

Cemento Ossifying Fibroma: A Pathological Entity

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ABSTRACT

Cemento-ossifying fibroma is a controversial term because of its terminology and its diagnosis. Cemento-ossifying fibroma is odontogenic in origin although it is a central neoplasm of bone and involving the periodontium. Most Cemento-ossifying fibromas exhibit slow and expansile growth in the jaws and are benign in origin. The lesion is encapsulated with mixed radiodensities. The Cemento-ossifying fibroma is characterized by replaced of normal bone by fibrous tissue and varying amounts of osteoid and cementum like material. The definitive diagnosis of such lesions require clinical, radiological and histopathological observations. The treatment of choice is surgical resection and recurrence in uncommon. We report a case of Cemento ossifying fibroma in left mandibular premolar region and discuss how to confirm the diagnosis.

Keywords: Cementossifying fibroma; Periodontium; Cementum

INTRODUCTION

Cemento-Ossifying Fibroma (COF) is a benign tumor of the oral cavity, which consists of highly cellular, fibrous tissue with varying amounts of osteoid and cementum like material, which resembles the bone, the cementum or both. It is most commonly seen between the third and fourth decades of life and is more frequent in women than in men [1,2].

Periodontal membrane is a layer of fibrous connective tissue surrounding the roots of teeth. It contains multipotent cells that are capable of forming cementum, bone and fibrous tissue [2]. Radiographically, they appear as well-defined unilocular or multilocular intraosseous masses. The lesion is invariably encapsulated and of mixed radiolucent densities [3].

These benign fibrous lesions can occur in any part of the facial skeleton though 70% of the lesions in head and neck region is seen the Mandible [4]. There are many fibro-osseous and odontogenic entities which mimic it clinically, macroscopically and radiologically. Although the line of treatment for most of these lesions is similar, it is important to differentiate them histologically as they have distinct features [5].

These lesions grow slowly and is unnoticed by the patient until swelling of the face becomes clearly visible, in a few cases, the tumour may grow rapidly and cause symptoms [6]. Although central cemento-ossifying fibromas of the mandible are common, it is more frequent in women than in men. This aim of this article is to report a case of cemento ossifying fibroma in a male patient and how to distinguish the lesion from other fibrous lesions through clinical, radiological and histopathological examination.

CASE PRESENTATION

We report a case of a South India man with swelling of the left mandibular region since 8 months reported to our hospital (Figure 1). We advised patient Orthopantomogram, and revealed a radiolucent multilocular sclerotic lesion expanding from regions 33 to 36. The patient was advised CT scan, revealed focal mildly expansile sclerotic lesion 8.5 × 8.2 mm seen in relation to the left edentulous first premolar teeth location. Rest of the mandible and maxillary alveolar process appear normal. Bilateral parotid glands and submandibular glands are normal. No significant lymph nodes seen visualized in the neck, bilateral nasal bones, crista galli and bilateral cribriform plates are intact, bilateral orbits and its contents are normal. Zygoma and

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Zygomatic arch are normal, Bilateral temporomandibular joint functions are normal, no history of dislocation. Visualised skull bones and vertebrae are normal, the adjacent teeth tested positive for vitality. Patient experienced no pain because of the swelling. Based on CT scan report midly expansile, sclerotic periapical lesion in relation to left edentulous first premolar region was made (Figure 2). Provisional diagnosis of cemento osseous dysplasia, odontoma, condensing osteitis was given after radiological examination.



Figure 1: Case report of swelling of the left mandibular region.



Figure 2: CT scan report of lesions.

The general dentist at the hospital referred the case to Oral pathologist and biopsy was done. The soft tissue specimen was hard in consistency, the specimen was greyish brown in colour measuring $0.5 \times 0.5 \times 0.2$ cms. The histopathological examination revealed stratified squamous epithelium with underlying connective tissue composed of bundles of collagen fibres, basophilic masses of cementum like material is seen focally there is ossification in the cementum areas lined by osteoblasts. From the histopathological examination final diagnosis was given Cemento ossifying fibroma of the mandible (Figure 3). Complete surgical excision of the tumour was done by oral and maxillofacial surgeon (Figure 4).

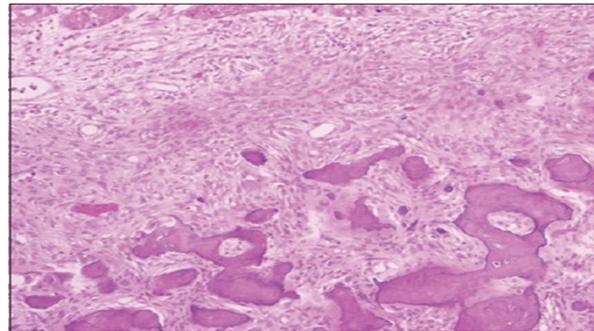


Figure 3: Cemento ossifying fibroma of the mandible.



Figure 4: Complete surgical excision of the tumour.

RESULTS AND DISCUSSION

These benign fibro-osseous lesions can arise from any part of the facial skeleton and skull with over 70% of cases arising in the head and the neck region and principally in the jaws. Various classifications were proposed to classify these lesions, The origin of cemento-ossifying fibroma is not clearly understood, in most of cases reported in literature have found to have history of trauma which is not seen in our case. Few authors have considered that these lesions arose either by reactive or developmental origin, from the periodontal membrane which contains multi-potential cells, that under certain pathologic conditions, are capable of producing tumours which are composed of cementum, lamellar bone or fibrous tissue [7].

The World Health Organization classifies cemento-ossifying fibroma as a fibro-osseous neoplasm included among the non-odontogenic 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. However, there is controversy over such an origin, since tumors of similar histology have been reported in bone lacking periodontal ligament and not located in the maxillary region, such as ethmoid bone, frontal bone or even long bones of the body [8].

This emphasizes the need for histopathological examination of biopsy specimen for an accurate diagnosis because of difficulty in diagnosing COF based only on clinical observations. Treatment of COF consists of removal of etiological factors, scaling adjacent teeth, and aggressive surgical excision. Some authors have suggested excision of involved periodontal ligament and periosteum to minimize the possibility of recurrence of incompletely removed lesions [9].

Today cemento-ossifying fibroma is widely accepted because both osseous and cemental tissues are seen commonly in a single lesion. The people are affected mostly are females when they reach their third and fourth decades of life, although in the present case middle aged is affected. The histopathology of juvenile ossifying fibroma often show psammomatoid pattern present as concentric lamellae. Inadequate surgical treatment may cause recurrence of the lesion, although recurrence is rare therefore proper diagnosis and treatment plan are required to achieve good results in the management of this tumour [10].

CONCLUSION

The diagnosis of Cemento ossifying fibroma is a very difficult process as it requires clinical, radiological and histopathological examinations to rule out other fibrous lesions and odontogenic tumors. Surgical resection of such tumors will provide good prognosis and aesthetic results.

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