Cementoblastoma: A case report

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ABSTRACT

Benign cementoblastoma is a rare odontogenic tumour characterized by the formation of a mass of cementum or cementum like tissue attached to the roots of the tooth. It is probably a true neoplasm of functional cementoblasts that usually occurs around the root of a mandibular premolar or molar tooth. Cementoblastoma are slow growing lesions and are usually asymptomatic; however pain and swelling may occur. Thus this case report reveals that cementoblastoma is usually asymptomatic and slow growing lesions but associated with pain and swelling. This report presents a large cementoblastoma of the right mandibular body, extending from the first premolar to the second molar, in a 23-years-old male patient which was confirmed by its radiological and histopathological features.

Keywords: Cementoblastoma, radio-opaque mass, cementoblasts

Introduction

Cementoblastomas are slow growing lesions and are usually asymptomatic which has been classified as a benign tumours of odontogenic origin and derived from ectomesenchyme. It is an uncommon tumour comprising less than 0.69% - 8% of all odontogenic tumours [1]. But the accepted theory of its origin is that it is a mesenchymal tumor and precise derivation is connective tissue of periodontal ligament[2]. The benign cementoblastoma occurs most frequently under the age of the 25 years and with slight predilection for males and occur in both maxilla and the mandible. However, the mandible is three times more frequently involved than maxilla and the most frequently affected tooth is the mandibular first permanent molar. The lesion represents with a slow growing mass and produces cortical expansion along with association of Pain[3,4]. Radiographically, the tumor mass is attached to the tooth root and appears as a well circumscribed dense radiopaque mass often surrounded by a thin, uniform radiolucent line. The outline of the affected root is generally obliterate because of resorption of the root and fusion of the mass.

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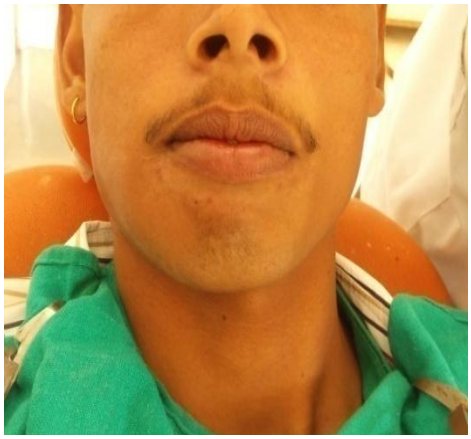
Case report

A 23 year old male patient came to the Department of Periodontology and Implantology, D.J. College of Dental Sciences and Research, Modinagar, India with the chief complaint of pain and swelling in right side of cheek since 2 months. The pain was a dull ache which was non radiating and intermittent in nature. Clinically, the tooth was carious and radiographically the caries was extending to the pulp chamber. The endodontic treatment was started and patient was recalled after two days. After two days, patient came with the complete resolution of soft tissue swelling but there was persistent facial asymmetry. On palpation, the swelling

was bony hard in nature along with no association of lymphadenopathy. Intraoral inspection showed that the swelling was localized in the molar region of the right side of the lower jaw along with expansion of the both buccal and lingual plates. The teeth were not loose and the overlying mucosa was normal.Periapical radiograph showed a circular radio-opaque mass which was surrounded by a radiolucent halo that was attached to the mesial root of the first molar. Tomography also revealed a 2x2 cm radiopaque mass and buccal and lingual extension of the lesion. A clinic radiographic diagnosis of cementobalastoma was made and patient was scheduled for the biopsy. Biopsy was performed under local anaesthesia and the specimen was sent for histopathological diagnosis.



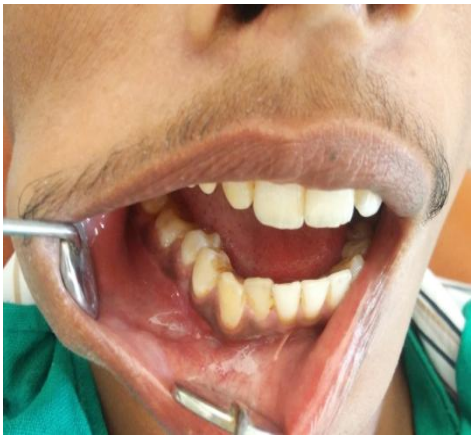


Fig 1,2:Patient with persistent facial asymmetry

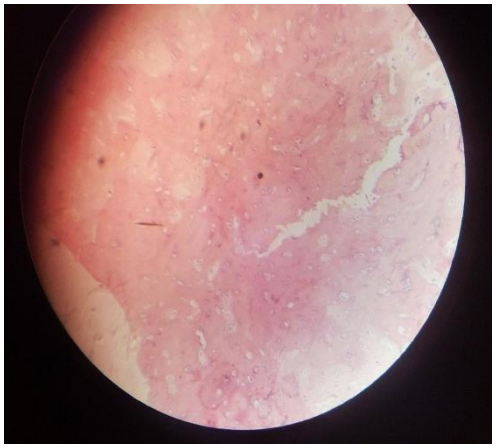


Fig 3:Tomography revealing lesion at 10 X

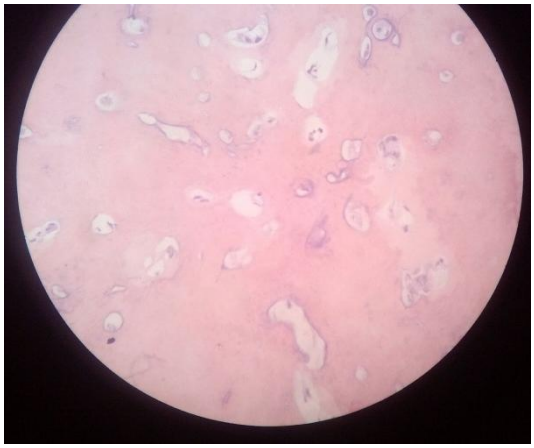


Fig 4:Tomography revealing lesion at 40X

Histopathology report: H & E stain section of the specimen shows sheets of calcified tissue with minimal soft tissue inclusions consisting of fibrillary, vascular and cellular elements. The calcified sheets show basophilic cells of variable size present within lacunae. These features confirmed the lesion as benign cementoblastoma.

Surgical treatment

At the time of surgery, a buccal full thickness flap was raised extending from lower right canine to the second molar and osteotomy was performed to separate the remaining tumor from the subjacent bone without luxating the tooth and the wound was closed primarily. Post operative period was uneventful.

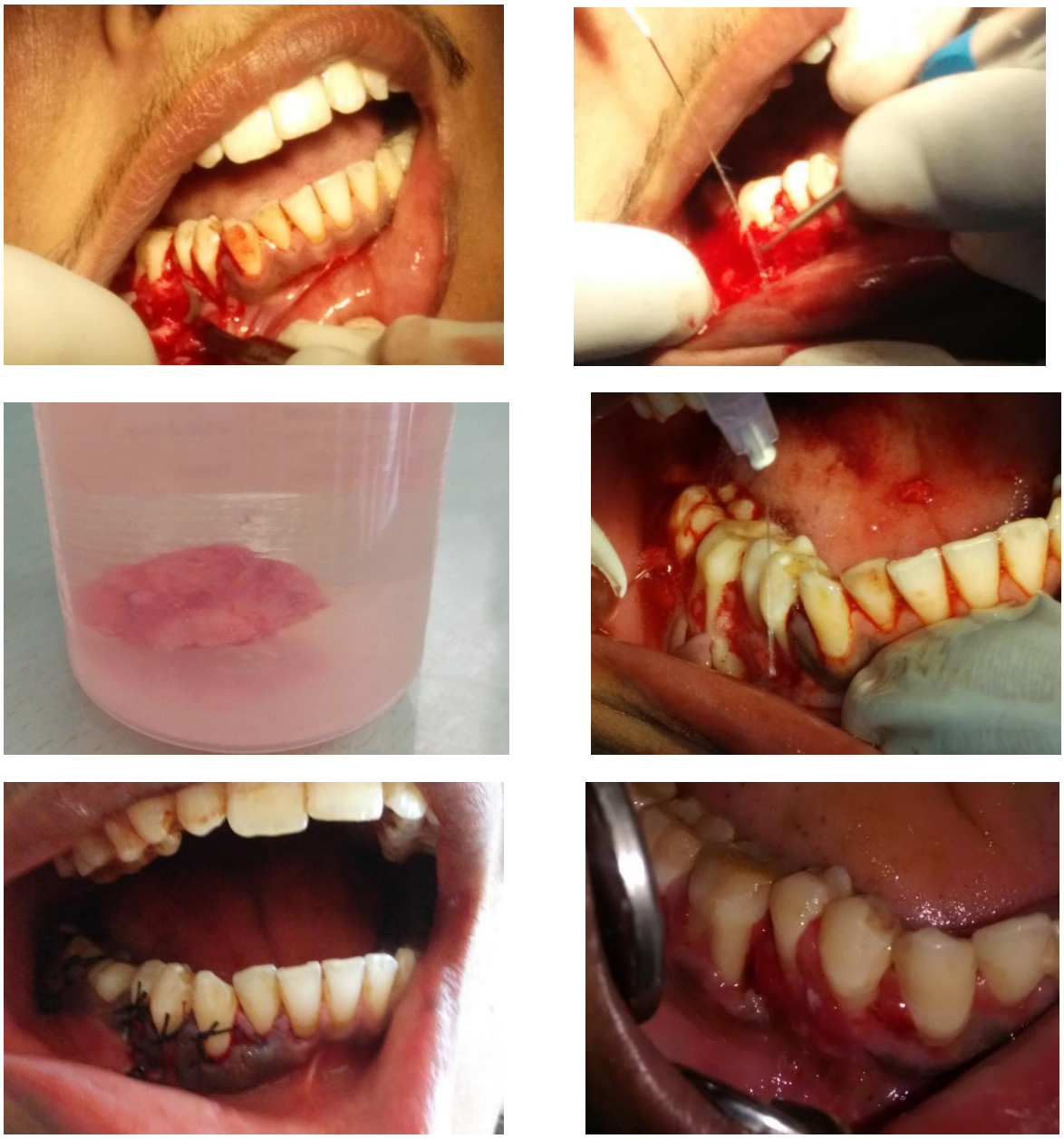


Fig 5:Surgical treatment of patient

Discussion

True cementoma is a slow growing odontogenic tumor that arises from the mesenchymal tissue, exactly from cementoblasts. It is a rare lesion, first described in 1930 by Norberg[5]. Patient usually present with pain and swelling in the involved area; more than 50% of patient are aged under 20 (75% aged < 30) and the lesion is located in mandible in more than the 70% of cases (with a predominant location at first molar and second premolar). The pathognomonic radiographic appearance of true cementoma is very useful to make a differential diagnosis with other periapical radiopacity like cementoblastoma, ostoblastoma, odontoma,

periapical cemental dysplasia, condensing osteitis and hypercementosis[6].The most difficult challenge in the differential diagnosis of cementoblastoma is osteoblastoma. These two tumors may exhibit the same histomorphology[7], but they differ in their origin[8]. Some authors defend the odontogenic origin as a basis to differentiating cemento- blastoma from osteoblastoma; this is because in cementoblastoma, the lesion is part of the root structure of the involved tooth caused by neoplastic cementoblasts that produce mineralized material that fuses with a tooth root structure[9,10].Associated tooth are vital but may be non responsive to pulp test probably indicating disruption of normal impulse transmission since the tumor tends to encompass the root apex. Pain, abnormal pulp test plus the radiographic features might suggest localized sclerosing osteomyelitis but the consistent finding of a well demarcated radiolucent border is the clue to true nature of the lesion1.Radiographically, the tumor mass is attached to the tooth root and appears as a well circumscribed dense radiopaque mass often surrounded by a thin, uniform radiolucent line. The outline of the affected root is generally oblitered because of resorption of the root and fusion of the mass to the tooth.Histologically, the main bulk of the tumor is composed of sheets of cementum-like tissue, sometimes resembling secondary cellular cementum but other times being deposited in a globular pattern resembling giant cementicles. Reversal lines scattered through out this calcified tissue are often quite prevalent.In this case report, H & E stain section of the specimen shows sheets of calcified tissue with minimal soft tissue inclusions consisting of fibrillary, vascular and cellular elements. The calcified sheets show basophilic cells of variable size present within lacunae. The clinical, histopathologcal and radiographic findings led to the diagnosis of cementoblastoma. The cementoblastoma has been described as a benign, solitary, slow-growing lesion, although there have been reports of aggressive behavior. Due to the benign neoplastic nature of the lesion, the treatment of choice is complete removal of the lesion with extraction of the associated tooth. A more conservative technique, to retain the involved tooth and remove the lesion using a surgical endodontic approach, has been reported[11]. In this case treatment involved raising buccal full thickness flap extending from lower right canine to the second molar and osteotomy was performed to separate the remaining tumor from the subjacent bone without luxating the tooth and the wound was closed primarily. Uneventful postoperative healing was reported.

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Conflict of Interest: None

References

1. Mohan M, Shah H, Sharma SM, Karikal A. Cementoblastoma in maxilla: A rare case report. Heal talk; September-october 2013; 6(1):23
2. Toolet M, Baton R, Ronald B, Ronald F. Benign (true) cementoblastoma: Report of cases. J of Oral Surgery 1979; 37: 342-45.
3. Albert M, John K, Raymond J. Cementoblastoma, a clinical, pathological study of seven new cases. J Oral Surgery 1974; 38(3):394-403.
4. Maria P, Edmund C. Cementoblastoma involving multiple deciduous teeth. Oral Surg, oral med oral Pathol 1987; 63: 602-05.
5. Ahrens A., Bressi T. True Cementoma (Benign cementoblastoma): a case report.
6. 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.
7. Slootweg, P.J. (1992) Cementoblastoma and osteoblas- toma: A comparison of histologic features. Journal of Oral Pathology & Medicine,1992; **21**:385-389.
8. Brannon, R.B., Fowler, C.B., Carpenter, W.M. and Corio, R.L. (2002) Cementoblastoma: An innocuous neoplasm? A clinicopathologic study of 44 cases and review of litera-ture with special emphasis on recurrence. Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, and En-dodontology,2002; **93**:311-320.
9. Cundiff, E.J.Developing cementoblastoma: Case report and update of differential diagnosis. Quintessence International, 2000;**31**:191-195
10. Biggs, J.T. and Benenati, F.W. Surgically treating a benign cementoblastoma while retaining the involved tooth. Journal of the American Dental Association,1995; **126**:1288-1290.
11. Biggs JT, Benenati, FW. Surgically treating a benign cementoblastoma while retaining the involved tooth. J Am Dent Assoc 1995; 126(9):1288-90.