Case Report

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RECURRENCE OF CEMENTO-OSSIFYING FIBROMA OF THE MANDIBLE: A CASE REPORT

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ABSTRACT:

Background: The cemento-ossifying fibroma is classified as a fibro-osseous lesion of the jaws. It commonly presents as a progressively slow growing lesion that can attain an enormous size with resultant deformity if left untreated. The cement-ossifying fibroma is a central neoplasm of bone as well as the periodontium which has caused considerable controversy because of terminology and criteria for diagnosis. The aim of the present study is to report a case of recurrence of cement-ossifying fibroma involving the left mandibular body region in a 23-year-old patient.

Methods:. The definitive plan for the management was made which included RCT of non-vital teeth followed by complete excision of the lesion along with apicoectomy of involved teeth.

Results: At present, the patient is on a regular follow-up examination. Two months post-surgery, the overlying soft tissue was healthy in appearance. At this time, the lesion showed signs of regression and patient did not have any fresh complaints.

Conclusions:. Although cement- ossifying fibroma is an uncommon clinical entity, its ability to cause facial deformity and high recurrence rate mean that it is quite important to diagnose it early, apply the appropriate treatment and, especially, follow-up the patient over the long-term

Keywords: Cemento-Ossifying fibroma, Ossifying fibroma, benign fibro- osseous lesion

INTRODUCTION

Cemento-ossifying fibroma is a fibro-osseous lesion that arises from the periodontal membrane. [(1)] The periodontal membrane is a layer of fibrous connective tissue surrounding the roots. It contains multipotential cells capable of forming cementum, lamellar bone, and fibrous tissue. [(2,3)] Although cental cemento-ossifying fibromas are common in mandible; in maxilla are unusual tumors [(4)] Slow growth and lack of symptoms are the cardinal features, and larger lesions involve expansion of buccal and lingual plates.

Clinically, these tumors manifest as a slow growing intrabony mass that is normally well delimited and asymptomatic, though over time the lesion may be large enough to cause facial deformation.[(5)]

Radiologically, cement-ossifying fibroma shows a number of patterns depending on the degree of mineralization of the lesion. Initially, it appears as a radiolucent lesion with no evidence of opacification. As the tumour matures, there is increasing

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calcification, so that the radiolucent area becomes flecked with opacities until, ultimately the lesion appear as an extremely radiopaque mass. Displacement of adjacent teeth is common. One additional important diagnostic feature is the centrifugal growth pattern rather than a linear one, therefore the lesions grow by expansion equally in all direction and present as a round tumor mass.

Histologically, these tumors are composed of well vascularized fibrocellular tissue with the capacity to form immature bone trabeculae and cementoid formations, though these findings are not specific to the lesion and can also be seen in fibrous dysplasias.[6] A definitive diagnosis, therefore, requires correlation of the clinical, radiological and histological findings.[7] Treatment comprises surgical excision of the lesion with enucleation and curettage of the bone bed. (8) Although recurrence is rare, we are presenting a case of recurrence of cemento- ossifying fibroma of the mandible in order to elaborate its causes and treatment.

CASE DETAIL:

A 23 old male patient presented with a chief complaint of swelling in the left lower back region of the jaw since two months. (Fig.1) History of present illness revealed that the swelling was initially small and gradually increased in size and was not associated with pain. The patient did not give any history of trauma, pain, fever, bleeding, discharge, and paresthesia associated with it. He had undergone excision for the same lesion four years back along with reconstruction of the lower border of left mandible with mini plates as shown in the panoramic view .(Fig. 1) There was no significant medical history.

Examination

Extra-oral examination revealed a facial asymmetry in the lower 1/3rd of the face on the left mandibular body region (Fig.2) Left submandibular lymph nodes were palpable and non-tender.

Intra-oral examination of left side revealed a diffuse spheroidal swelling measuring 1x1.5cm extending from 34 to 36 along with obliteration of left buccal vestibule because of the expansion of underlying buccal cortical bone. (Fig. 3) The swelling was non-tender, bony hard in consistency, with intact overlying mucosa. The texture of the overlying mucosa was smooth, and there was no compressibility and depressibility. Radiographic investigations like IOPA w.r.t 35 and 36 showed a radiolucent lesion involving apex along roots of 35,36. 35 was non-vital. Roots of associated teeth were displaced. (Fig. 4)Routine blood examination was done and the results obtained were Hb 14.1gm%,TLC 6800/cmm, differential count consist of neutrophils 50%, lymphocytes 40%,eosinophils 6%,basophils 0% and monocytes 4% in blood picture. Bleeding time and clotting times were 2.50 and 6.56 min respectively.

Management: Preoperative antibiotics (amoxicillin 625mg TDS, metrogyl 400mg TDS) were started one day before the

procedure and excision were planned. The definitive plan for the management was made which included RCT of non-vital teeth followed by complete excision of the lesion along with apicoectomy of involved teeth. The patient was prescribed antibiotics and analgesics for next five days. The patient was advised to maintain good oral hygiene and mouthwash was prescribed. Surgical procedure involved, crevicular incision starting from midline and extending up to the distal surface of the second molar, with the anterior releasing incision. After elevating the mucoperiosteal flap, burring was done around the expanded lesion with No. 8 round bur. After the lesion is freed from surrounding bone, it was pulled out with the help of Ellis tissue holding forceps and straight elevator and the mass of COF shells out from the bone. The defect was rinsed with saline and povidone-iodine solution repeatedly. After thorough rinsing with saline and povidone-iodine solution, the defect was packed with the iodoform gauze, and the wound was closed using 3-0 mersilk sutures. The iodoform gauze packing was completely removed on the 5th postoperative day, and the sutures were removed on 7th postoperative day. Antibiotic and anti-inflammatory drug regime was continued for the next one week. At present, the patient is on a regular follow-up examination. Two months post-surgery, the overlying soft tissue was healthy in appearance. At this time, the lesion showed signs of regression and patient did not have any fresh complaints.

DISCUSSION

Fibro-osseous lesions of the cranial and facial bones are usually benign and tend to grow slowly and have similar histopathological features with fibrous dysplasia, ossifying fibroma and cement-ossifying dysplasia.

COF includes those lesions formerly designated as either ossifying fibroma or cementifying fibroma. The pathological nature of COF is not yet clearly understood. It is included under a neoplastic group of fibro-osseous lesions which are thought to arise from periodontal ligament, that commonly affect adults between the third and fourth decade of life with a definite female predilection, with female to male ratio as high as 5:1.1.

Radiographically, they appear as well-defined unilocular or multilocular intra-osseous masses, commonly in the premolar/molar region and are composed of cementum, bone, and fibrous tissue. Gollin et al. 1992 performed cytogenic and karyotyping analysis on COF and discovered three translocations are responsible for it. In this research, G protein mutation, located on chromosome number 13 was to see if this mutation has a diagnostic value for three types of fibro-osseous lesions(FD, COF, FCOD). The pathologic nature of COF is not yet clearly understood. A close histogenetic relationship exists between the central cement-ossifying fibroma and the central ossifying fibroma. The only difference between the two is that, in cement-ossifying fibroma, there is

cementum formation along with bony trabeculae, this cementum is not seen in ossifying fibroma.[9] Cemento-ossifying fibroma is a slow growing lesion composed of cellular fibroblastic tissue containing masses of cementum-like tissue. Also, varying amounts of bony trabeculae are interspersed within the lesion, giving it its characteristics features.[10] In uncomplicated cases, fibrous dysplasia contains no lamellar bone but, rather, has arrested woven bone. On the other hand, cement-ossifying fibroma contains woven bone and are often rimmed by osteoclasts that have laid down layers of lamellar bone.[11] Teeth in association with the lesion retain their vitality and, as a rule; there is no associated root resorption.[12] When this tumor arises in children, it has been named the juvenile aggressive cement-ossifying fibroma, which presents at an earlier age and is more aggressive clinically and more vascular at pathological examination with capsule composed of metaplastic bone, fibrous tissue and varying amounts of osteoid. Surgical treatment of COF is achieved by enucleation for small sized ossifying fibroma and mono-bloc resection with bone reconstruction for large sized cementifying and ossifying fibromas.[13] Prognosis of these lesions is known to be fair. Radiotherapy is contraindicated because of its radioresistance and post-radiation complications.[14] Recurrence of COF has been reported in as many as 28% of patients with mandibular central cemento-ossifying fibromas. The recurrence rate of maxillary cement-ossifying fibromas is unknown but is likely to be higher because of the greater difficulty of their surgical removal and large size at the time of presentation.[10,15]

CONCLUSION

Although cement- ossifying fibroma is an uncommon clinical entity, its ability to cause facial deformity and high recurrence rate mean that it is quite important to diagnose it early, apply the appropriate treatment and, especially, follow-up the patient over the long-term.

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FIGURES:

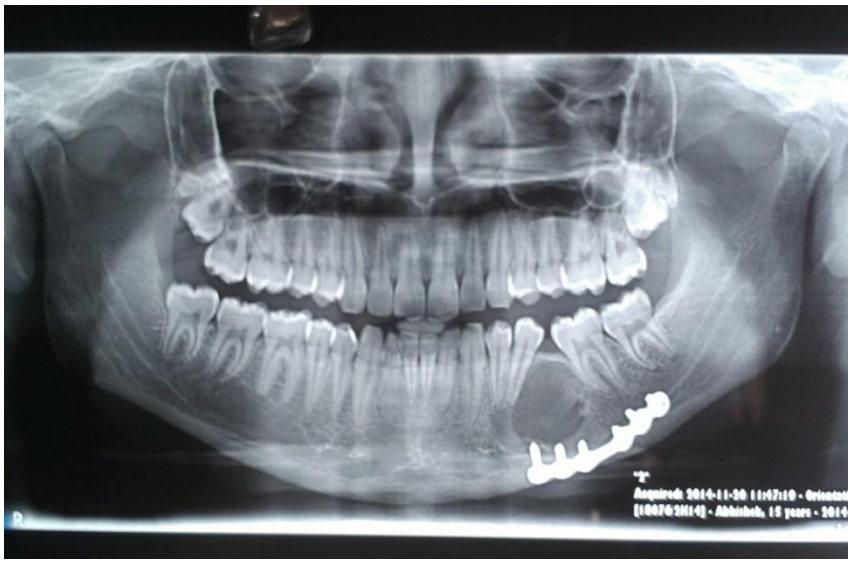

Fig.1: Panoramic view showing enucleation and reconstruction four years back

Fig. 2 Front view showing deformity w.r.t left mandibular body region

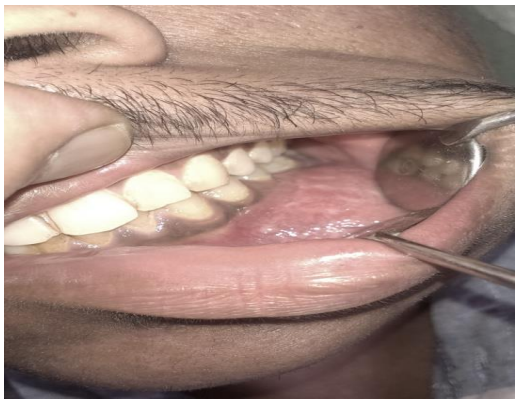

Fig.3. Intra-oral view showing buccal vestibular obliteration

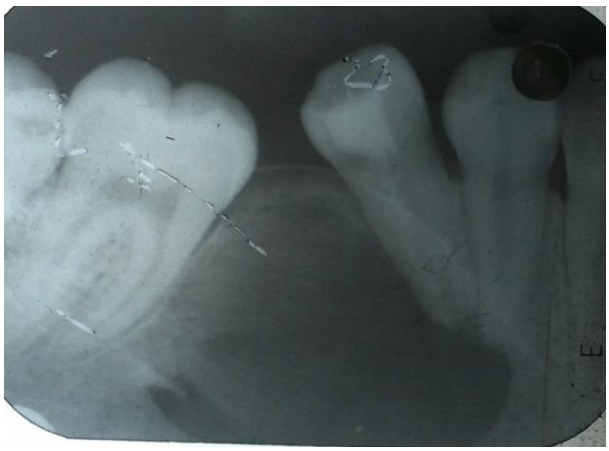

Fig. 4. IOPA showing the lesion and displaced roots

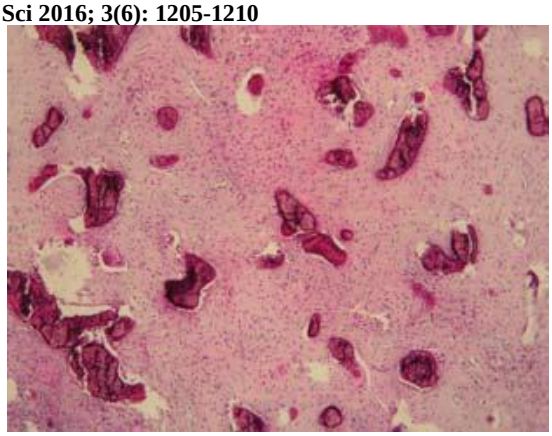

Fig.5. Histological view showing a fibrous stroma with calcifications and osteoid material