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Case Report

Benign Cementoblastoma of Primary Mandibular Molars: A Rarity

Lavanya Sirigala[1*], Yesurathnam Dude[2], Jesudass Gavada[3], Balasubramanyam Sama[4]
[1]Associate Professor, Department of Oral Pathology, Government Dental College & Hospital, RIMS, Putlampally, Kadapa-516004, India
[2]Assistant Professor, Department of Oral Surgery, Government Dental College & Hospital, RIMS, Putlampally, Kadapa-516004, India
[3]Associate Professor, Department of Paedodontics, Government Dental College& Hospital, RIMS, Putlampally, Kadapa-516004, India
[4]Professor, Department of Oral Surgery, Government Dental College &Hospital, RIMS, Putlampally, Kadapa-516004, India

***Corresponding author**
Dr. Lavanya Sirigala
Email: slavanyamds@yahoo.co.in

Abstract: Benign cementoblastomas are developmental odontogenic tumors that arise from ectomesenchyme of dental follicle and represent about 0.69% to 8% of all odontogenic tumors. The Benign cementoblastomas more frequently affects young males in an age range of 20-30 years, occurring in the mandible about 3 times more than in the maxilla, and it is always physically attached to the tooth roots. Cementoblastomas associated with primary teeth are extremely rare lesions, but must always be considered in the differential diagnosis of hard masses in jaws in children to avoid overdiagnosis. Though locally aggressive, the recurrence is found to be rare if it is completely excised and thoroughly curetted. An intraosseous painful swelling was noted upon intraoral examination of an 8 years old boy. The swelling was of 4months duration and slow growing in nature. OPG revealed a radiopaque mass with radiolucent periphery of roots of mandibular right deciduous molars. Differential diagnosis of odontoma, cementoblastoma and osteoma were made. The clinical, radiographic and histopathological features of the excised specimen led to the diagnosis of cementoblastoma. To our knowledge only 9 cases of cementoblastoma associated with primary teeth were reported in literature. Herewith, we are reporting a rare case report of benign cementoblastoma of deciduous mandibular molars.
Keywords: Osteoma, Radiopaque mass, Radiolucent periphery, Primary teeth, Mandible, Molars

INTRODUCTION

Benign cememtoblastoma (True Cementoma), a rare slow growing neoplasm was first recognized by Dewey in 1927 [1]. It is derived from the odontogenic ectomesenchyme of dental follicle which forms cementum [2]. Its prevalence has been reported to vary from 0.69% to 8% of all odontogenic tumors [2, 3]. There does not appear to be any significant gender or racial predilection [1, 3]. The mean age of occurrence was 20.7 years [2]. Clinical symptoms include expansion of bone, swelling and pain. The mandible is the most common site, and usually associated with the roots of mandibular permanent first molar or second premolar [3, 4]. The tumor also has been found to be associated with multiple teeth, impacted molars and deciduous teeth [5].

CASE REPORT

An 8-years-old boy reported to the outpatient Department of Government Dental College and Hospital, RIMS, Kadapa in month of August 2014 with chief complaint of swelling in the right lower back tooth region for 4 months. History revealed that swelling was painful and gradually increased to present size. The pain was intermittent, aggravates on mastication and relieves on taking analgesics. His medical and family history was noncontributory. Intraoral examination revealed a buccal hard, tender swelling in relation to non-carious deciduous right mandibular first and second molars. All teeth in the quadrant were vital. A panoramic radiograph showed a radio-opaque mass attached to the roots of the right deciduous mandibular molar teeth (Fig. 1). Differential diagnosis of odontoma, cementoblastoma and osteoma were made. The patient was referred to Department of Oral Surgery for necessary treatment.

The patient was scheduled for surgical excision of the tumour and extraction of the associated deciduous molars. It was performed under local anesthesia. A buccal full-thickness envelope flap was developed for the identification of the mental nerve and the lesion at the time of surgery. The tumor was easily differentiated from normal bone as it had perforated the

buccal cortex in the region. With the help of extraction forceps the tooth was luxated and delivered buccally with the associated mass attached *in toto* [6]. No reconstruction was necessary considering the patient's age and mandibular vascularity, as the defect can be filled by osteoneogensis. The periphery of the bony cavity was curetted and the wound closed primarily.

Postoperative period was uneventful. The excised specimen was submitted for histological evaluation. Gross examination showed a hard irregular mass measuring 25 mm attached to the mesial root of right deciduous first mandibular molar and both roots of second mandibular molar (Fig. 4, 5). The specimen was fixed in 10% neutral formalin, decalcified in formic acid, bisected in a mesio-distal direction and then processed for light microscopic examination. Histopathology of decalcified section of tooth showed the physiological architecture of dentin and sheets of cementum like tissue with interstitial tissue attached to the roots of the teeth (Fig 7). Basophilic reversal lines were seen. The clinical, radiographic and microscopic evaluation confirmed the diagnosis of cementoblastoma.

The treatment of choice for cementoblastoma is surgical removal. As the involved teeth 84 and 85 with calcified mass have already been removed, no further treatment was necessary in this case. A six month follow up revealed no recurrence.

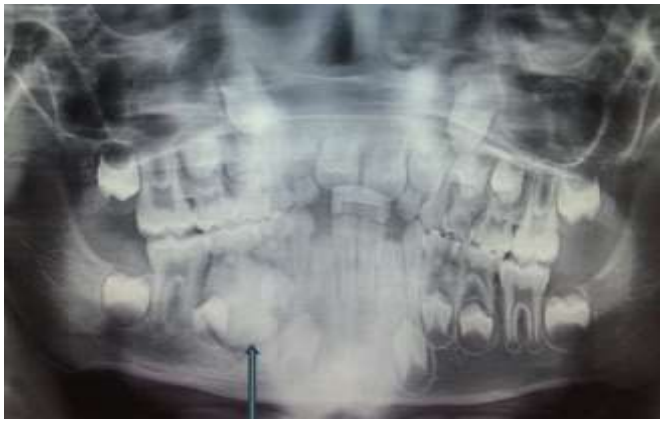

Fig. 1: OPG showing radioopaque mass attached to the roots of 84 and 85

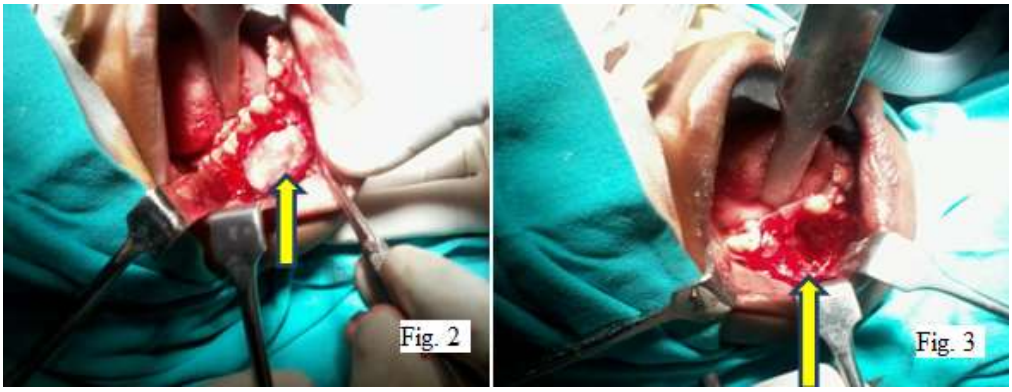

Fig. 2 & 3: Surgical enucleation of the tumor- before (Fig. 2) and after excision (Fig. 3)

Fig. 4 & 5: Gross specimen -Tumor attached to the roots of 84 & 85

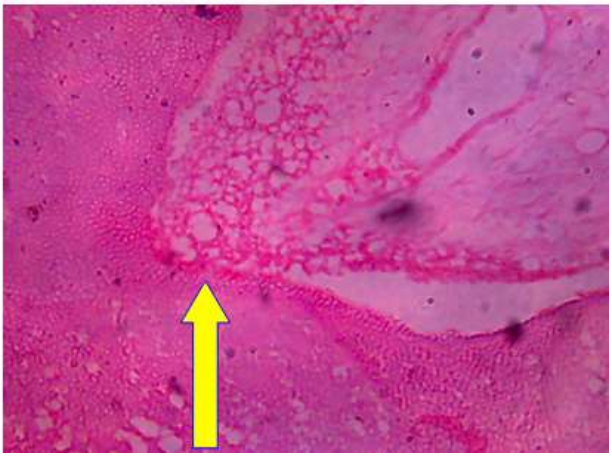

Fig. 6: Tumor arising from the tooth root

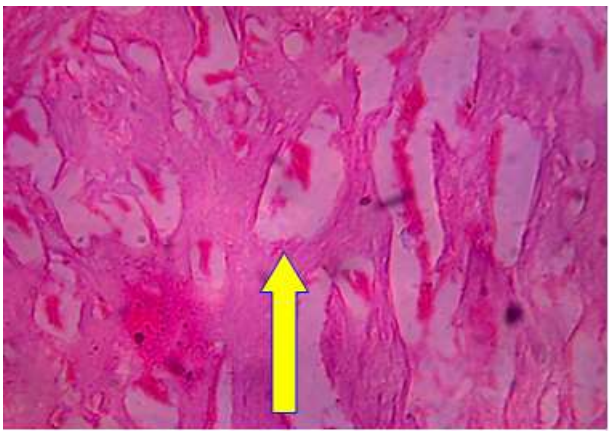

Fig. 7: Cementum like tissue with interstitial tissue

DISCUSSION

Benign cementoblastoma of the permanent dentition is an uncommon lesion and is even more uncommon on primary teeth. Cases of cementoblastoma associated with primary tooth have been reported in literature [2, 3, 7].

Osteoma, osteoblastoma, fibrous dysplasia, and juvenile ossifying fibroma must be considered in the differential diagnosis of periapical or central radiopaque lesions of the jaws in children [2, 8]. Osteoma usually found within the maxillary, ethmoid and frontal sinuses but were not associated with a tooth and have been reported as a component of Gardner's syndrome. Osteoblastoma and Cementoblastoma often exhibit similar histologic appearances [2]. The Cementoblastoma has a pathognomonic radiographic appearance, well-defined solitary circular radiopacity with a radiolucent halo attached to the roots of a tooth [6].

Histologically, cementoblastoma present cementum-like tissue with numerous reversal lines and multinucleated giant cells [2, 9, 10]. Fibro vascular tissue with cementoblast like cells between the mineralized and trabecular hard tissue is seen. The attachment of hard mass to the roots of the teeth confirms the diagnosis of cementoblastoma.

The osteoblastoma arises in the medullary cavity of many bones, including the long bones, vertebrae and jaws [11]. Juvenile ossifying fibroma occurs in a similar age group with a predilection for the maxilla. This aggressive lesion cause divergence of teeth, not attached to the roots and histologically exhibit proliferation of spindle-shaped cells which is supported by a fine collagenous stroma with the immature cellular osteoid matures into woven bone and the formation of small spherical ossicles. The cement ossifying fibroma is a painless lesion and most common in mandible. Radiographically, it is well demarcated from the host bone and histopathologically it exhibits fibrous stroma of varying cellularity with calcifications that resembls osteiod and trabeculae of bone lined by osteoblasts [2].

Fibrous dysplasia commonly involves the jaws and manifests as a slow-growing, painless swelling. Radiographically it shows a ground glass appearance blending with the normal host bone. Histologically, the lesions consist of irregular separate trabeculae of immature bone which is supported by a fibrous tissue stroma. The osseous fragments are generally not lined by osteoblasts. The lesional bone fuses with the normal

bone masking the demarcation between lesional and host bone [2].

In the present case, age, site, radiopaque mass attached to mesial roots of deciduous mandibular molars, and sheets of cementum like tissue with interstitial tissue arising from tooth root were found well correlated with diagnosis of Benign cementoblastoma and excluded the other differential diagnosis of hard masses in jaws. Complete enucleation with involved teeth has been done in the present case.

Unlimited growth potential of cementoblastomas results in locally aggressive behavior causing bony expansion, resorption, displacement of adjacent teeth and jaw deformity [2, 7]. Incomplete excision was found to be the cause for high recurrence rate as high as 37.1% [7, 12].

An excellent prognosis is noticed after complete removal of tumor followed by thorough curettage and in those cases in which follow-up was carried out, no observed recurrence has been found.

CONCLUSION

Thus, this case necessitates the importance of consideration of cementoblastomas in the differential diagnosis of hard masses of jaws in children to rule out more serious illness such as osteomas in Gardner's syndrome preventing unnecessary treatment procedures.

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