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Large Cementoblastoma of Mandible, Excision with Cryotherapy: A Case Report

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ABSTRACT

Cementoblastoma is a rare odontogenic tumor. This lesion is mesenchymal in origin. It tends to act as a benign condition. It will lead to a destructive lesion if untreated. It usually occurs as the apex of the teeth leading to resorption of mandible as it expands. The treatment of the lesion has traditionally been enucleation with extraction of affected teeth. In case of very large lesions, resections have been shown to be treatment of choice. In this case, we will show an alternative approach to large expansile cementoblastomas. The use of partial resection with cryotherapy may be another option to consider in select patients to avoid significant morbidity associated with resections.

Keywords: Cementoblastoma; Enucleation; Resection; Osteoblastoma

INTRODUCTION

Cementoblastoma is a benign mesenchymal odontogenic tumor commonly affecting the roots of the molars and premolars. The studies have shown a male to female preference of 2 to 1 in patient lower than 30 years of age.[1] This odontogenic tumor represents less than 5 % of all odontogenic tumors[2] and there is less than 100 reported cases and treatments. This lesion has a recurrence rate reaching 30% without adjuvant therapy.[3] The treatments have focused on removal of the tooth and attached mass as one piece with debridement of base of the lesion or un-block resection of the lesion with immediate or delayed reconstruction. Conservative treatments with tooth preservation treatments using root canal therapy and resection of cemetoblastoma portion of the root with bone preservation has been reported.[4] However, conservative management of bigger lesions without mandibular resection has not been described.[5] This case represents an alternative to en bloc resection to minimize the post operative consequences and morbidity for the patients with larger lesions.

CASE REPORT

A 16 year old Hispanic female presented to her general dentist for her routine dental care and checkup. Upon clinical examination followed by radiographic exam the primary dentist noticed a radiographic opacity and expansile lesion next to mandibular molars. She was also noticed to have hard and dense tissue growing over the

lower left second molar region. She was subsequently referred to Oral and Maxillofacial Surgery clinic for evaluation. On exam, patient reported no pain or discomfort and was unaware of any issues. Her past medical history was completely negative however on facial exam, a large expansile lesions was palpable facially at the mandibular body region. Oral exam confirmed an expansile hard mass adjacent to Right second molar. The gumline showed elevation to top of the tooth which was hard on palpation (Figure 1).

Figure 1

Patient reported no discomfort on palpation. The teeth were healthy and no decay was present and pulp testing was normal. Panoramic radiograph revealed a radiolucent/radio opacity extending from right lower wisdom tooth to mandibular right first molar and inferiorly extending to interior alveolar nerve canal. There appeared to be a radiolucent margin around the lesion (Figure 2).

Figure 2

Panoramic radiograph revealed resorption of the roots of first and second molar. The computer tomography revealed extension of lesion both buccally and lingually with erosion of lingual cortical bone (Figure 3).

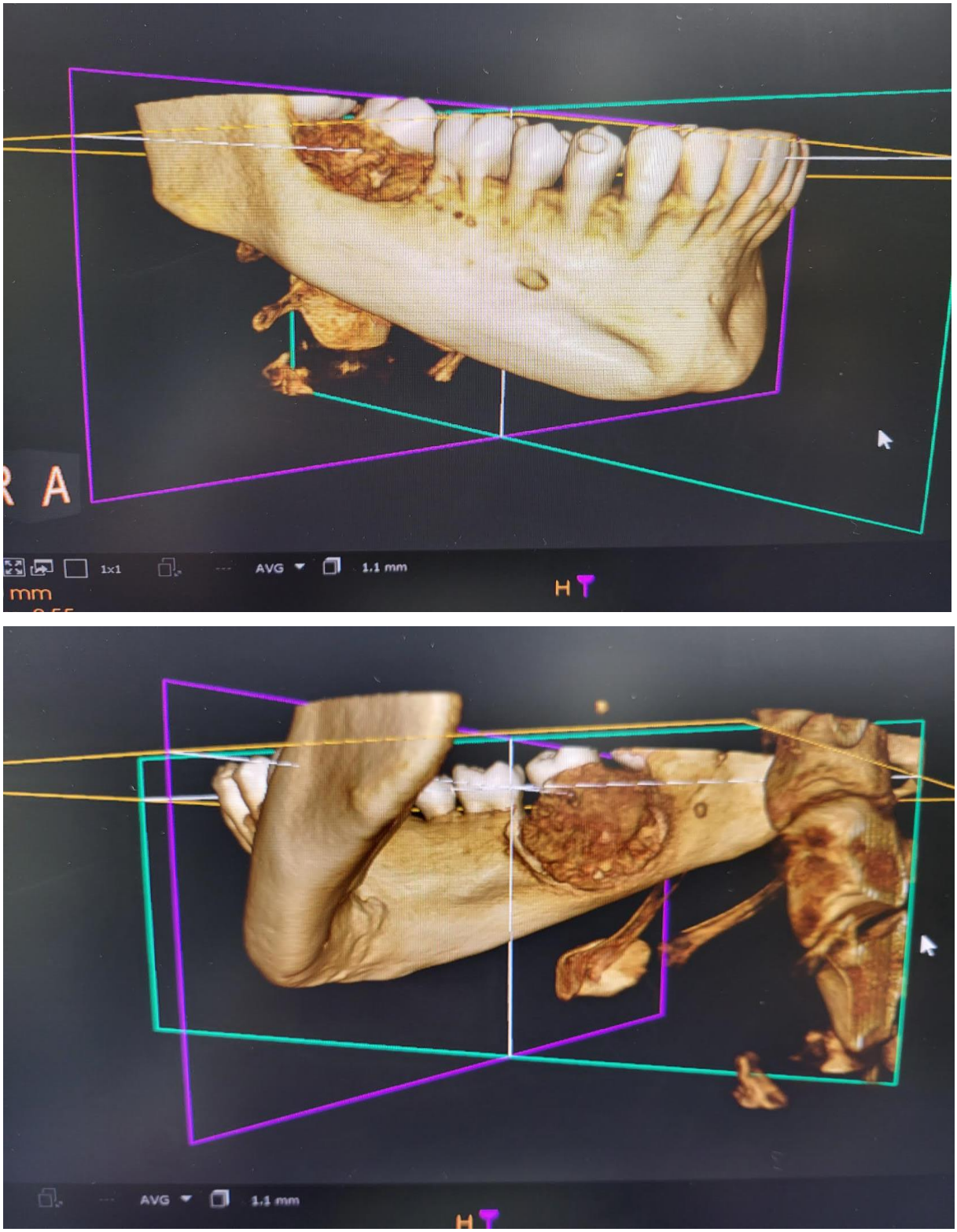
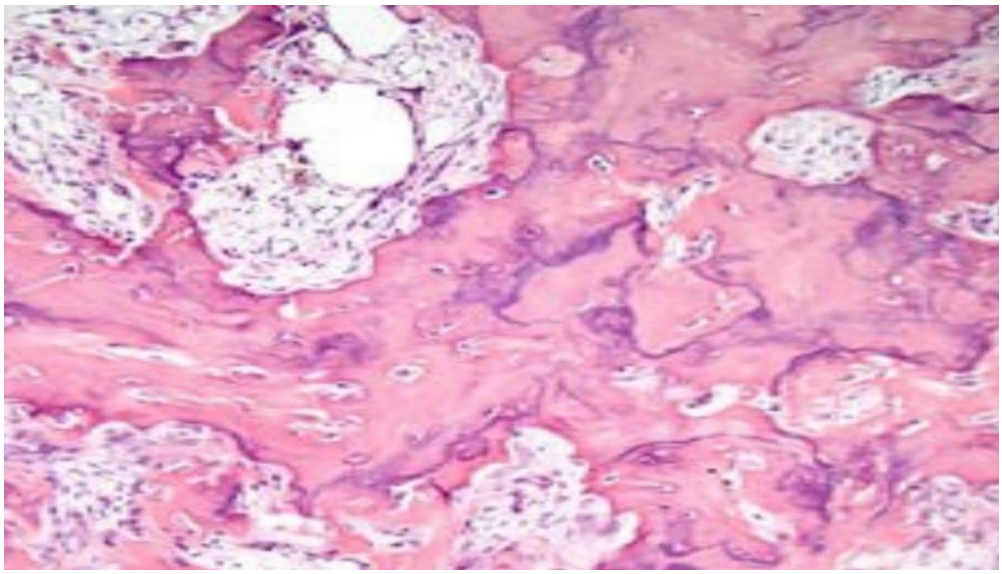


Figure 3: Computer Tomography shows the lesion 3 dimensionally with extension to lingual and buccal cortex.

The patient was initially treated with a biopsy under local anesthesia to confirm diagnosis. Local mucoperiosteal flap was raised and a small window created for biopsy and specimen sent in formalin for decalcification and microscopic evaluation. Diagnosis of cementoblastoma was confirm by oral pathology department. Histologic findings were significant for sheets of cementum and areas of globular pattern cementicles. There also appears to be fibrous and vascular tissue and component of cementoblasts and cementoclast contributing to reversal lines (Slide 1).



Slide1: Sheets of cementum and areas showing cementicles and reversal lines.

The treatment options included en bloc excision with sacrifice of inferior alveolar nerve and extraction of involved teeth. However, due to significant morbidity associated with en bloc resection and discussion with family, decision was made to remove the lesion and the teeth up to inferior alveolar nerve and subsequently treat the remaining lesion around the nerve with cryotherapy to minimize nerve injury. The discussion revolved possible recurrence and if so, then full en-bloc resection would be carried out. The operation revealed no margin between the lesion and the existing bone. The lesion and teeth were removed and the base underwent mechanical debridement combined with three rounds of cryotherapy Figure 4,5,6.

Figure 4: Immediate post flap elevation revealing the expansile mass.

Figure 5: Debridement and extraction complete. Cryotherapy round 3 is being done.

Figure 6: The immediate post operative closure.

The patient was subsequently was followed for post operative care reporting good sensation in right lower lip. He also has healed well with no expansile mass. She is currently being followed every 3 months to rule out recurrence and healing of the mandible (Figure 7).

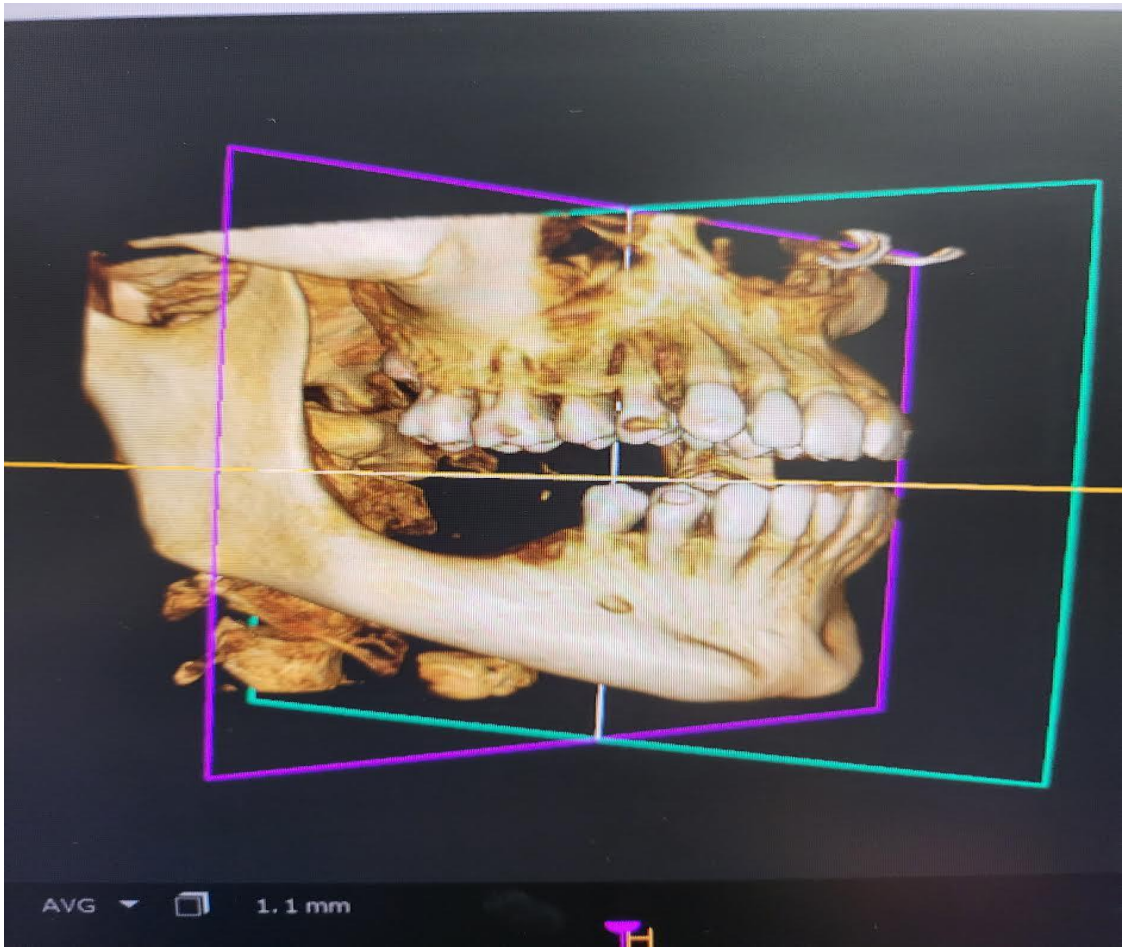


Figure7: 4 months post treatment with debridement and Cryotherapy.

DISCUSSION

Cementoblastoma is a benign lesion of odontogenic origin. There are few case reports in literature looking at behavior and treatment option available. This lesion is usually associated with posterior molar and premolars with majority occurring in lower jaw.[6] The differential of this lesion could include osteoblastoma, hypercementosis, ossifying fibroma or dysplasia.[7]

This patient did present with some of the characteristic findings described in literature including root resorption, peripheral radiolucency and expansile lesion. The radiographic findings were also consistent with mixture of radiolucency and opacifications.[8] However, this case was concerning since the usual presentation of cementobalstoma is a well circumscribed lesion which easily can be enucleated. This case presented no obvious demarcation and separation of lesion from bone both radiographically and surgically. The patient's inferior alveolar nerve and lingual nerve where at significant risk during excision of this lesion.

It is well understood that this lesion does have a high recurrence rate.[9] The decision to preserve inferior alveolar nerve using maximal debridement and cryotherapy was to step her treatment progression from more conservative to aggressive if necessary. Even though en bloc resection is curative, the morbidity from permanent anesthesia of lower lip and gingiva and need for further reconstructive treatments, scarring and disfigurement of the face for resection and donor site morbidity needs to be balanced versus chance of recurrence and second operation. At

present time, she is stable and no growth has occurred and continued follow up is necessary to ensure future success.

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