

**Benign Mandibular Cementoblastoma: A Case Report****EV Soma Sekhar goud, M. Shanthi<sup>1</sup>**

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**ABSTRACT:**

Cementoblastoma is a rare odontogenic tumor characterized by neoplastic proliferation of cementum or cementum-like tissue attached to the roots of a tooth. Cementoblastoma more frequently affects young males in the age range of 20-30 years, occurring in the mandible about 3 times more than in the maxilla. More than 75% of cases are noted in the mandible, with 90% in the molar and premolar region. Almost 50% involve the first permanent molar. Its occurrence in maxilla is rare. They can rarely affect primary teeth. The most common clinical characteristic of this tumor is expansion of the cortical bone resulting in facial asymmetry with dental crowding. The clinical, radiographic, and histopathological features of cementoblastoma in a 15-year-old boy are presented in this article.

**Keywords:** Benign cementoblastoma, Odontogenic tumor, Radiopaque mass.

**INTRODUCTION:**

Cementoblastoma, or benign cementoblastoma (BC) or true cementoma, is a relatively rare benign neoplasm of cementum of the teeth. It is derived from ectomesenchyme of odontogenic origin. According to the world health organization<sup>1,2,3</sup> classification, they represent less than 0.69%–8% of all odontogenic tumors.<sup>4,5</sup> More than 75% of cases are noted in the mandible, with 90% in the molar and premolar region. Almost 50% involve the first permanent molar. Its occurrence in maxilla is rare.<sup>6</sup> They can rarely affect primary teeth. There is no sex predilection. The neoplasm occurs predominantly in children and young adults, with about 50% before the age of 20 years and 75% before the age of 30 years.

The most common clinical characteristic of this tumor is expansion of the cortical bone resulting in facial asymmetry<sup>7</sup> with dental crowding.<sup>8</sup> The radiographic appearance is characteristically a radiopaque mass in continuity with the root of a tooth, surrounded by a radiolucent halo which is considered as diagnostic feature.<sup>9</sup> Histologically, cementoblastoma tissue is similar to cementum. Some

radiopaque lesions share similar characteristics, and the differential diagnosis of benign cementoblastoma includes lesions such as osteoblastoma, odontoma, focal sclerosing osteomyelitis<sup>10</sup>, hypercementosis and cemento-osseous dysplasia. The only distinctive criterion is the true connection with the surface of the root of tooth is cementoblastoma.

The recommended treatment consists of complete enucleation of tooth-lesion mass and curettage.<sup>11</sup> In this paper, we describe a case of cementoblastoma arising in the mandible of a 15-year-old boy who was followed up for the period of 2- years.

**CASE REPORT**

The patient was a 15-year-old boy, complaining of facial swelling on the left side. His medical and family history was non contributory. On extra-oral physical examination, facial asymmetry was seen caused by swelling of the left buccal region, which was firm and covered with normal skin. On intra-oral examination, patient oral hygiene is good. The overlying mucosa was darkened

in colour with loss of vestibular sulcus depth from the left second premolar to second molar was seen. During palpation a swelling of hard consistency was noted. All the associated teeth are painless and immobile. A panoramic radiographic examination revealed well-defined, round, radiopaque lesion that was delineated by a thin radiolucent halo and it was in contact with the distal root of left mandibular first molar. Third molar was in Nolla's stage of tooth development. (Figure 1) Differential diagnosis includes focal sclerosing osteomyelitis, periapical cemental dysplasia, and hypercementosis. After obtaining signed informed consent from parent it was decided to excise lesion for biopsy (histopathological analysis).



Figure 1: Radiopaque mass with radiolucent border attached to left first mandibular distal root  
Surgical excision of lesion was performed under general anaesthesia. Buccolingual mucoperiosteal flap was raised and osteotomy was performed to separate the remaining tumor from the subjacent bone with complete curettage of the cavity. During osteotomy the lesion was found adherent to first permanent molar, therefore complete enucleation of lesion along with related tooth and curettage of alveolar bone was performed. The surgical cavity was irrigated, cleaned and closed with sutures. The surgical specimen was sent to histopathological examination. The H & E section showed deposition of cemental trabeculae rimmed with plump, active cementoblasts in a fibrous stroma. Many cemental trabeculae depict basophilic reversal lines. At areas, cemental trabeculae were coalesced. Fibrous stroma had fibroblasts and

fibrocytes along with few blood vessels. RBC's extravastion was evident along with sparse chronic inflammatory infiltrate chiefly lymphocytes. Histopathological examination confirmed the diagnosis of cementoblastoma. (Figures 2, 3) Currently the patient is under regular follow-up without signs of recurrence.

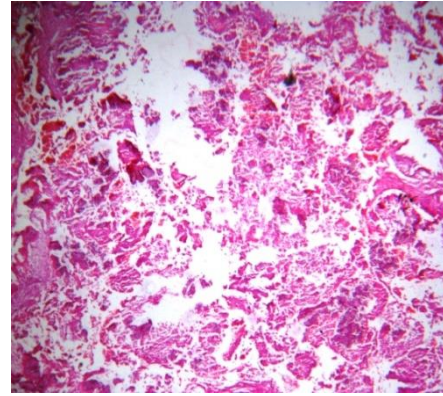


Figure 2: Cellular stroma with discrete basophilic calcified masses

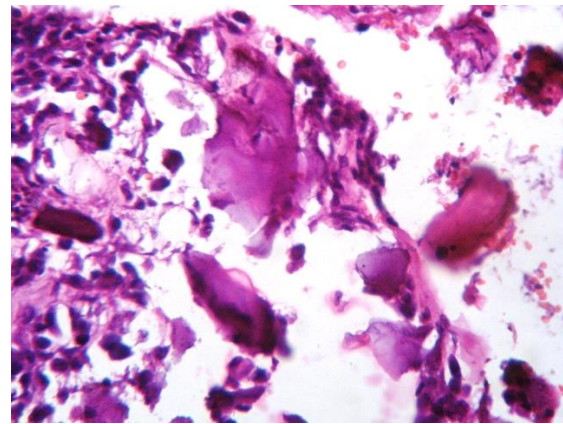


Figure 3: Fibrocellular stroma with basophilic cementoid calcified masses

## DISCUSSION

Cementoblastomas are odontogenic tumours of cementum arising from ectomesenchyme. They were first described by Dewey (1927).<sup>12</sup> They are classified by the World Health Organization as a true cemental neoplasm.<sup>13</sup> Literature review reported that the commonest age of presentation is in the first and second decade, virtually all occur in the premolar/molar region, and the mandible is a more common site than the maxilla.<sup>14</sup> The lesion is usually associated with the permanent dentition but there have been case reports associated with the primary dentition.<sup>15</sup> These tumours primarily affect young adults in the

second and third decades of life, with approximately one half occurring under the age of 20 years and approximately three quarters occurring under the age of 30 years.<sup>16,17</sup> Although there does not appear to be a definitive gender preference, some authors have reported both a male and a female predominance. Patients may be completely asymptomatic<sup>18</sup>; however, bone expansion and pain can occur.<sup>19-23</sup> Trismus, dental displacement, and increased mobility of adjacent teeth<sup>24</sup> may eventually be observed. Radiographically, cementoblastoma typically demonstrates a well-circumscribed, radiopaque mass attached to the root of the involved tooth with a surrounding thin radiolucent zone.<sup>17</sup> When the attachment to the root of the involved tooth is apparent, this radiographic finding is nearly pathognomonic.<sup>16</sup> Additional radiographic features include root resorption, loss of the root outline, invasion of the root canal, bony expansion displacement and involvement of adjacent teeth, cortical erosion, and obliteration of the periodontal ligament space.<sup>1</sup> The most difficult challenge in the differential diagnosis of cementoblastoma is focal sclerosing osteomyelitis, periapical cemental dysplasia, and hypercementosis.. These tumours may exhibit the same histomorphology<sup>25</sup>, but they differ in their origin.<sup>18</sup> The recommended treatment of cementoblastomas consists of the surgical removal of the lesion along with the tooth/teeth and/or structures that are affected, followed by complete curettage of the area or the peripheral osteotomy of the entire region.<sup>15,16,18</sup> Such treatment has a good outcome since there are no reported cases of recurrence.

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