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Benign cementoblastoma – A rare odontogenic tumour



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ABSTRACT

Benign cementoblastoma is a rare odontogenic tumour derived from odontogenic ectomesenchyme of cementoblast origin that forms cementum layer on the roots of a tooth. Benign cementoblastomas have a distinct clinical and radiographic appearance. It is important to consider them as one among the differential diagnosis in bony swellings of mandible. A case report of a 55 yr old female patient diagnosed as a case of benign cementoblastoma is presented.

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1. Introduction

Cementoblastoma is a rare benign odontogenic tumour of ectomesenchymal origin representing less than 1% of the odontogenic tumours.[1,2] Described first by Dewey in 1927[2,3] & also called true cementoma, it is a true neoplasm of functional cementoblasts (cell of origin) which forms a large bulbous mass of cementum or cementum like tissue on the tooth root.[4] Clinically it causes bony expansion. The commonest site is the posterior region of the mandible. It is seen as large radiopaque mass attached to the root of the tooth in the radiograph.

2. Case report

A 55 year old female reported with the chief complaints of pain and a swelling on the right side of lower jaw since four days. History revealed that the pain started spontaneously a week earlier on the right side of lower jaw which regressed on self medication. Four days later the pain recurred along with the occurrence of a swelling in the same region. Medical history was non contributory.

On extra oral examination (Fig. 1), the right side of face showed a solitary diffuse swelling with a smooth surface, ill defined borders, measuring approximately 5 cm × 5 cm in size, extending superioinferiorly from the malar prominence to the lower border of mandible. Anteroposteriorly, it extended from the angle of the mouth to the angle of the mandible. Skin over the swelling was pinchable. The swelling had a variable consistency, soft in the periphery, hard in the centre, and was tender.

On intraoral examination the patient's oral hygiene was found to be poor. A solitary diffuse swelling measuring about 2 cm × 3 cm in size was present involving the alveolar mucosa and buccal vestibule of right lower 2nd premolar and 1st molar teeth (Fig. 2). Margins were ill defined and the surface was smooth. The swelling was tender and hard. The buccal vestibule was obliterated. A swelling was also seen lingually in relation to the same teeth (Fig. 3). The right lower first molar was grossly decayed and tender on percussion. Vitality test was done with an electric pulp tester and the right lower 1st

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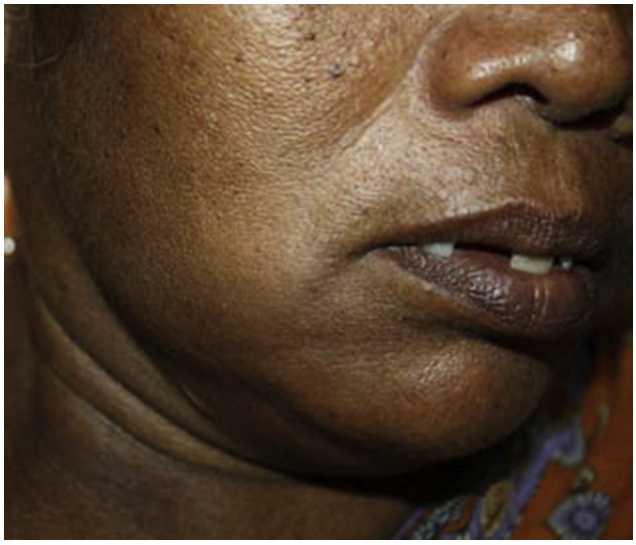


Fig. 1 – Extra oral swelling.



Fig. 3 – Lingual swelling.

molar was found to be non vital while the other teeth in the quadrant showed normal response.

As the swelling was hard in consistency, unyielding a provisional diagnosis of apical periodontitis in relation to the decayed right lower first molar with a central benign fibro osseous tumour of the mandible probably periapical cemental dysplasia was given.

The differential diagnosis that were considered were cementoblastoma, osteoblastoma and focal sclerosing osteomyelitis.

IOPA (Fig. 4) and OPG (Fig. 6) showed a well defined radiopacity involving and enveloping the periapical region of the mesial and distal roots of the right lower 1st molar, extending upto the 2nd premolar mesially and the 2nd molar distally. The involved tooth showed extensive caries with pulpal involvement. Occlusal view (Fig. 5) showed no expansion of cortical plates. Radiographic differential diagnosis was given as focal sclerosing osteomyelitis, periapical cemento osseous dysplasia, cementossifying fibroma, mature cementoblastoma/osteoblastoma, mature complex odontoma, periapical idiopathic sclerosis.

It was considered appropriate to extract the tooth as the tooth was grossly decayed. The associated mass was removed in toto and submitted for histopathological examination. The cavity was curetted and the wound was closed. Healing was uneventful.

Histological picture (Fig. 7) showed sheets of thick trabeculae of mineralized material with irregularly placed lacunae and basophilic reversal lines. Cellular fibrovascular tissue was present between the trabeculae. Mineralized tissue containing cementoblasts was seen suggestive of benign cementoblastoma. Correlating with the provisional diagnosis, a final diagnosis of benign cementoblastoma was made.

3. Discussion

Benign cementoblastoma, cementifying fibroma are true neoplasms of cemental origin. WHO defines it as a neoplasm



Fig. 2 – Intra oral swelling.

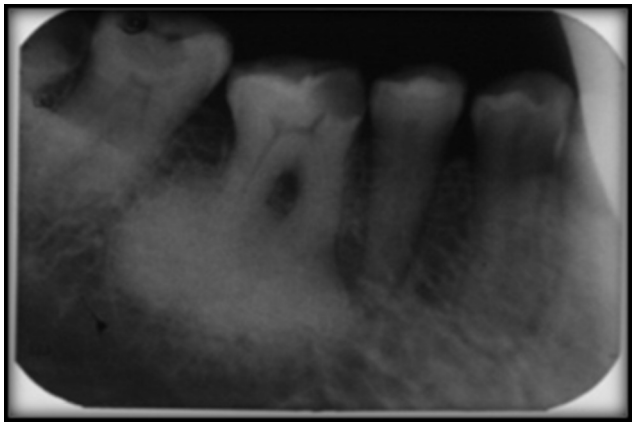


Fig. 4 – Intra oral radiograph showing periapical radioopacity.

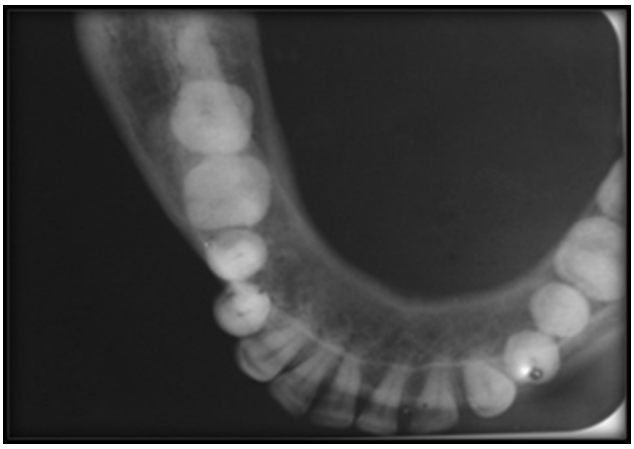


Fig. 5 – Occlusal radiograph.

characterized by the formation of sheets of cementum like tissue which may contain a very large number of reversal lines and may be unmineralised at the periphery of the mass or in the more active growth areas.

Cementoblastoma occurs most frequently under the age of 25 yrs in 50% of the cases,[1,5] although the range of occurrence is 10–72 yrs.[3,4,6] There is no significant gender predilection. Mandibular first molar is the most frequently affected tooth.[4–6] It rarely affects the deciduous dentition.[1] Other teeth involved are the mandibular second and third molars, mandibular bicuspids, maxillary bicuspids and the first, second and the third molars in order of prevalence.[4–6] The associated tooth is vital unless coincidentally involved.[4] The lesion is slow-growing and may or may not cause expansion of cortical plates of bone but is usually otherwise asymptomatic.[4] Pain has been reported but this may be related to the associated caries rather than due to the lesion itself. A cementoblastoma rarely causes pain.[4]

Radiographs show that the tumour mass is attached to the tooth root and appears as a well circumscribed dense radiopaque mass often surrounded by a thin, uniform radiolucent line.[1,4,6] The outline of the affected root is generally obliterated because of resorption of the root and fusion of the mass to the tooth.[1,4,5] It may be round or irregular in shape.

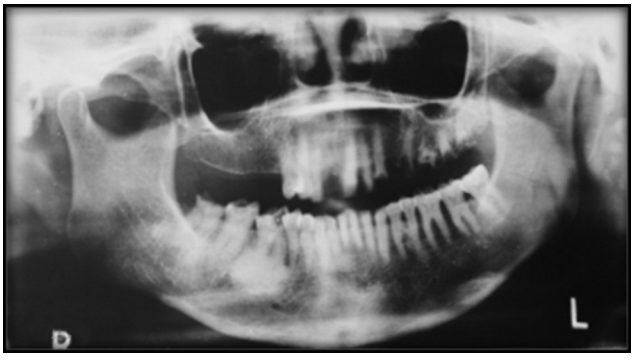


Fig. 6 – Orthopantomograph showing periapical radioopacity.

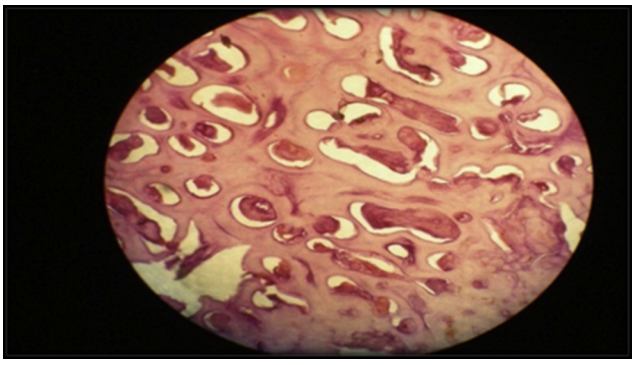


Fig. 7 – Histological picture.

There are a few lesions which should be distinguished from cementoblastoma such as osteoma, benign osteoblastoma, chronic focal sclerosing osteomyelitis and osteosarcoma, etc.[2,7] Cementoblastoma, occurs only in connection with the root of the tooth, while the osteoma and osteoblastoma arises in the medullar cavity of a wide range of bones.[7,8] Clinically cementoblastomas, osteomas and benign osteoblastomas are asymptomatic. Further radiographically cementoblastomas may have a peripheral radiolucent rim surrounding the lesion.[4]

Chronic focal sclerosing osteomyelitis arises in relation to the periapical region of a large carious lesion and may or may not be associated with pain.[4] Radiograph shows a well circumscribed radioopaque mass of sclerotic bone surrounding and extending below the apex of one or both roots and the entire root region is nearly always visible.[4]

Osteosarcomas may be of a sclerosing type or a destructive type or a combination of both. The sclerosing type shows evidence of excessive bone formation with irregular spindles of new bone radiating towards the periphery.[4]

4. Treatment

As the mass is attached to the tooth root and it causes expansion of the bone, the mass is enucleated and the tooth extracted even if the involved tooth is vital and caries free.[1,2,7] If a thorough enucleation is done the lesion does not seem to recur.[1,7]

5. Conclusion

A case of benign cementoblastoma in the mandible that has an occurrence rate of <1% among odontogenic tumours is reported. It is important to consider them as one among the differential diagnosis in bony swellings that occur in relation to the periapical region of the mandible.

Conflicts of interest

All authors have none to declare.

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ATTENTION FELLOWS

The Annual CDE Programme and 28th Annual PFA Convocation and Awards Ceremony is to be held at 09.00 am on Sunday December 14, 2014 at at Maulana Azad Institute of Dental Sciences, MAMC Complex, B.S. Zafar Marg, New Delhi - 110 002.

Dr. Karyn Stockwell, International President of PFA will be the Chief Guest and Ms. Loralie Lowder, International Executive Director of PFA will be the Special Guest. Lieutenant General Vimal Arora, Director General of Dental Services and Chief of Army Dental Corps, shall deliver the First Major General Kartar Singh Oration in the Annual CDE Programme.