

## Benign Cementoblastoma Associated with an Impacted Mandibular Third Molar – Report of an Unusual Case

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### ABSTRACT

*Cementoblastoma is characterized by the formation of cementum-like tissue in direct connection with the root of a tooth. It is a rare lesion constituting less than 1% of all odontogenic tumors. We report a unique case of a large cementoblastoma attached to the lateral root surface of an impacted permanent mandibular third molar in a 33 year old male patient. The association of cementoblastomas with impacted teeth is a rare finding.*

**Key Words:** Odontogenic tumor, Cementoblastoma, Impacted teeth, Third molar, Cementum

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### INTRODUCTION

Cementoblastoma is a rare lesion constituting less than 1% of all odontogenic tumors. It is currently classified as an odontogenic tumor by the World Health Organization and is included under the category of 'Mesenchyme and/or odontogenic ectomesenchyme with or without odontogenic epithelium'. This lesion was first recognized by Noeberg in 1930.<sup>[1]</sup>

It is characterized by the formation of cementum-like tissue in association with the tooth root.<sup>[1]</sup> The most commonly involved tooth is the permanent mandibular first molar. These lesions are usually associated with an erupted permanent tooth but on extremely rare occasions have been associated with impacted molars,<sup>[2,3,4,5]</sup> deciduous teeth, multiple teeth<sup>[6]</sup> and maxillary teeth extending to the maxillary sinus.<sup>[7]</sup> We report an extremely rare case of a large cementoblastoma associated with an impacted mandibular third molar.

### CASE REPORT

A 33 year old male patient complained of a gradual swelling on the right side of the face since few months which was accompanied by pain for the past 20 days. On clinical examination, a 5x7cms swelling was seen on the right side of the face in front of the tragus extending superiorly to the corner of eye and inferiorly to the lower border of mandible with well-defined margins. Facial asymmetry was present with mouth

opening limited to approximately 10mm. The swelling was firm to hard in consistency and tender on palpation. Lymph nodes were not palpable.

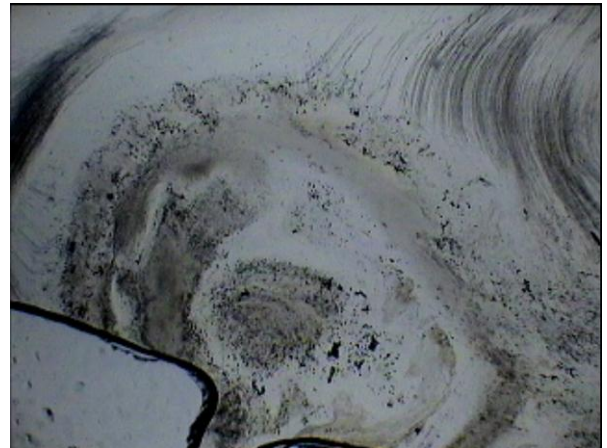
On radiographical examination, it showed a large, well circumscribed radiopaque mass attached to the lateral root surface of impacted permanent right mandibular third molar. The mass displayed a radiolucent area at the other end and was seen occupying almost the entire length of the ramus of mandible. The entire lesion was surrounded by a thin, uniform radiolucent line (Fig. 1). Considering the clinical and radiographical findings, the clinical diagnosis was Cementoblastoma / Odontome.

On gross examination, it showed multiple segments of hard tissue and a third molar tooth attached to one of the hard tissue mass at the lateral surface of the root. The largest hard tissue mass showed a cavity within (Fig. 2). The total size of the lesion was approximately 4.5 cms.

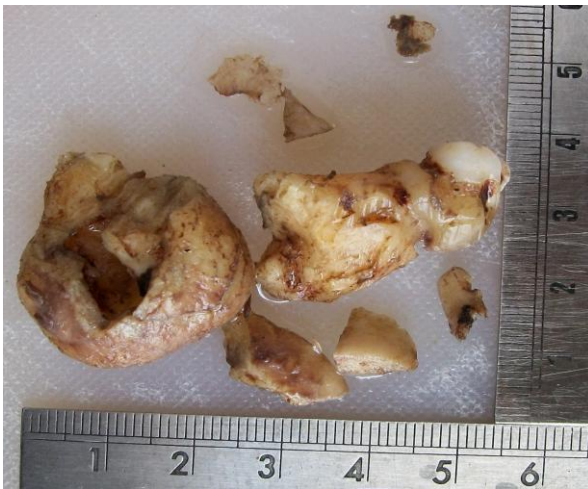
Haematoxylin and eosin stained slides of the decalcified tissue showed the lesion attached to the root surface of the tooth and composed of sheets of cementum like tissue with numerous reversal lines scattered throughout the lesion (Fig. 3). Ground section of the lesional tissue displayed irregular deposition of cementum like mass with numerous cementocytes in continuity with normal radicular dentin (Fig. 4). The histopathological diagnosis was Cementoblastoma.



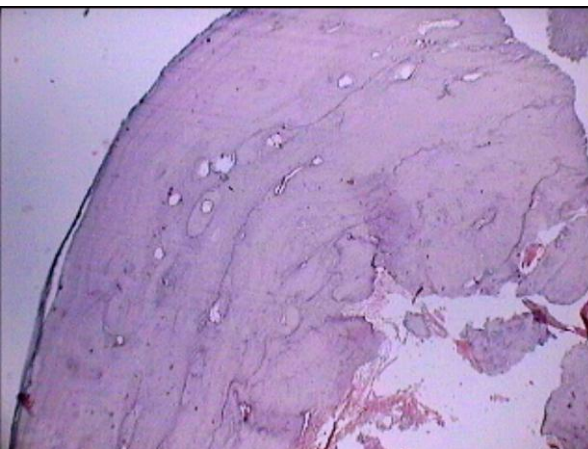
**Fig. 1:** Radiograph shows a well circumscribed radiopaque mass attached to the lateral root surface of impacted permanent right mandibular third molar



**Fig. 4:** Ground section showing irregular deposition of cementum like tissue in continuity with the radicular dentin



**Fig. 2:** Gross specimen shows a third molar tooth attached to one of the hard tissue mass at the lateral surface of the root. A cavity is seen in the other hard tissue mass



**Fig. 3:** Decalcified section shows sheets of cementum like tissue with numerous reversal lines scattered throughout the lesion

## DISCUSSION

Benign cementoblastoma is the only true neoplasm of cemental origin.<sup>[8]</sup> Cementoblastomas are commonly seen in young adults, especially in males,<sup>[6]</sup> although Brannon *et al* reported no significant gender predilection.<sup>[9]</sup> It is intimately associated with a tooth root, more frequently the erupted permanent mandibular first molar. Rarely, they can also be associated with impacted or unerupted third molars as seen in our case.<sup>[2,4,5]</sup>

Pain, swelling, facial asymmetry & cortical expansion are the common clinical signs and symptoms. Cementoblastomas are slow growing lesions with unlimited growth potential and growth rate thought to be approximately 0.5cm per year.<sup>[9,10]</sup>

On radiography, it has a characteristic, almost pathognomonic appearance seen as a well circumscribed dense radiopaque mass attached to the tooth root & often surrounded by a thin uniform radiolucent line. The present case showed a radiopaque mass with a radiolucent area at the other end denoting the cavity within. Cementoblastomas are usually seen arising from the root apex but the lesion described above shows its attachment to the lateral surface of the root. Similar finding was also described by Sumer *et al* in 2006.<sup>[2]</sup> The radiologic differential diagnosis includes condensing osteitis, hypercementosis & odontome.<sup>[3]</sup>

Macroscopically, the usual diameter is 2-3cms<sup>[3]</sup> but in the present case the tumor size was comparatively larger and measured approximately 4.5 cms. Histopathologically, cementoblastomas are composed of sheets of cementum like tissue with active cementoblasts and numerous reversal lines. The entire lesion is surrounded by a fibrous connective tissue band<sup>[11]</sup> which corresponds to the radiolucent zone seen in radiographs. Microscopically, they may resemble osteoid osteoma and osteoblastoma but the attachment

of the mass to root apex helps in differentiating them.<sup>[10]</sup>

The recommended treatment is complete removal of the lesion along with the associated tooth due to its capacity for persistent growth.<sup>[3]</sup> The lesion can be easily enucleated as a whole. The lesion shows recurrence rate of 21.7-37.1% and has no malignant transformation.<sup>[1,12]</sup>

## CONCLUSION

Cementoblastomas in majority of the cases show characteristic features with respect to their location, radiographic appearance, size & histopathological findings. This case report of a cementoblastoma is unique for its association with an impacted permanent mandibular third molar, its unusually large size and its attachment to the lateral root surface. The finding that makes it distinctive is the presence of a cavity within the mass represented radiographically by a combination of both radiolucent and radiopaque areas.

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