than men. They arise in the mandible in 62 to 89% of patients, 77% occurring in the premolar region. Most are diagnosed between 20 and 40 years of age. When this tumor arises in children, it has been named the juvenile aggressive COF, which presents at an earlier age and is more aggressive clinically and more vascular at pathologic examination.⁵

Radiologically, these tumors may present a number of patterns depending on their degree of mineralization. Two basic patterns have been defined: 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. In some cases when the lesion is continuously enlarging, there may be associated root resorption and displacement of the roots of the neighboring teeth.^{1,4}

Cytogenetic and karyotyping analysis on COF was performed and it was discovered that three translocations are responsible for it. A close histogenetic relationship exists between the central COF and central ossifying fibroma. The only difference between the two is that, in COF, there is cementum formation along with bony trabeculae, which is not seen in ossifying fibroma.^{5,6}

Cemento-ossifying fibroma is a slow growing lesion composed of cellular fibroblastic tissue containing masses of cementum-like tissue. In addition, varying amounts of bony trabeculae are interspersed within the lesion, giving it its characteristic features.

Uncomplicated cases of COF can be treated by simple enucleation of the lesion with curettage alone. Because the lesions are well circumscribed, they are removed easily from the surrounding tissue. Mono-bloc resection with bone reconstruction is indicated for large size cementifying and ossifying fibromas.⁵

Radiotherapy is contraindicated because of the radioresistance nature of the lesion and postradiation complications.

Prognosis of these lesions is known to be fair. Recurrence of COF has been reported in 28% of patients with mandibular central COFs.

CONCLUSION

Although fibro-osseous lesions are rare, they do occur. Hence a sound knowledge of these lesions is for a clinician to diagnose and differentiate the condition. Tremendous advances have been made in reconstruction and rehabilitation of the patient with such conditions. When surgical treatment is carried out at an early age, COF seldom recurs. Their successful management therefore depends largely on the establishment of accurate clinical diagnosis aided by extensive investigation and careful interpretation of radiographs.

REFERENCES

1. Eversole LR, Leider AS, Nelson K. Ossifying fibroma: a clinicopathologic study of sixty-four cases. *Oral Surg Oral Med Oral Pathol* 1985 Nov;60(5):505-511.
2. MacDonald-Jankowski DS. Fibro-osseous lesions of the face and jaws. *Clin Radiol* 2004 Jan;59(1):11-25.
3. Liu Y, Wang H, You M, Yang Z, Miao J, Shimizutani K, Koseki T. Ossifying fibromas of the jaw bone: 20 cases. *Dentomaxillofac Radiol* 2010 Jan;39(1):57-63.
4. Galdeano-Arenas M, Crespo-Pinilla JI, Alvarez-Otero R, Espeso-Ferrero A, Verrier-Hernandez A. Fibroma cemento-ossificante gingival mandibular: presentación de un caso. *Med Oral* 2004 Mar-Apr;9(2):176-179.
5. Behnam E, Bahram K, Sanaz AL, Hessam R, Amar SY. The incidence of G_sα mutations in fibro-osseous lesions of the jaws using a PCR-SSCP method. *Oral Biosci Med* 2005;2(1):43-45.
6. Kaugars, GE. Benign fibro-osseous lesions. Miles, DA.; Van Dis, M.; Kaugars, GE.; Lovas, JGL., editors. *Oral and maxillofacial radiology: radiologic/pathologic correlations*. Philadelphia (PA): WB Saunders Co; 1991. p. 127-128.