CASE REPORT

Treatment of an aggressive central giant cell lesion

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Abstract

Central giant cell lesion (CGCL) is an uncommon alteration of obscure etiology that, although benign, can be highly destructive. This paper presents the case of a patient with CGCL addressing its diagnosis and treatment. An 18-year-old male patient with facial asymmetry due to significant volumetric increase in the right parotid masseteric and submandibular regions with 9 months of evolution attended the Department of Dentistry of Mato Grosso Cancer Hospital. After clinical and imaginological examinations, an incisional biopsy was performed leading to the diagnostic of CGCL. With the negative results for hyperparathyroidism, the lesion reduction was attempted with corticosteroids infiltrations. Due to the lesion extension and the lack of response to the infiltrations, the resection was performed. The patient is in attendance for 2 years without any symptoms of recurrence. Although more prevalent among female, young adults and elderly, the CGCL may present in other patients and the professional must be aware. The therapy of choice in this pathology varies with the aggressiveness and extension of the lesion. More aggressive lesions can lead to more extreme clinical management and involve the need for surgical resection.

Keywords

Giant cells, Mouth rehabilitation, pathology, oral

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Introduction

Central giant cell lesion (CGCL) is an uncommon alteration of obscure etiology that, although benign, can be highly destructive. It may be isolated or in combination with other lesions,¹ and its conclusive diagnosis depends on histopathological examination.²

It is extremely important to know the variation of radiological images produced by CGCL.³⁴ Among its characteristics is the presence of a bony granular pattern in the expanded periphery and in the internal septa.³⁴ In most cases, its edges are rather ill-defined; show multilocular appearance; move teeth and anatomical structures, expand the cortical bone and sometimes perforate it.³⁵

When facing patients diagnosed with CGCL, it should not be ruled out the possibility of the presence of parathyroid disorders.³⁵ Early diagnosis of hyperparathyroidism can be done with the evaluation of all radiographic, biochemical and histopathological parameters. Although the injury is spontaneously resolved after parathyroidectomy, surgical curettage should be well thought out to large lesions, regardless of the lesion site.⁶

In cases of isolated CGCL, the treatment of choice should be carefully defined in accordance with the peculiarities of each case.⁷ Because it is a benign lesion, the correct diagnosis avoids mutilating radical treatments. The curettage is still widely used with high success rate. For large or recurrent lesions, therapy with intralesional injections of corticosteroids can also be used.⁸⁹

This paper presents the case of a patient with CGCL addressing its diagnosis, treatment and rehabilitation.

Case Report

An 18-year-old male patient attended the Department of Dentistry of the Mato Grosso Cancer Hospital complaining of pain and swelling on the right side of the mandible.
Extraoral physical examination showed facial asymmetry due to the significant volume increase in the right parotid-masseteric [Figure 1a] and submandibular regions [Figure 1b] with 9 months of evolution. It was resilient to palpation, had normal skin color and was locally normothermic. The patient had satisfactory mouth opening and free and palpable condyles.

Intraoral physical examination revealed deletion of the lower right gingivolabial sulcus, first and second molars with mobility (floating) and expansion of cortical bone [Figure 1c].

The computed tomography (CT) and three-dimensional reconstruction showed the presence of blowing multilocular lesion, similar in appearance to “moth-eaten,” extending from the second premolar to the third molar with 40 mm in its greatest diameter [Figure 1d and e].

After the incisional biopsy, the histological analysis of the material led to the diagnostic of CGCL. As routine for this injury, tests for dosage of parathyroid hormone, calcium, phosphorus, and alkaline phosphatase were requested. The results were within normal limits. The infiltrations with corticosteroids were performed then, for 6 weeks at a dose of 7 ml of trianclcoloma in each infiltration. After this period, due to the extent of the lesion, associated with no response to medical conservative treatment; it was decided for the lesion resection [Figure 2a].

Curettage of the lesion was performed under general anesthesia with the preservation of the inferior alveolar nerve [Figure 2b], dislocation of the condyle and its fixation to the mandibular titanium reconstruction plate in the 2.4 mm system. Occlusion was maintained through the prior bond of orthodontic buttons for maxillo-mandibular block and to guide the intercuspidation postoperatively [Figure 2c].

The patient is in attendance for 2 years without any symptoms suggestive of recurrence [Figure 2d].

Discussion

CGCL is the subject of much research and discussion, as there are many theories to explain its etiology and clinical features.[7] Although this lesion is the more prevalent among female, young adults[9] and the elderly,[3] the case reported was the 18-year-old male.

In general, CGCL is painless. Paresthesia occurs in 6% of cases.[5] In the case reported, the patient complained of pain and increased volume in the region associated with the lesion.

The CGCL is a bone lesion that presents clinically as an increased volume of the affected area, healthy mucosa, which may involve the expansion of bone structures of the affected area.[2]

In the case presented, the mucosa under which was the lesion presented itself intact and consistent to palpation. However, teeth involved by the injury had marked mobility.
In most cases, CGCL presents itself as a radiolucent lesion with well-defined contours and multilocular appearance, causing bone growth and in some cases, perforation of the cortical bone, characteristics observed in this case.

Panoramic radiographs commonly underestimate the size and limits of the bone pathologies and do not demonstrate clearly their components. These data are important to establish a better prognosis and treatment planning. CT, in the other hand, shows precisely the limits of the lesions, their components, behavior, the exact relation with surrounding structures, as seen in this case.

Faced with a case of CGCL, laboratory tests for dosage of parathyroid hormone, calcium, phosphorus, and alkaline phosphatase must be requested in an attempt to rule out metabolic disorders such as hyperparathyroidism that is often associated with this injury. In this case, the patient showed no change in the required exams.

Treatment of CGCL may vary from conservative to more radical approaches, depending on the aggressiveness and extent of the injury. The injection with corticosteroids is a more conservative approach that induces sclerosis of the lesion. This approach should have a routine radiological follow-up to verify the reduction of the lesion. In more aggressive cases, the reduction of the lesion attempted with the intralesional injection may be followed by surgical treatment or surgical treatment may be performed alone. In this case, the first option was for the conservative treatment, however, due to the absence of response of the lesion and the extension of the lesion, the surgical resection was performed. Currently, the patient is under observation, without signs of recurrence and with the good function of oral structures.

**Conclusion**

Although more prevalent among female, young adults and elderly patients, the CGCL may present in patients with other profiles and the professional must be aware. The therapy of choice in this pathology varies with the aggressiveness and extension of the lesion. More aggressive lesions can lead to more extreme clinical management and involve the need for surgical resection.

**References**