CASE REPORT

Cemento-ossifying Fibroma of Mandible: A Case Report with Review of Literature

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ABSTRACT

Cemento-osseous dysplasia (COD) is a non-neoplastic process usually confined to the tooth-bearing areas of the jaws or edentulous alveolar processes. It is mostly seen in women during the third and fourth decades of life. The mandible is the most common location in 70% of cases in the premolar-molar region. This case report presents a case of cemento-ossifying fibroma with clinical features and radiographic features in a 23-year-old female patient.

Keywords: Cementum, mandible, ossifying, radiopaque.

INTRODUCTION

Ossifying fibroma is a uncommon benign fibro-osseous (FO) neoplasm lesion rarely seen in the jaws and craniofacial bones of head and neck region. The lesions of the jaw usually arise in the tooth-bearing regions (1). Cemento-ossifying fibroma (COF) is a slow-growing lesion most commonly seen in women during the third and fourth decades of life. Most of the cases are asymptomatic. The lesion over the time can cause facial asymmetry causing discomfort to the patient (2). Here, we present a case of a female patient with COF that caused facial asymmetry.

CASE REPORT

A 23-year-old female patient reported to the Department of Oral Medicine and Radiology with the complaint of swelling in left back region of the jaw for 1 month. The patient gave a history of trauma one month prior to presentation. The patient noticed the swelling 2–3 days later which was growing till the patient reported to us. The swelling was asymptomatic, and the patient visited a local physician who referred the patient to our institute. On extra oral examination, a diffuse swelling was noted in the left back region (Fig. 1). The overlying skin appeared normal. On intra-oral examination, diffuse swelling was noted on the left buccal vestibule with respect to 34, 35 and 36 regions measuring approximately 3 × 2 cm in size obliterating the buccal vestibule (Fig. 2). There was no obliteration of the lingual vestibule. On palpation, the swelling was tender and firm in consistency. As a part of chair side investigations. Electric pulp testing was done that revealed a delayed response of teeth in the third quadrant. Fine needle aspiration of the swelling was performed which yielded a negative aspirate. Based on the history and clinical examination, a provisional diagnosis of traumatic cyst was made. The differential diagnosis considered were ameloblastoma and FO lesion of the left side of the mandible. Orthopantomogram revealed a mixed radiolucent-radiopaque lesion in the left premolar molar region measuring approximately 6 × 5 cm in size extending posteriorly up to the mesial root of 37, superiorly up to the alveolar ridge and inferiorly up to the inferior border of mandible (Fig. 3). The lesion had displaced the roots of 35 and 36. The anterior extent of the lesion could not be made out from the orthopantomogram, and hence an anterior lateral oblique of left side of mandible was made that revealed the anterior extent till the periapex of 34 (Fig. 4). The internal contents of the lesion showed diffuse radiopacities in the

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superior portion of the radiolucency attached to the periapex of 36. A submento vertex was radiograph that revealed expansion of the buccal and the lingual plate on the left side when compared to the right side of the mandible. Based on the radiological investigation, a radiographic diagnosis of COF was considered. A bone biopsy raising a mucoperiosteal flap was then planned under local anaesthesia. The entire lesion was removed along with thorough curettage through the bone window created during osteotomy (Fig. 5). The entire lesion was removed through the bony window created (Fig. 6). The specimen was then sent for histopathological examination. The histopathological report revealed the presence of cellular fibrous stroma containing basophilic calcifications with concentric and acellular mineralization at the centre (cementoid type) and other areas presenting recently formed osteoid with peripheral osteoblasts distributed throughout the stroma. There was no atypias or mitotic figures found, and the definitive diagnosis of COF was given (Fig. 7). The patient was kept on a long-term follow-up, and no recurrence of the lesion was noted.

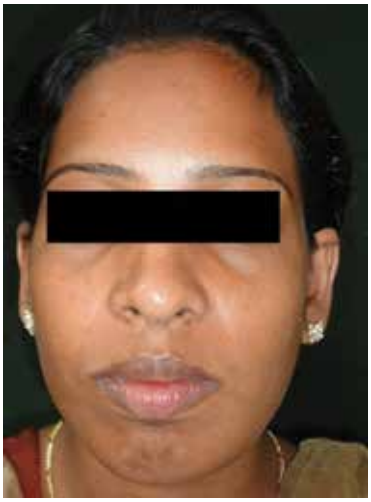

Fig. 1: Clinical photograph showing facial asymmetry.

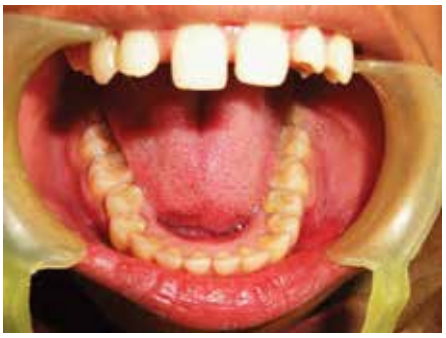

Fig. 2: Intra-oral photograph showing obliteration of buccal vestibule.

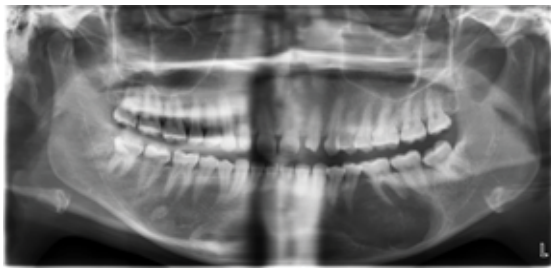

Fig. 3: Orthopantomogram showing the mixed radiolucent radiopaque lesion.

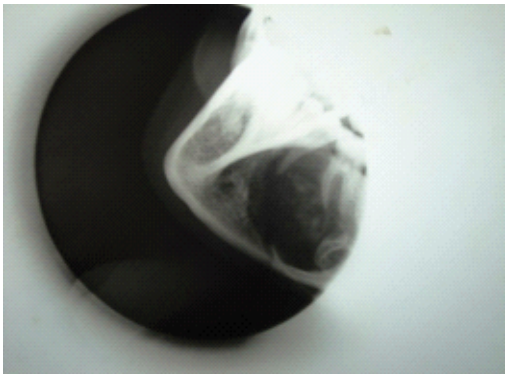

Fig. 4: Lateral oblique of mandible showing anterior extent of lesion.

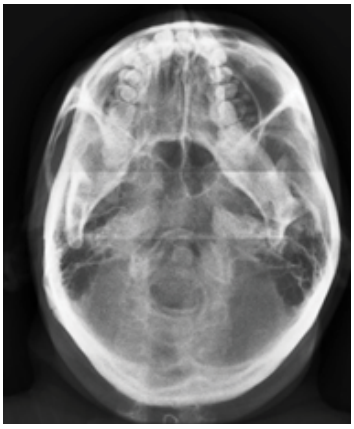

Fig. 5: Submento-vertex view showing expansion of buccal and lingual plates.

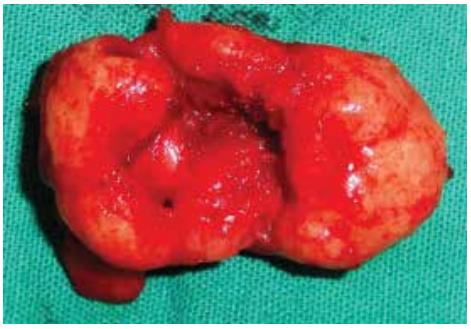

Fig. 6: Gross specimen of the lesion.

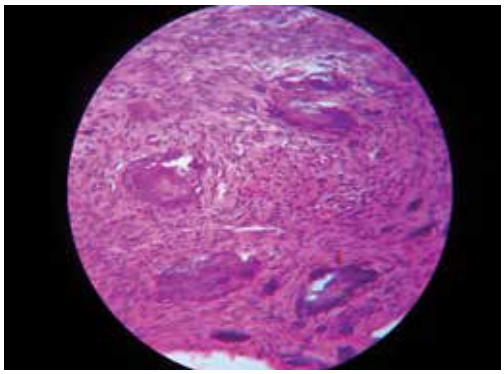

Fig. 7: Photomicrograph showing a cellular fibrous stroma with calcifications and osteoid material within the fibrous stroma (H and E, ×40).

DISCUSSION

Fibro-osseous lesions are characterized by replacement of normal bone architecture by collagen fibres and fibroblasts that contain varying amounts of mineralized substances, which may be bony or cementum like in appearance. Fibro-osseous lesions comprise fibrous dysplasia, periapical cemento-osseous dysplasia, focal cemento-osseous dysplasia, florid cemento-osseous dysplasia, and COF (3). Cemento-ossifying fibroma is a benign FO maxillary tumour belonging to the same category as fibrous dysplasia and cement-ossifying dysplasia (4). Cemento-ossifying fibroma is defined by WHO as a demarcated or rarely encapsulated neoplasm consisting of fibrous tissue containing varying amounts of mineralized material (bone and/or cementum) (5). In 1872, Menzel gave the first description of COF as a variant of ossifying fibroma (3). Most of the cases are asymptomatic and the growth of the lesion over the time may lead to facial asymmetry due to mandibular expansion and possible displacement of dental roots (6, 7) as seen in our case. Cemento-ossifying fibroma is a disorder of unknown aetiology. Bernier hypothesized that COF in the bone might be caused by an irritant stimulus which may activate the production of new tissue from the remaining periodontal membranes (3). The periodontal membrane contains multipotential cells that are capable of forming cementum, lamellar bone and fibrous tissue. The current theories regarding their origin include traumatic and developmental causes (8). In our case also, the patient gave a history of trauma. Cemento-ossifying fibroma is more commonly seen in the young females. There is a marked female:male ratio of 2:1. The premolar–molar region of mandible is more commonly involved than maxilla. The lesion is generally asymptomatic until the growth produces a noticeable swelling and mild deformity as seen in our case. Radiologically, these tumours may present a number of patterns depending on their degree of mineralization (9). Radiographically, it is characterized by three stages: initial or early, mixed and mature stage. The case described here falls under the mixed stage due to the radiolucency and radiopacity seen in the lesion as in our case. The margins of the lesion are relatively well defined and may cause resorption or displacement of the roots of the teeth (9, 10). Displacement of roots was seen in our case. The differential diagnosis that can be closely considered is fibrous dysplasia since the morphology is similar (10). A careful clinical and radiological examination will aid in the definitive diagnosis. Other conditions to be taken into account are lesions appearing as a mixed periapical image such as calcifying odontogenic cysts or cementoblastomas, which are seen to be associated with the roots of vital permanent teeth. Due to the well-defined margins, surgical removal and curettage is the treatment of choice as was done in our case. The prognosis is usually good as recurrences are not frequent.

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