MANDIBULAR AMELOBLASTOMA RECURRENCE: RADICAL APPROACH WITH IMMEDIATE RECONSTRUCTION

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ABSTRACT

Ameloblastoma is a benign odontogenic tumor of epithelial origin, with specific clinical features as cortical expansion, painless, associated with tooth displacement and root resorption. Ameloblastoma treatment is controversial. There are conservative and aggressive treatment options, ranging from a simple enucleation associated or not with curettage to a complete mandibular resection with secure margins. This paper aims to expose a clinical case of a 60 years old patient, male, who presented with an ameloblastoma in right mandibular body 15 years ago treated by a conservative way. Treatment failed and tumor recurred 2 years ago when radical treatment option based on mandibular resection and immediate reconstruction with anterior iliac crest graft was chosen. Then, resection of ameloblastoma and immediate reconstruction proved to be a secure and effective option, providing satisfactory functional and aesthetic results as facial symmetry and later dental rehabilitation.

KEYWORDS: Ameloblastoma, reconstruction, oral pathology.

1. INTRODUCTION

The ameloblastoma is a benign odontogenic tumor of epithelial origin, derived from odontogenic epithelium or the basal cell layer of the epithelium lining the maxillae¹,², locally invasive and rarely undergo malignant transformation³. On the list of benign facial tumors, it is considered one of the most aggressive, with a high recurrence rate.

These tumors represent about 1% of all tumors of the oral cavity⁴. Regarding the location, it can occur in any region of the maxilla and mandible, while 99.1% of tumors are more prevalent in the mandible⁵. Like clinical characteristics, presentation is usually painless with cortical bone expansion, associated or not with tooth displacement.

The imaginological characteristics of ameloblastoma resemble other odontogenic or non-odontogenic mandibular pathologies. Although the definitive diagnosis is made by histopathological analysis, clinical and imaging findings through panoramic radiographs and computed tomography (CT) suggest some important features for the differential diagnosis⁶.

Thus, ameloblastoma is classified according to clinical and radiographic findings in three main types¹: a) peripheral ameloblastoma: cannot be diagnosed radiographically; b) multicystic ameloblastoma: evidenced radiographically as radiolucent multilocular described as "soap bubbles", characterized by aggressive behavior; c) unicystic ameloblastoma: its radiographic appearance of a radiolucent area is rounded and well defined⁷.

About the treatment, there are currents of differing thoughts, making it a controversial discussion. Although some authors recommend less aggressive intervention, such as enucleation with or without other adjunctive method (curettage, ostectomy, cryotherapy, Carnoy's solution), other studies indicate a radical approach by marginal resection, segmental resection or even total mandibulectomy, in cases of mandibular ameloblastomas of considerable dimensions. Thus, the election of the best therapeutic option for each case is based on factors such as location, size and the clinical type of lesion⁸. The removal of the lesion should be performed aiming to cure the patient and maintain stomatognathic function and facial aesthetic.

This article aims to report a clinical case of recurrent ameloblastoma, previously submitted to a flawed con-
servative therapy and, after recurrence, treated with mandibular resection and immediate reconstruction with autologous anterior iliac crest graft.

2. CASE REPORT

Patient with 60 years old, male, was referred to the Oral and Maxillofacial Surgery Service, Caruaru – PE, via Regional Hospital of the Agreste. He complained of swelling in the body of the jaw, right side, without painful symptoms and associated with a history of previous treatment for an injury to the same location for approximately 15 years ago.

**Figure 1.** Extra oral preoperative appearance. Notice slight volume increase in the right mandibular body.

Physical examination revealed an increase in volume of painless region of the right mandibular body, lack of mobility or tooth displacement (Figure 1). Panoramic radiographs showed multilocular radiolucent area suggestive of osteolysis in the right mandibular body extending to the basal cortex of the mandible. Erosive aspect and mandibular expansion of the cortical bone were noted on the same location, seen on computed tomography (3D reconstruction) (Figure 2, A and B).

**Figure 2.** A) Computed tomography (3D Reconstruction) showing superficial erosion on the right mandibular body; B) A panoramic radiograph. Note region of osteolysis.

In an outpatient setting, incisional biopsy of the lesion presented ameloblastoma as pathological result. Established the definitive diagnosis and knowing about lesion’s recurrence after conservative treatment, we chose radical approach with mandibular resection and reconstruction with anterior iliac crest graft, to be performed in a hospital setting.

After assessment of patient’s general health condition, it was led to the operating room for the surgery, under general anesthesia and local infiltration of 2% lidocaine and epinephrine 1:100,000, submandibular incision combined with intra oral vestibule fund access, exposure of the lesion and subsequent complete resection using reciprocating saw, with 1.5 cm of safety margins. (Figure 3).

**Figure 3.** Resected specimen, involving the entire lesion.

Subsequently, anterior iliac crest graft was removed and modeled to the surgical receiver site, based on the size of the mandibular defect (Figure 4A). The graft was perfectly adapted to the recipient site and fixed by using a reconstruction 2.4mm plate and bicortical screws (2.4 mm x 12 mm) (Figure 4-B). The accessions were sutured in layers.

**Figure 4.** A) Anterior iliac crest graft; B) Correct adjustment of the graft in the defect region; C and D) Appearance of intra oral and extra oral postoperative aspect, 30 days after intervention.

The patient recovered uneventfully without immediate or late postoperative complications (Figure 4 - C and D). The patient keeps on outpatient follow-up from about one year and six months, with no signs of recurrence and adequate aesthetic and functional restoration,
with satisfactory results.

3. DISCUSSION

According to the literature regarding the clinical behavior of ameloblastoma, pathological injury that affected mandibular body of the patient on this case corroborates the general findings, which are: painless evolution, slow expansive growth but locally invasive and the pathognomonic finding of radiolucency in “soap bubbles” or "honeycomb"[5,6].

Due to the locally invasive potential and high recurrence rates reported, the best treatment option remains controversial[4]. Although some studies employ conservative treatment for treating these injuries, ambulatory monitoring showed clinical and radiographic signs of recurrence eight years after conservative treatment, requiring radical treatment to be employed[7]. These findings are similar to the case reported, where it was found to recur 15 years after conservative treatment.

Radical approaches as mandibular resection has some disadvantages, including morbidity of the surgical procedure and the deformity with aesthetic and functional losses that would arise, which is bypassed with immediate reconstructive procedures[8]. The selection of the appropriate type of reconstruction to be used depends mainly on the extent of the remaining defect, the surgeon’s experience and the general health of the patient[6,9].

An important question concerning the mandibular reconstruction after resection of lesions corresponds to the possibility of preservation of cortical basal jaw, which provides higher quality and predictability for repair of bone defects[2]. Nevertheless, as in our case there was basal involvement and then impossibility to maintain this bone bridge, it was necessary to complete mandibular resection.

It is imperative that, in addition to the complete removal of the lesion, it is possible to perform immediate reconstruction of bone structure lost by resection, ensuring aesthetic and functional rehabilitation in a single surgery. Immediate reconstruction has the advantages of preserving the jaw line, maintenance of facial symmetry, mucosal integrity and proper occlusion[8].

In this case, we opted for anterior iliac crest graft by several factors, such as: assessing the extent of the defect, the greater availability of bone volume, ease of removal, less interference in patient’s ambulate comparing to posterior iliac crest graft removal[10]. This type of graft has shown good results in relation to integration and compatibility with dental implants for future rehabilitation[9].

ever, in cases of extensive lesions and/or in cases in which relapses are observed, mandibular resection associated with immediate reconstruction is the best option because it allows adequate removal of the lesion with safety margins and immediate reconstruction, restoring aesthetics and function.

REFERENCES


4. CONCLUSION

While it is still controversial, the ideal treatment for ameloblastoma should be analyzed case by case. How-