

CEMENTO-OSSIFYING FIBROMA IN AN ADOLESCENT PATIENT: A RARE CASE REPORT

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ABSTRACT:

Ossifying fibroma is a type of fibro-osseous lesion which can affect both the mandible and the maxilla, particularly the mandible. This bone tumour consists of highly cellular, fibrous tissue that contains varying amounts of calcified tissue resembling bone, cementum or both. This central neoplasm of bone as well as periodontium has caused considerable controversy because of confusion regarding terminology and the criteria for its diagnosis. We report a case of cemento-ossifying fibroma with clinical, radiographic and histological features involving the left mandible in a 17 year old male patient with review of literature.

Key words: Cemento-ossifying fibroma, fibro osseous lesion, odontogenic tumour

Key Messages: It is important to know the tumor behavior when one is planning a proper surgical treatment in order to eliminate the tumor completely, avoid tumor recurrence and to improve the patient's cosmetic and functional problems. And it should not be confused with other fibro-osseous lesion, as their management varies from none to surgical enucleation to complete resection.

INTRODUCTION:

Central ossifying fibroma (COF) is a jawbone fibro-osseous lesion with the common microscopic features of trabeculae or spherules of bone or cementum-like material in a cellular fibrous connective tissue stroma [1]. The term Ossifying Fibroma is used if the predominant component is bone, while Cementifying Fibroma is defined by the presence of curvilinear trabecular structures or spherical calcifications. The lesions characterized by the presence of bone and cementum are referred to as Cemento Ossifying Fibroma [2].

This case is reported distinctive as the occurrence of Cemento Ossifying Fibroma in a 17 years old male patient is found to rare.

CASE DETAIL:

A 17 years old male patient came with the painless swelling on the left side of the mandible since 6 months with no significant medical and dental history. Extraorally diffused swelling present on the left border of the mandible. The swelling extended from the parasymphiseal region to the ramus of the mandible and 2.5 cm from the ala

tragus line to the inferior border of the mandible superioro inferiorly.

Intra-oral examination revealed an asymptomatic swelling extending antero posteriorly from distal of 35 to the mesial of 37 (fig.1). Mild bicortical expansion was present with bowing of the inferior border of the mandible and no mucosal changes. On palpation the swelling was non tender, bony hard in consistency with no fluctuations and paresthesia. Orthopantomograph revealed a mixed radiolucent radiopaque lesion of approximately size of 5x2 cm, well defined margins with sclerotic border, extending from distal surface of 33 to 37 (fig2a.). On the centre of the lesion, some amount of calcified material can be seen, which is causing the bowing of inferior border of the mandible and displacement of 35, 37 can be seen.

On cross-sectional mandible occlusal view, there was a buccal and lingual cortex expansion in 35, 36 and 37 region. Buccal cortex appears to be breach but lingual cortex were intact (fig2b.).

CT scan revealed multilocular expansile lesion on left side of the mandible, heterodense mass was present within the lesion (fig2c.). There was a breach on buccal cortex and thinning of lingual cortex. Routine hematological and urine investigations were within normal limits.

Based on clinical features and typical radiographic features, provisional diagnosis of Fibro – Osseous lesions was given. Incisional biopsy was taken and the diagnosis was confirmed by

histopathology as a Cemento Ossifying fibroma. Surgical excision was decided as the treatment of choice.

DISCUSSION:

Ossifying fibroma (OF) is a fibro-osseous lesion that arises from the periodontal membrane. The periodontal membrane contains multipotential cells that are capable of forming cementum, lamellar bone and fibrous tissue [3]. When the tumor involved maxilla, it can produce sinus obstruction, infection, facial deformity, proptosis and intracranial complications, even though it can remain asymptomatic in the early stage. In general, this tumor is relatively slow-growing, as a result of which the overlying cortical bone layer and mucosa remain intact, and thus the tumor may be present for a number of years before a diagnosis is made. In children (below 15 years of age), it exhibit as a rapid growth and a tendency to recur; it is called as “juvenile ossifying fibroma” (JOF) [4-5]. The juvenile form could be distinguished from ossifying fibroma by the following features: earlier onset (at childhood or adolescence), locally aggressive growth and osteoid trabeculae on histological examination.

Ossifying fibroma (OF) was first described by Menzel in 1872. Later Montgomery in 1927 coined the term “ossifying fibroma”[5]. In 1985, Eversole et al; described the radiographic characteristics of central ossifying fibroma, and two major patterns were noted, expansile unilocular radiolucencies and multilocular configuration. Most frequently occurs in female (female:male= 5:1)with age range

of 10 to 59 years. They arise in the mandible in 62 to 89% of the patients, 72% occurring in the premolar region [6].

Variants of COF differ in nature of calcification (cementum or bone), according to location (oral, paranasal, or orbital), morphological differences (presence or absence of psammomatoid component) and in behaviour (aggressive or static). MacDonald-Jankowski described three stages of clinical and radiological dynamics are mentioned in tumor development. The first is characterized by a process of destructive osteolysis and fibrous degeneration of bones, the second, by partial bone calcification and the third, by total calcification [7]. The tumor is well-circumscribed from its surrounding bone and will continue to grow bigger, slowly or actively, until it is removed surgically. The radiographic appearance is of utmost importance in the diagnosis of cemento-ossifying fibroma because it is often needed to rule out from other fibro-osseous lesions. The lesions may be either unilocular or multilocular [8]. In this case the tumor arose from the posterior part of the mandible. The progressive increase in size of this tumor over a period of six months with resultant facial asymmetry correlated well with the clinical characteristics of this entity. As the tumor matures, there is increasing calcification so that the radiolucent area becomes

flecked with opacities until ultimately the lesion appears as an extremely radiopaque mass. The cemento ossifying fibroma presents a radiolucent appearance in 53%, a sclerotic radio density in 7% and mixed or mottled appearance in 40% of the cases [9]. In our case it shows small amount of radiopaque component on central part of the lesions surrounded by multilocular radiolucency with ill-defined borders.

The characteristic macroscopic features of this tumor is replacement of normal bone by a benign connective-tissue matrix with varying amounts of mineralized substances [8].

Sakoda et al. [10] described the procedure of a segmental resection of an extensive ossifying fibroma with the replacement of the excised segment with immediate reconstruction.

CONCLUSION:

It is, therefore, important to know the tumor behavior when one is planning a proper surgical treatment in order to eliminate the tumor completely and avoid tumor recurrence and at the same time improve the patient's cosmetic and functional problems. And it should not be confused with other fibro-osseous lesion, as their management varies from none to surgical enucleation to complete resection.

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FIGURES:



Fig.1: Buccal vestibule obliterated on the left side.

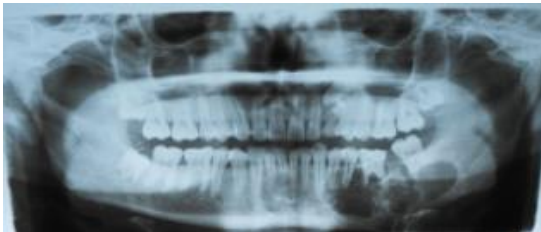


Fig.2a: Orthopantomogram view to 35, 36, and 37.



Fig.2b: Occlusal view in relation to 36 and 37.

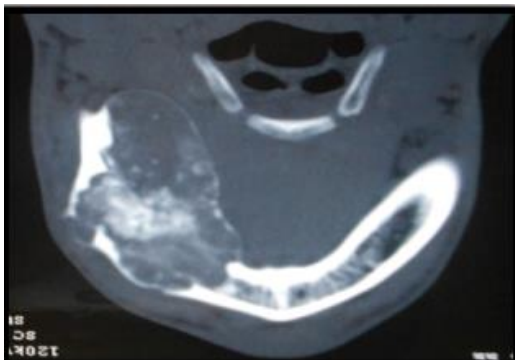


Fig 2c: Axial view of CT.

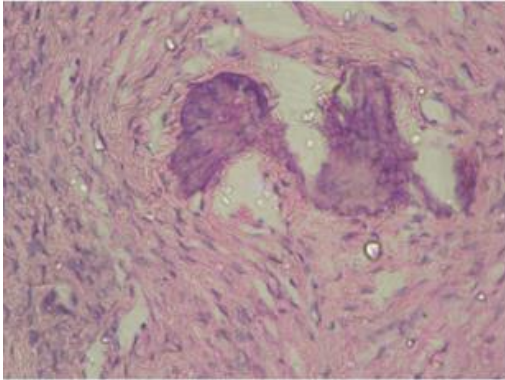


Fig 3: Histological view (in 40x).

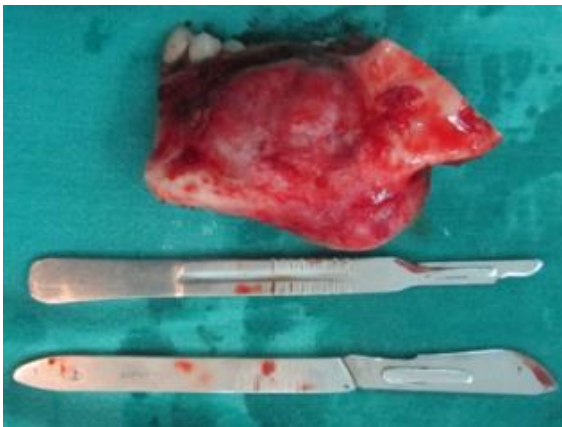


Fig 4: Surgical excision of the lesion.