



ISSN No: 2319-5886

International Journal of Medical Research & Health Sciences, 2016, 5, 3:73-76

Benign cementoblastoma: A case report

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ABSTRACT

Benign cementoblastoma is a rare odontogenic tumor of mesenchymal origin comprising only less than 1% of all odontogenic tumors. The radiographic features is very characteristic in which the tumor mass is attached to the root of the tooth. Histopathologically benign cementoblastoma and osteoblastoma are indistinguishable. Here, a case report of 28 year old patient with benign cementoblastoma is presented along with a brief review of literature.

Keywords: Benign cementoblastoma, Cementoma, Odontogenic tumor.

INTRODUCTION

'Benign cementoblastoma' also known as 'true cementoma' is a rare odontogenic mesenchymal neoplasm. True cemental neoplasms are benign cementoblastoma and cementifying fibroma as classified by WHO.^[7] It comprises less than 0.69 to 0.8% of all odontogenic tumors.^[7] 50 % of cases involve mandibular molars.^[7] Most of the cases are asymptomatic but pain and swelling are occasional findings. We report a case of a symptomatic benign cementoblastoma associated with permanent left mandibular third molar.

CASE REPORT

A 28 year old female patient reported to our outpatient department with the chief complaint of pain in the left lower back tooth region for the past six months. Pain was mild, intermittent in nature without aggravating or relieving factors. There was no history of swelling, discharge, paresthesia or anesthesia. There was no relevant medical or family history.

On intra oral examination, partly erupted 38 was present with tenderness on percussion. There were no other significant intra oral findings.

On radiographic examination, a well defined round to ovoid radiopaque lesion approximately 1 cm in diameter was found attached to both the roots of the tooth and obscuring the outline. The lesion was well demarcated by thin radiolucent line. (Fig -1) Based on clinical and radiographic findings, the provisional diagnosis was made as benign cementoblastoma. The extraction of the tooth along with the lesion was done under local anesthesia and submitted for histopathological examination.

The excised specimen showed hard tissue mass attached to the roots sparing the crown (Fig -2) and fixed in 10% formalin. The specimen was sectioned longitudinally in mesio-distal direction. Ground sections were prepared with one half of the specimen and the other half was decalcified using 5% Hcl and processed for H&E. Both H&E and ground sectioned specimen show clearly that the tumor attached with both the roots. (Fig- 3).

The microscopic examination of ground section showed acellular cementum adjacent to the radicular dentin. (Fig-4) The tumor was composed predominately of cellular cementum with lacunae and canaliculi of cementocytes. The lesion involved furcation area also.

The decalcified H&E section showed crown as well as root of the tooth with normal pulpal structure in the center. The root portion of the tooth was continuous with the tumor. The tumor composed of cementum like structures with

broad trabeculae. (Fig-5) Cellular cementum had areas of fibrovascular islands. The trabeculae were composed of prominent basophilic reversal lines giving a pagetoid appearance as well as sheets of irregularly placed cementocyte within lacunae. (Fig-6) The final diagnosis was established as benign cementoblastoma.

Fig – 1 Radiograph shows radiopaque lesion surrounded by radiolucent rim



Fig – 2 – Tumor attached with the roots

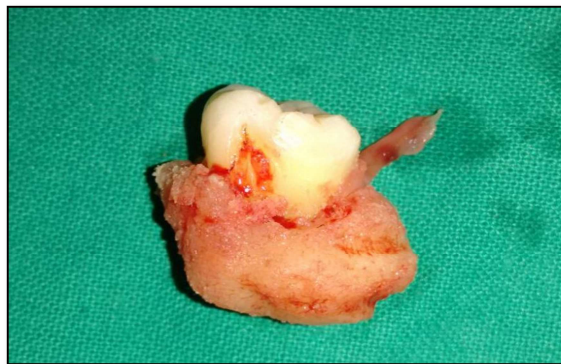


Fig -3 H&E and Ground section show tumor attached with the roots

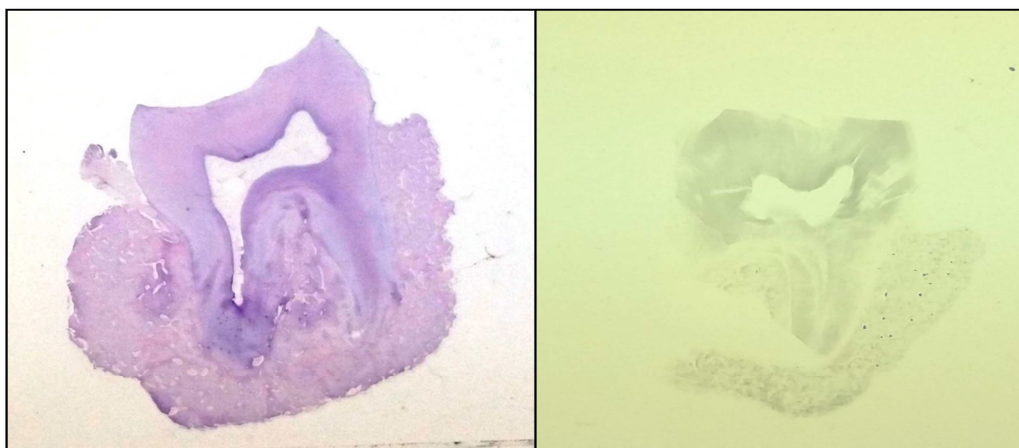


Fig -4 Ground section at 10X shows dentinal tubules and cementocytes with acellular cementum (arrow) in between



Fig -5 Decalcified H&E at 10X shows cementum like structure with broad trabeculae

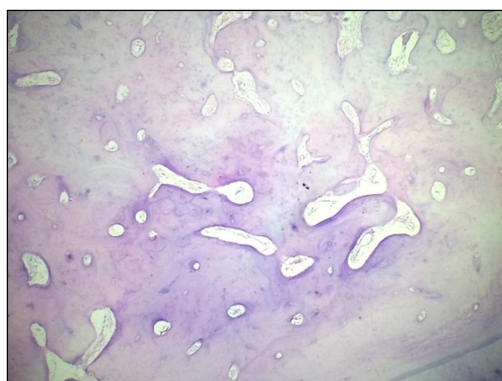


Fig -6 Decalcified H&E at 40X shows prominent basophilic reversal lines (arrow)



DISCUSSION

The benign cementoblastoma arises from cementoblast. It is a benign, slowly growing, odontogenic tumor. It was first reported by Norberg in the year 1930.^[1] It is classified as a tumor of ectomesenchymal origin, with or without inclusion of epithelium by WHO classification of 2005.^[10] It has three stages during its course of development such as periapical osteolysis stage, cementoblastic stage and maturation and calcification stage.^[5]

The characteristic feature of this tumor is the attachment of the lesion with that of the root which can be demonstrated both macroscopically and microscopically which was true in our case also.^[5]

Radiographically, benign cementoblastoma characteristically exhibits a well-circumscribed, radiopaque mass attached to the root of the involved tooth with a surrounding thin radiolucent line. This feature was present in our case also. Radiographically, the pathognomonic feature is the attachment of the tumor with the involved tooth.^[3]

The radiographic differential diagnosis for the cementoblastoma includes condensing osteitis, osteoblastoma, ossifying fibroma, odontoma, hypercementosis and periapical cemental dysplasia. Condensing osteitis can be differentiated by the presence of carious tooth with the absence of peripheral radiolucent line. Ossifying fibroma, odontoma and osteoblastoma can be excluded by their absence of association with tooth or root. Periapical cemental dysplasia is smaller lesion with progressive change in the radiographic appearance over time and in hypercementosis, roots lose their typical sharpened appearance and exhibit rounding of the apex.[4-6]

Histologically, the tumor presents cementum-like structures with numerous reversal lines. The prominent basophilic reversal lines may give a pagetoid appearance to the lesion. Multinucleated osteoclast type giant cells and plump cementoblasts may be present in the intervening fibrovascular stroma. The periphery may show a band of connective tissue resembling capsule.[5] In our case giant cells and connective tissue capsule were not seen.

The histopathological differential diagnosis of cementoblastoma can be benign osteoblastoma and osteosarcoma. The osteoblastoma consists of vascularity with dilated capillaries, moderate number of multinucleated giant cells scattered throughout the lesion and the actively proliferating osteoblasts line the irregular trabeculae of new bone. The highly active cellular appearance and pleomorphism of the cells, particularly at the periphery, cementoblastoma can be mistaken for osteosarcoma. However, cementoblastoma cells do not show mitotic activity.[2]

Slootweg in 1992, confirmed that the histopathological features of osteoblastoma and cementoblastoma are indistinguishable apart from the attachment of the cementoblastoma to the roots of the tooth.[9]

The treatment of cementoblastoma is surgical removal of associated tooth along with the lesion. The prognosis is excellent and the tumor does not recur.

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