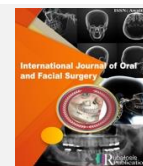




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An unusual association of cemento-ossifying fibroma with an odontoma in mandible: a case report

Pallavi Srivastava¹, Anshul Sawhney³, Shivam Agarwal¹, Vidhi C. Rathi¹, Shishir Dhar*² 

¹Department of Oral and Maxillofacial Surgery, I.T.S Centre for Dental Studies and Research, Ghaziabad, UP, India.

²Department of Dentistry, Government Medical College, Saharanpur, UP, India

³Department of Dentistry, Autonomous State Medical College, Bahraich, UP, India.

ABSTRACT



Cemento-ossifying fibroma are fibro-osseous lesion of jaws, commonly present as a progressively growing lesion, if left untreated can attain an enormous size resulting in deformity. They commonly affect adult females between IIIrd & IVth decades of life, predominantly occurring in premolar/molar region of mandible. Odontomas are benign tumors of odontogenic origin generally characterized by their slow rate of growth. They consist of enamel, dentine, cementum and pulpal tissue and constitute 22% of all odontogenic tumors. We have discussed a case of cemento-ossifying fibroma (COF) involving right mandibular region together with an odontoma present in left mandibular posterior region in a 35year old female patient with its clinical, radiographical, histological and surgical findings.

Keywords: Fibro-osseous lesion; Cemento-ossifying fibroma (COF); cementum, odontogenic tumor; odontoma.

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Corresponding Author

Name: Dr. Shishir Dhar
Email: balboashishir@gmail.com
Contact: +91- 9984375367

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INTRODUCTION

Term, *fibro-osseous lesion*, refers to a diverse process having normal bone architecture being replaced by fibroblasts & collagen fibers containing variable amounts of mineralized material [1]. Nomenclature by Kramer *et al* stated cemento-ossifying fibroma (COF) as an osteogenic neoplasm [2]. These benign fibro-osseous lesions can occur in any part of facial skeleton and skull with over 70% of cases mainly occurring in head and neck region, principally in the jaws [2]. These lesions show greater predisposition to occur in mandible, especially in premolar and molar region [4]. Female predilection is definite, with female-male ratios

as high as 5:1 [5]. It occurs more in the IInd, IIIrd & IVth decades of life [4].

This article reports a case of COF with odontome in posterior part of mandible.



Figure 1: OPG showing a well-defined, mixed-density lesion in the right side of mandible and radiopaque lesion in left side. The inferior cortex is expanded and thinned. The teeth adjacent to the lesion are displaced and resorbed

Case report

A 35 year old female reported to department of oral and maxillofacial surgery at Sardar Patel Post Graduate Institute of Dental & Medical sciences, with chief complaint of swelling at lower left & right back jaw region since 5 months with slow-growing mass increasing in size without any pain. Clinically mild facial asymmetry was evident due to diffuse swelling visible extra orally at body of mandible, measuring about 5x2cms on right side and 3x2cms on left side. Intraoral examination revealed swelling of size about 3x1cm obliterating buccal vestibules of both sides,

extending from 34 to 38 regions & 44 to 48 region of about 4 x 2cm respectively. Left & right mandibular Ist molars were absent, swelling was non-tender, bony hard in consistency on left side and softer on right. No paresthesia was noted. Regional lymph nodes were non palpable. OPG revealed a large, well defined, uniformly dense radiopaque lesion extending from IInd mandibular premolar to mandibular IInd molar on left & on right side well defined radiolucency extending from Ist premolar to IInd molar.

Surgical management

Patient was prepared for surgery under local anaesthesia. On both of affected sites incisions were made, mucoperiosteal flaps were raised, bony windows were made & pathologies were exposed



Figure 2: Showing pathologies exposed by creating a bony window

Total enucleation and thorough curettage was done & specimens were stored in formaline.



Figure 3: Showing enucleated/excised specimens

Copious irrigation was done with betadine & saline. Flaps were repositioned & sutured with 3-0 mersilk. Both specimens were sent for histopathological examinations.

Right side histological findings revealed 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. Lesion was diagnosed as cemento-ossifying fibroma. On left side well-defined mass was composed of tooth like structures exhibiting an irregular arrangement of enamel matrix, dentin, cementum, & pulpal tissue. The diagnosis was made of a compound odontoma. Regular follow-ups till 2 months after surgery revealed decrease in the size of swelling with no post-operative complications.

RESULTS & DISCUSSION

Cemento-ossifying fibroma is a benign fibro-osseous tumor^[2] while odontomas are classified as benign,

mixed, calcified odontogenic tumours^[3]. WHO defined COF as demarcated or rarely encapsulated neoplasm consisting of fibrous tissue containing varying amounts of mineralized material (bone and/or cementum)^[6]. WHO classified cemento-ossifying fibroma as a fibro-osseous neoplasm, of non-odontogenic tumor type, which are derived from the mesenchymal blast cells of the periodontal ligament, and have a potential to form fibrous tissue, cement and bone, or a combination of such elements. The hybrid name central cemento-ossifying fibroma are those tumors which can show a spectrum of fibro-osseous lesions, ranging from those with only deposition of cementum to those with only deposition of bone, and arising from the periodontal ligament^[2]. They classically exhibit calcified material and a fibroblastic stroma. The calcified material contains bony trabeculae, osteoblastic rimming, and occasional osteoblasts with interspersed cementum like material^[4]. They are also described as “droplets of cementum” appearance^[11]. Most of them are solitary and rarely occur in a multiple form. The growth of tumor over time may lead to facial asymmetry, mass may cause mandibular expansion & possible displacement of teeth roots^[2]. Periodontal membrane, fibrous connective tissue layer surrounding all tooth roots is considered to be origin of COF.

The etiology of odontoma is unknown, yet cases have related odontoma to local trauma infection and genetics. It arises from an exuberant proliferation of the dental lamina or its remnants and is termed laminar odontome or forms as a result of multiple schizodontia i.e. a locally conditioned hyperactivity of dental lamina. Compound odontomas are twice as commonly observed as the complex and commonly lie in the maxillary incisor-canine region^[3]. The odontoma presents as a well-defined radiopacity situated in bone, but with a density that is greater than bone and equal to or greater than that of a tooth. A radiolucent halo, typically surrounded by a thin sclerotic line, surrounds the radiopacity. The radiolucent zone is the connective tissue capsule of a normal tooth follicle. The developmental stages can be identified based on radiologic features and the degree of calcification of the lesion at the time of diagnosis^[7,8]. The first stage is characterized by radiolucency due to the absence of dental tissue calcification, the second or intermediate stage shows partial calcification and the third or classically radiopaque stage exhibits predominant tissue calcification with the surrounding radiolucent halo^[9,10].

In our case, remaining periodontal membrane might have lead to the growth of tumour after tooth extraction. Lesser resistance may be because of extraction of the second molar tooth causing upward growth and extraosseous mass formation^[5].

First choice of treatment for COF is enucleation or curettage of lesion. If it reoccurs following simple curettage, a second conservative excision is mandatory. The odontoma presents as a well-defined radiopacity

situated in bone, but with a density that is greater than bone and equal to or greater than that of a tooth. Our case had a small bony component and a large extraosseous component on right side. The small bony component was located at the root of the extracted right lower second molar tooth and extended superiorly and medially with cortical destruction.

CONCLUSION

COF occurs more frequently in female patients in second to fourth decades of life. The most commonly affected site is mandible, especially the molar region. Buccal or lingual cortical bone swelling or expansion is most common clinical presentation. The radiographic features of COF frequently shows a well-defined, mixed lesion. Most COFs can be treated by conservative surgical enucleation without recurrence.

In our study on left side a compound odontoma in the mandibular IIIrd molar region is reported with cemento-ossifying fibroma on right side making it an unusual appearance.

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