



Atypical presentation of a cementoblastoma treated through a Weber-Ferguson approach

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Abstract

Objective: This paper presents a clinical case of atypical of cementoblastoma in the posterior maxilla large, treated by resection through Weber-Fergusson transfacial access.

Case description: a 21-year-old white man was referred to the Oral and Maxillofacial Department for the treatment of a lesion on the right side of the face that had appeared 4 years earlier. Intraoral examination revealed a hard swelling of normal mucosa color on the right side that involved the maxillary premolar and molar area. Radiography showed a radiopaque lesion surrounded by a radiolucent halo that involved the right premolars and molars. Computed tomography revealed an exophytic and endophytic growth pattern of the lesion, which invaded the maxillary sinus and extended superiorly into the orbital floor, medially into the nasal fossa and posteriorly into the pterygomaxillary space. Incisional biopsy was performed with the diagnosis of cementoblastoma. Definitive treatment consisted of resection of the tumor through a Weber-Ferguson approach to permit good visualization and complete removal of the tumor, thus minimizing the possibility of recurrence.

Conclusion: The Weber-Ferguson approach provided good esthetic and functional results and there are no signs of recurrence or formation of an oroantral communication after 2 years of follow-up.

Key words: Cementoblastoma, Surgery, Weber-Ferguson

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Apresentação atípica de cementoblastoma, tratado por meio de acesso Weber-Ferguson

Resumo

Objetivo: apresentar um caso atípico de cementoblastoma em maxila posterior de grandes dimensões, tratado por meio de ressecção através do acesso transfacial do tipo Weber-Fergusson.

Descrição do caso: paciente de 21 anos, sexo masculino, leucoderma, compareceu ao setor de Cirurgia Oral e Maxilofacial para tratar lesão do lado direito da face com 4 anos de evolução. No exame intra-oral observou-se uma lesão endurecida a palpação, de coloração normal, localizada no lado direito da maxila envolvendo pré-molares e molares. Radiograficamente existia uma área radiolúcida com bordas radiopacas envolvendo pré-molares e molares. A tomografia computadorizada revelou um padrão de crescimento da lesão tanto exofítico quanto endofítico, com envolvimento do seio maxilar e estendendo-se para o assoalho orbital superiormente, fossa nasal medialmente e espaço pterigomaxilar posteriormente. Após biópsia com diagnóstico de cementoblastoma, o tratamento definitivo consistiu de ressecção através do acesso transfacial tipo Weber-Fergusson para permitir boa visualização e completa remoção do tumor, minimizando a possibilidade de recidiva.

Conclusão: o acesso de Weber-Fergusson forneceu um bom resultado estético funcional e após 2 anos de acompanhamento não existem sinais de recidiva da lesão ou comunicação buco-sinusal.

Palavras-chave: Cementoblastoma; cirurgia; Weber-Ferguson

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Received: September 23, 2014

Accepted: November 05, 2014

Conflict of Interests: The authors state that there are no financial and personal conflicts of interest that could have inappropriately influenced their work.

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Introduction

Cementoblastoma is a rare ectomesenchymal odontogenic tumor [1] that accounts for 0.8% to 2.6% of all odontogenic tumors [2-4]. Histologically, cementoblastomas resemble osteoblastomas and the primary distinguishing feature is fusion of the tumor with the cementum of the affected tooth, a characteristic that can be demonstrated by gross inspection of the specimen. Cementoblastomas mainly affect young adults before the age of 30. No gender or racial predilection has been reported. The most common site of occurrence is the mandibular premolar and molar area, accounting for about 75% of the cases reported [5].

Clinically, cementoblastomas differ markedly from other odontogenic tumors because of the frequent occurrence of toothache pain associated with the tumor. Local swelling is observed in about 70% of cases. Radiographically, cementoblastomas appear as a radiopaque mass fused with the roots of affected teeth that are surrounded by a peripheral radiolucent halo. The radiographic feature of an intimate relationship between the tumor and roots is nearly a pathognomonic sign [6]. The treatment of choice for cementoblastomas is enucleation combined with extraction of the affected teeth. This approach has a good prognosis and few cases of recurrence have been reported in the literature [7].

This study reports an atypical case of cementoblastoma located in the posterior maxilla that involved the maxillary sinus and extended into the orbital floor and pterygomaxillary space. Treatment consisted of enucleation using a transfacial approach through a Weber-Ferguson incision.

Case Description

A 21-year-old white man was referred to the Oral and Maxillofacial Department for the treatment of a lesion on the right side of the face that had appeared 4 years earlier. The patient presented episodes of pain, facial asymmetry, and an actively draining cutaneous fistula. Intraoral examination revealed a hard swelling of normal mucosa color on the right side that involved the maxillary premolar and molar area. The swelling did not drain into the oral cavity. Preoperative clinical management consisted of antibiotic therapy and oral analgesics for regression of infectious symptoms and pain relief, in addition to moist heat physiotherapy.

Radiography showed a radiopaque lesion surrounded by a radiolucent halo that involved the right premolars and molars. Computed tomography revealed an exophytic and endophytic growth pattern of the lesion, which invaded the maxillary sinus and extended superiorly into the orbital floor, medially into the nasal fossa and posteriorly into the pterygomaxillary space (Figures 1 and 2).

After regression of the infectious symptoms, an incisional biopsy was performed which confirmed the diagnosis of cementoblastoma. Definitive treatment consisted of resection of the tumor through a Weber-Ferguson approach to permit good visualization and complete removal of the tumor, thus minimizing the possibility of recurrence (Figures 3 and 4). For flap closure, a suspension suture was fabricated and the flap was closed by first intention without the need for a tissue graft or flap rotation. Histopathologic analysis of the surgical specimen confirmed the diagnosis of cementoblastoma (Figure 5).

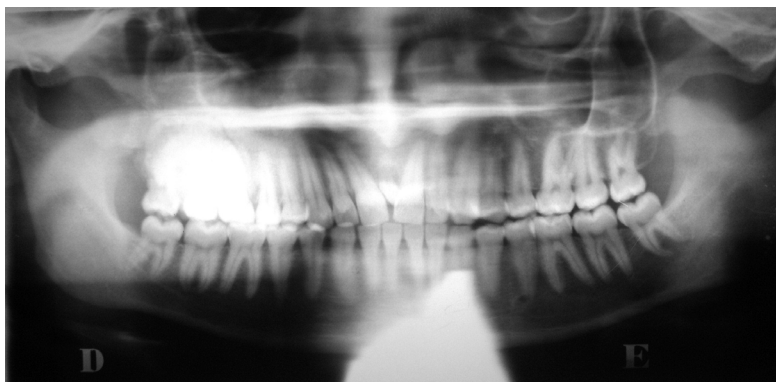


Fig. 1. Radiopaque lesion involving molars and pre molars on the right side.

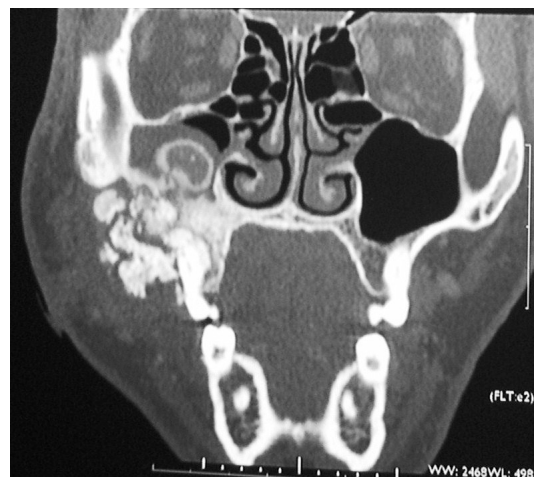


Fig. 2. Expansion of the lesion towards upper medial and lateral.

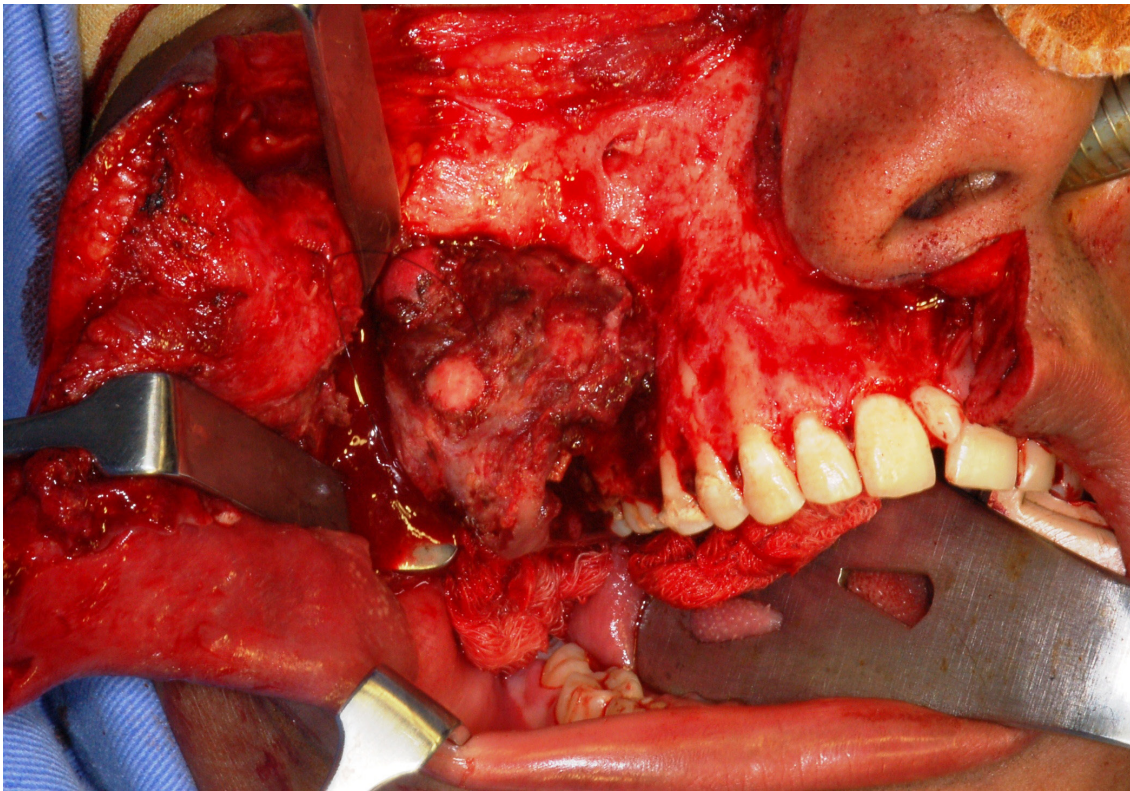


Fig. 3. Exposure of the lesion.

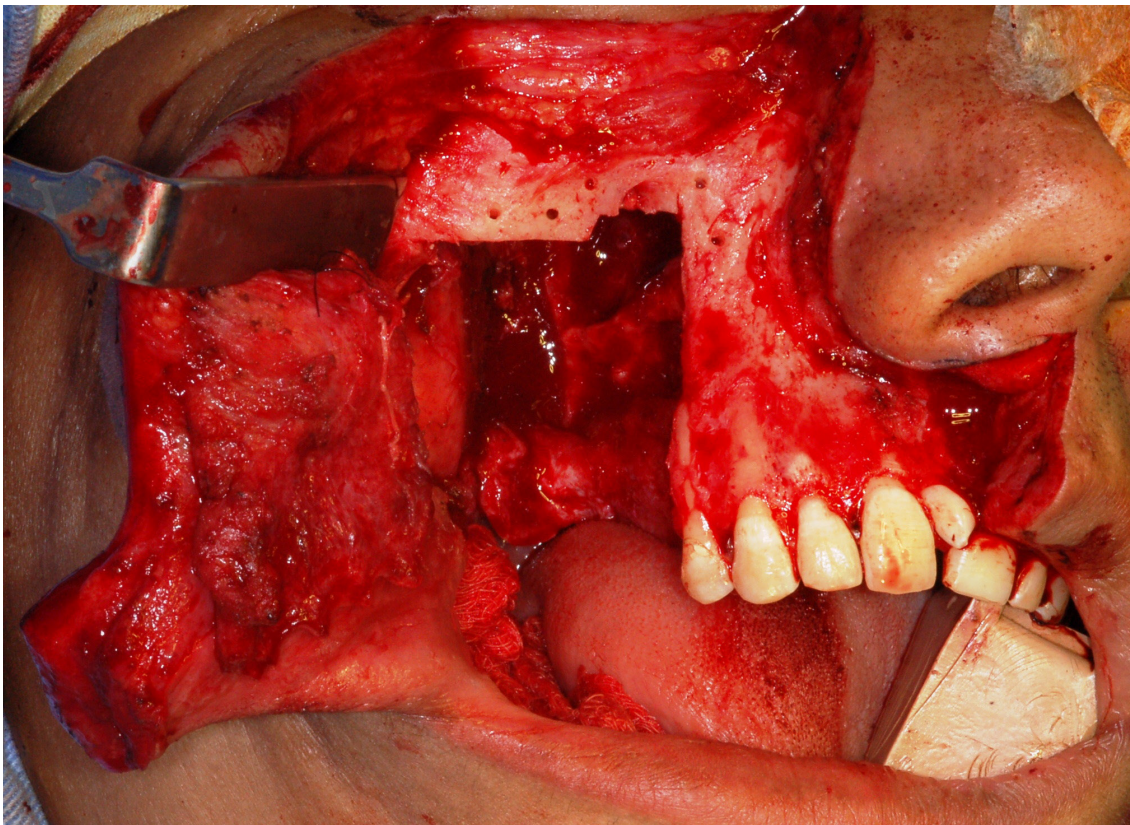


Fig. 4. Surgical aspect after tumor excision.

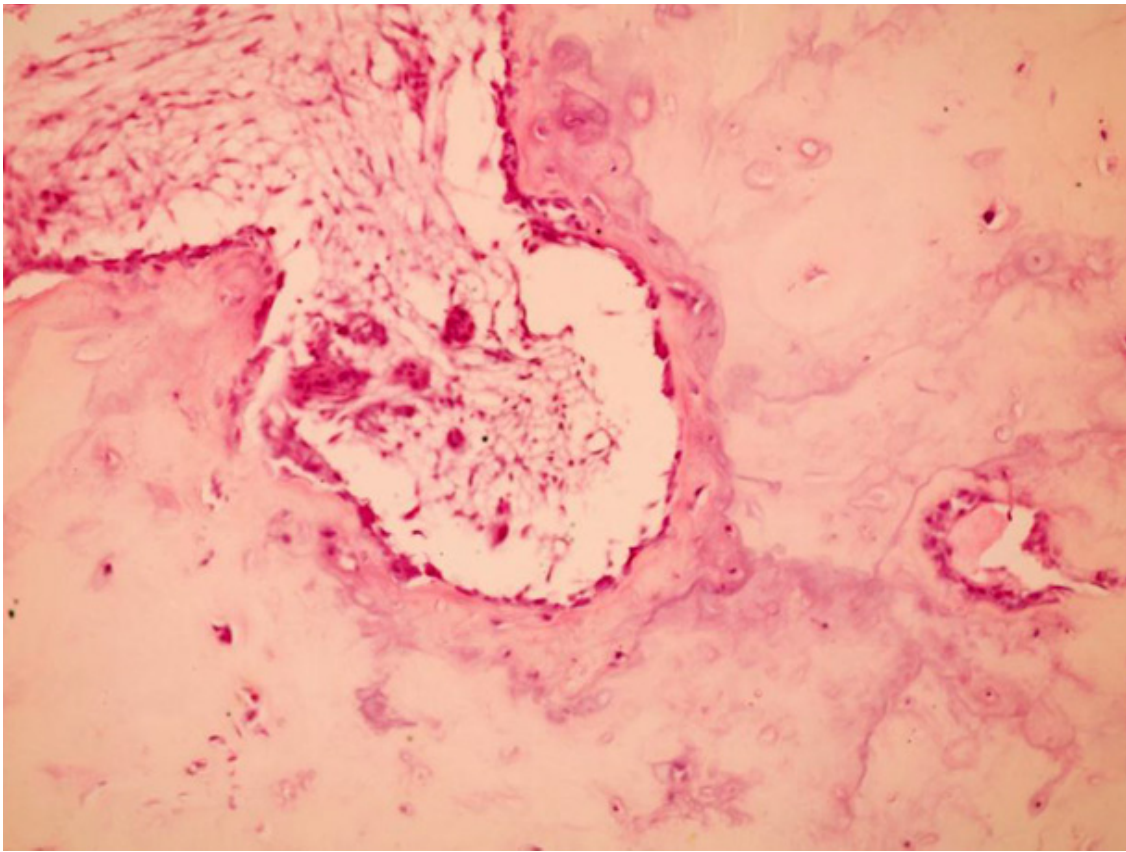


Fig. 5. 200X: Mineralized matrix aspect of cementum displaying basophilic osteoid reverse lines, with gap cementocytes inside and blast cells bordering the mineralized structure.

The patient had been followed up for 2 years and showed a good esthetic outcome and no signs radiographic of recurrence (Figure 6).

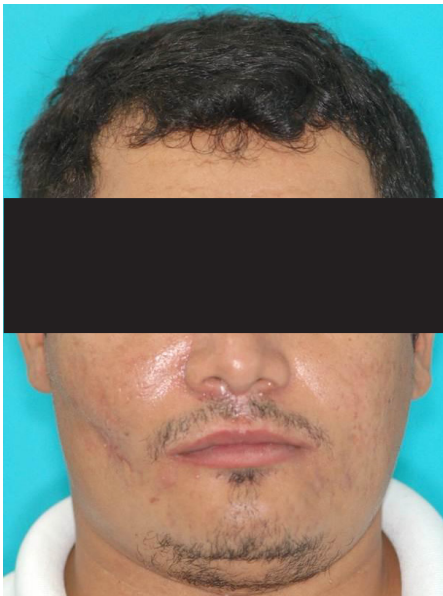


Fig. 6. Aesthetic result

Discussion

Cementoblastoma is a rare odontogenic tumor that affects individuals in the second and third decades of life. The most common site of occurrence is the mandibular molar and premolar area and only few cases involving the maxilla have been reported in the literature [5]. Cementoblastomas are slow growing and often asymptomatic. However, toothache pain and bony swelling resulting from the growth of the tumor rather than from an infectious process [6]. The patient had no pain until the occurrence of an infectious process that caused swelling, a cutaneous fistula, and associated local pain. The absence of local symptoms and growth of the tumor into the jaw contributed to the late diagnosis, despite the large size of the cementoblastoma, the dentofacial deformity was only detected after secondary infection.

Radiographically, cementoblastomas appear as a radiopaque mass surrounded by a radiolucent halo and attached to the roots of the affected teeth [6]. Computed tomography is an important tool for the diagnosis of cementoblastomas, particularly those involving the maxilla, since it provides overlapping images that help establish the size of the tumor and its relationship with other anatomical structures. In addition, tomography permits to confirm the radiographic findings compatible with cementoblastoma. In



the present case, three-dimensional imaging of the tumor was important for surgical planning.

The treatment of choice for cementoblastomas is surgical enucleation and curettage, followed or not by extraction of the affected teeth. Recurrence is possible if the tumor is not completely removed. The incidence of recurrence is higher in cases in which the teeth are maintained or when surgical access is difficult and adequate visualization is not possible [7-10]. In the present case, the tumor was located in the posterior maxilla and involved the maxillary sinus, a fact requiring a more complex surgical technique. A Weber-Ferguson approach was preferred because of the need for good visualization considering the difficult access and size of the tumor and because direct vision was necessary for adequate hemostasia. Using this approach, the tumor was detached, followed by curettage of tumor remnants inside the maxillary sinus and peripheral osteotomy to minimize the possibility of recurrence.

The Weber-Ferguson incision used in the present case can be made in parts or can even be extended, if necessary, through additional incisions and dissections. The external scar is minimal since it is located between the esthetic subunits of the face. Although this type of incision is more frequently used in maxillectomies for the treatment of malignant cancers [11,12], it is also indicated when good visibility of the operative field is necessary, irrespective of the origin of the tumor [13].

Some factors should be considered during surgery to achieve a good esthetic result and to minimize the possible formation of an oroantral communication. Maintenance of the incision 1-2 mm lateral to the base of the nose facilitates suture during closure. In addition, the lateral nasal incision should be made along the topographic border between the cheek and nose to improve the esthetic result. In contrast, the intraoral incision should be made along the alveolar process and there are two different approaches to position it [14,15]. The choice of either approach will depend on whether or not the soft tissues and alveolar ridge are utilized and is determined by the needs of the patient. In the present case, the alveolar ridge, teeth, and part of the gingival tissue surrounding the tumor were not utilized. The oral soft tissue remnants were repositioned inferiorly and sutured passively to the palatine region without the need for a rotation flap or grafts.

Another important aspect is the need for suspension of soft tissues, which should be attached to the skeletal

structure. Suspension problems can lead to ectropion, scar enhancement and/or hanging of the middle third of the face. These suspension sutures should be performed using nonresorbable or slowly resorbable suture material [14]. The consideration of these aspects in the planning and execution of surgery contributed to the satisfactory outcome in the present case. The Weber-Ferguson approach provided good esthetic and functional results and there are no signs of recurrence after 2 years of follow-up.

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