Case Report

Cementoblastoma associated with the primary second molar: An unusual case report

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Abstract

Cementoblastoma is a rare benign odontogenic neoplasm of jaws mostly occurring in younger age group. Here, we present a case of swelling associated with deciduous second molar. Based on the clinical and radiographic features, a provisional diagnosis of cementoblastoma was made. The lesion was surgically removed along with the associated tooth and confirmed as cementoblastoma histopathologically. A 1-year follow-up showed no recurrence.

Keywords: Benign, cementoblastoma, deciduous tooth

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INTRODUCTION

Cementoblastoma or benign cementoblastoma is the only true benign neoplasm of cementum origin derived from mesenchyme.[1,2] The cementoblastoma is a relatively rare odontogenic neoplasm of the jaws, which comprises 1% to 6.2% of all odontogenic tumors.[3] It is characterized as a large mass of cementum or cementum-like tissue that is attached to the roots of an erupted permanent tooth and very rarely being attached to the primary tooth.[4,5] Here, we present a rare case of cementoblastoma in a 10-year-old male patient attached to the root of primary second molar.

CASE REPORT

A 10-year-old male patient came to the Department of Oral and Maxillofacial Surgery with the chief complaint of pain and swelling over lower left back tooth region for 2 months. The pain was a dull, nonradiating and intermittent in nature. On examination, a small single, bony hard, nontender swelling was found in the mandibular first molar region with obliteration of the buccal vestibule. The teeth in the affected region were noncarious. The involved tooth was vital and nontender. There was no associated tooth mobility and any purulent discharge, and oral hygiene was excellent. The extraoral radiographic examination revealed an approximately 1–1.5 cm radiopaque mass attached to the mesial root of the primary left mandibular second molar and well demarcated by a radiolucent halo [Figure 1]. The observed clinical and radiographic finding was led to the provisional diagnosis of benign cementoblastoma. The clinical differential diagnosis included juvenile ossifying fibroma, osteoma, osteoblastoma odontoma, periapical cemental dysplasia, condensing osteitis, and hypercementosis. The patient was planned for surgical removal of the tumor along with extraction of the associated molar

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under local anesthesia. At the time of surgery, the lesion could be easily differentiated from normal bone and was removed along with the tooth, and the specimen was sent for a histopathological examination to confirm diagnosis [Figure 2].

Histopathological examination

On histopathological examination, the tumor had a uniform appearance with closely packed trabeculae of cementum separated by plump cementoblasts [Figures 3 and 4]. These cells had a large vesicular nucleus, a prominent nucleolus and a moderate amount of cytoplasm. There was no evidence of cellular atypia and mitotic figures were not seen. The tumor had a smooth periphery abutting against fibrous tissue and alveolar bone.

A final diagnosis of benign cementoblastoma was confirmed, and the patient was recalled for regular follow-up. On regular follow-up, the patient was normal with satisfactory results [Figure 5].

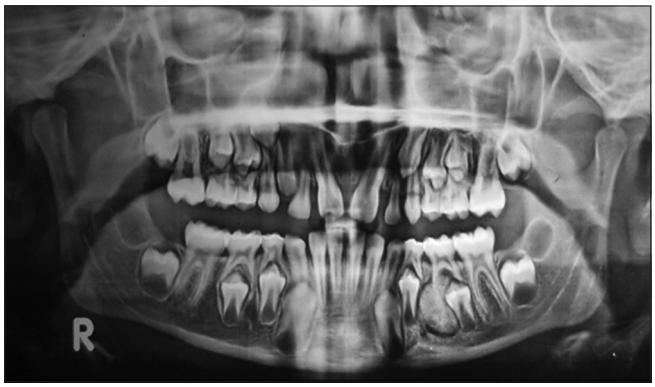

Figure 1: Preoperative X-ray orthopantomogram revealed a single, well-defined radiopaque mass attached to the mesial root of the primary left mandibular second molar with surrounding radiolucent halo

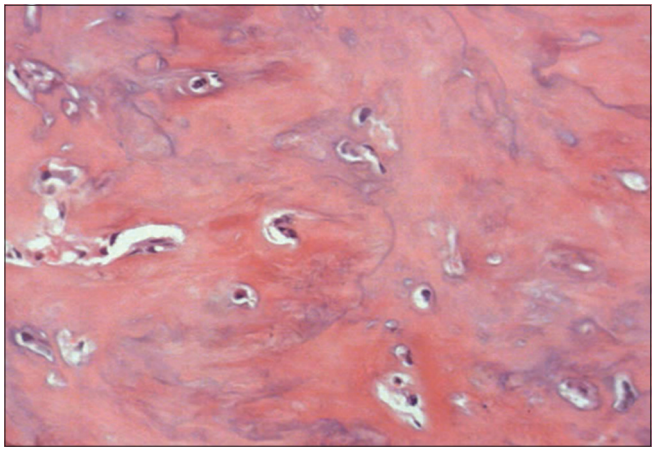

Figure 3: H&E (×20)-stained section shows broad trabeculae of sparsely cellular cementum with supporting fibrocellular connective tissue

DISCUSSION

Benign cementoblastoma is also called as true cementoma. The benign cementoblastoma was first described by the Dewey in 1927, is a slow-growing, benign odontogenic tumor arising from cementoblasts although there have been reports of aggressive behavior.[6] It usually presents as a distinct lesion with characteristic radiographic and histopathologic features.[5] Benign cementoblastoma is predominantly seen in young persons in the second and third decades of their lives.[4] Ulmansky *et al*.[5] reported that close to three-quarters of the patients (73%) are under the age of 30. These tumors exhibit a slightly higher predilection for females, but the present reported case was of a 10-year-old male patient. Cementoblastoma is relatively an uncommon lesion associated with the permanent tooth, and even more uncommon with primary tooth, only fourteen cases associated with primary dentition have thus far been reported in the literature previously.[7] It occurs most commonly in the

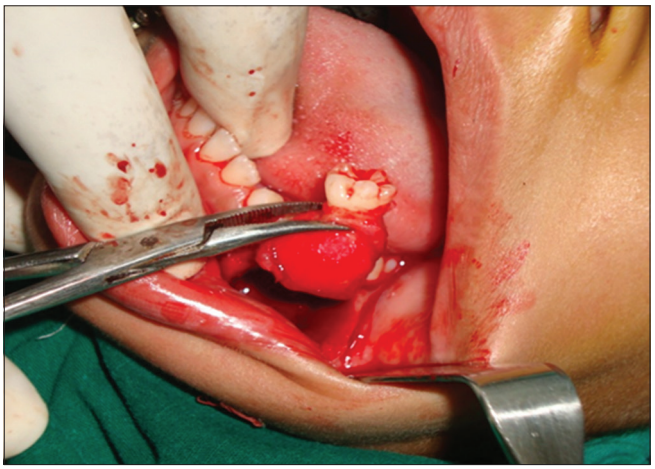

Figure 2: Intraoperative photograph revealed tumor mass along with associated primary second molar

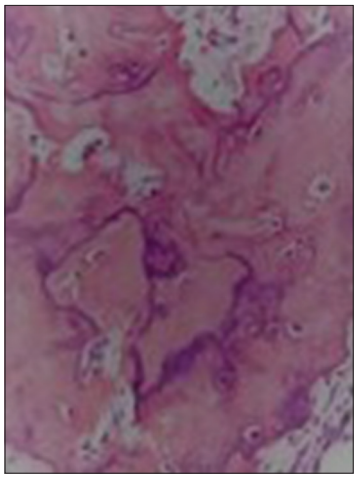

Figure 4: H&E under high resolution shows closely packed trabeculae of cementum separated by plump cementoblasts

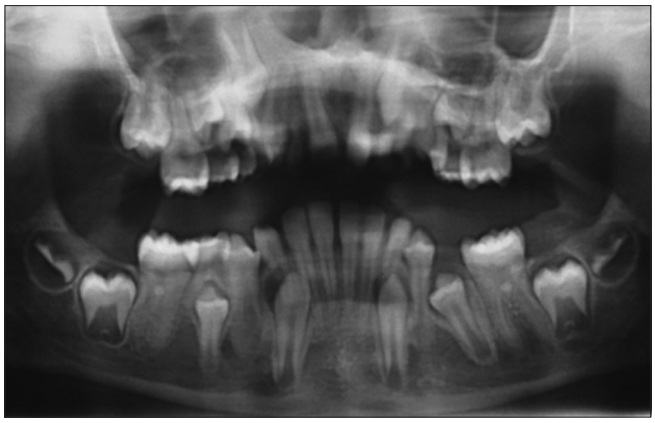

Figure 5: Postoperative X-ray orthopantomogram after 6 months revealed erupting second premolar

mandibular molar area followed by the mandibular premolar area.[3,4] In 50% of the cases, the mandibular first permanent molar is affected,[5,6] whereas in our case, the lesion was associated with primary mandibular second molar, which is very rare and unusual. Clinically, patients may complain of pain and swelling, but it may be asymptomatic.[4,5] In addition, it may also cause jaw deformity and displacement of the adjacent teeth.[8] In the present case, the patient presented with the complaint of pain and swelling. Radiographically, most of the cases of cementoblastoma appear as a well-defined circumscribed radiopaque mass, which is confluent with the partially resorbed root of the involved tooth and encircled by a thin radiolucent periphery.[5,9] This radiographic feature could also be well correlated with the present case which showed a radiopaque mass attached to the mesial root of primary left mandibular second molar. The clinical and radiographic findings led to the diagnosis of cementoblastoma. Radiographically, it should be distinguished from nonneoplastic processes that may also produce a radiopaque lesion around the root apex, such as periapical cemental dysplasia, hypercementosis or condensing osteitis.[10] As compared to cementoblastoma, periapical cemental dysplasia usually produces a smaller lesion without cortical expansion and shows a progressive change in radiographic appearance over time, from radiolucent to mixed to radiopaque. Radiographically, hypercementosis is usually small in size, and there is no associated pain or jaw swelling. Condensing osteitis lacks a peripheral radiolucent halo. Other radiographic differential diagnoses include juvenile ossifying fibroma, osteoma, osteoblastoma and odontoma.[4,10] A diagnosis of cementoblastoma can be established if the lesion is attached to the roots of a tooth. Juvenile ossifying fibroma is not attached with roots although is found in a similar age group with a predilection for the maxilla. Osteomas are also more commonly found in the ethmoid and frontal sinuses, but are not associated with a tooth. The cementoblastoma is differentiated from the osteoblastoma by its location and association with a tooth root. The odontome is generally not fused with the adjacent tooth, and it does not appear as a homogeneous radiopacity. Grossly, cementoblastoma looks like as a round to ovoid, well-circumscribed mass of hard, calcified tissue surrounds the root of the affected tooth.[4,5] Microscopically, it appears as cementum-like tissue with interspersed connective tissue.[2] The present reported case had similar features. Histopathologically, it should be differentiated from osteoblastoma which arises from medullary cavity of the bone whereas cementoblastoma is always associated with the roots of involved tooth. Radiopaque lesions vary in their local aggressiveness and so the treatment may vary. As cementoblastoma is a true benign neoplasm with unlimited growth potential, the treatment should be complete removal of the lesion along with the extraction of the associated tooth followed by thorough curettage or peripheral ostectomy.[5,6] Cementoblastoma has good prognosis if complete excision and removal of the associated tooth is performed. With incomplete removal, recurrence is common and it appears to be highest for those who are treated with curettage alone.[8] In the present case, the tumor mass was surgically excised along with the extraction of associated tooth, and satisfactory results with no recurrence were found on regular follow-up of the patient.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Soluk-Tekkeşin M, Wright JM. The World Health Organization Classification of Odontogenic Lesions: A summary of the changes of the 2017 (4th) edition. Turk Patoloji Derg 2018;34:1-18.
2. Kramer IR, Pindborg JJ, Shear M. Histological Typing of Odontogenic Tumors. World Health Organization, Inernational Histological Classification of Tumors. New York: Springer-Verlag; 1992. p. 23.
3. Lu Y, Xuan M, Takata T, Wang C, He Z, Zhou Z, *et al*. Odontogenic tumors. A demographic study of 759 cases in a Chinese population. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 1998;86:707-14.
4. Regezi JA, Kerr DA, Courtney RM. Odontogenic tumors: Analysis of 706 cases. J Oral Surg 1978;36:771-8.

5. Ulmansk M, Hansen E, Praetorius F, Haque, MF. Benign Cementoblastoma: A review and five new cases. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 1994;77:48-55.
6. Kalburge JV, Kulkarni VM, Kini Y. Cementoblastoma affecting mandibular first molar – A case report. Pravara Med Rev 2010;2:33-7.
7. Nuvvula S, Manepalli S, Mohapatra A, Mallineni SK. Cementoblastoma relating to right mandibular second primary molar. Case Rep Dent 2016;2016:2319890.
8. Brannon RB, Fowler CB, Carpenter WM, Corio RL. Cementoblastoma: An innocuous neoplasm? A clinicopathologic study of 44 cases and review of the literature with special emphasis on recurrence. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2002;93:311-20.
9. Reddy BP, Shyam NDVN, Reddy BS, Kiran G, Prasad N. Cementoblastoma which was associated with the maxillary first premolar – A case report. J Clin Diagn Res 2012;6:919-20.
10. Flaitz CM, Coleman GC. Differential diagnosis of oral enlargements in children. Pediatr Dent 1995;17:294-300.