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Case Report

Myositis Ossificans Circumscribed the Masseter Muscle: A Case Report

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Abstract

Background: Circumscribed ossifying myositis is defined to the formation of ectopic non-neoplastic non-calcified bony tissue que forms within the skeletal muscle or soft tissue. When affecting the masticatory muscles, limitation of mouth opening and pain are the most common of Observed Symptoms. Radiographically, are well-circumscribed lesions.

Methods: To present a 45-year-old female patient who attended the outpatient clinic of the Hospital das Clinicas of the Federal University of Goiás, complaining of pain near the anterior border of the right mandibular branch, Which Increased intensity in mouth opening and chewing, where the procedure was performed under anesthesia general, by intraoral access. Presenting diagnosis compatible with circumscribed ossifying myositis.

Results: It was observed that the proposed treatment is effective in face of the presented pathology, being necessary a medium and long-term follow-up, to avoid possible recurrences of the lesion.

Conclusions: Although no treatment protocols described in the literature, the need for surgery, surgical time, recurrence rates and efficacy of non-surgical therapies, myositis have obtained excellent results over the complete removal of the affected area.

Keywords: Masseter; Myositis ossificans Circumscribed; Myositis ossificans Traumatic

Introduction

Thorma [1], first described the circumscribed myositis ossificans, in 1958 as a condition usually caused by calcification and progressive ossification of an intramuscular hematoma. It is defined as the formation of ectopic calcified tissue from non-neoplastic nature, extra bone that forms the skeletal muscle or soft tissue. Etiological factors include local trauma (single or repetitive) and crush injury to the affected muscle [2].

It has been classified into two different groups: Myositis Ossificans Progressive (MOP), also called fibroplasia ossificans progressive, which describes an autosomal dominant disorder confined Myositis Ossificans and (MOC) [3]. Usually develops systemically in the muscles, ligaments, fascia and tendons, reported mainly in the orthopedic literature as a result of repeated trauma in muscles like the femoral quadriceps [4].

Although described, the pathogenesis of MOC remains uncertain, and several theories have been proposed. Having the most accepted concept, the differentiation of extraosseous cells by stimulating morphogenetic proteins released from native bone sources after injury or trauma is the most accepted one [5].

Over 80% of lesions appear in the large muscles of the extremities, rarely occur in the head and neck region [6]. Among the cases, Arima et al [7], in a literature review, reported 26 cases involving the head and neck. The most commonly affected muscles are the masseter (75%), temporal, genioglossus, buccinator, and medial pterygoid. Rare are the cases that have been reported with bilateral involvement.

Myositis ossificans The chewing muscles is infrequently observed in the literature, and the most common clinical finding is the mouth opening limitation and painful condition [8].

The MOC diagnosis can be performed in the evaluation of clinical and radiological signs characteristic, and histopathological confirmation. The differential diagnosis must be performed to rule out malignancies such as sarcomas or chondrosarcoma, like other cancers, such as nodular fasciitis, osteoma, hemangioma or osteocondroma [9].

The objective of this study is to present and discuss a case of circumscribed Myositis Ossificans (MOC) of the right masseter muscle, focusing on diagnosis and treatment.

Case Description and Results

A female patient, 45 years old, attended the outpatient clinic of the Hospital das Clinicas, Federal University of Goiás, complaining of pain near the front edge of the right mandibular branch, which increased in intensity in the mouth opening and chewing. It reported that began approximately two years, with a worsening of the last two months before the initial consultation. During history, the patient did not mention conditions or basic systemic alterations. Clinically, it was noted isolated mobile masses and painful evident in the anterior ramus by bimanual palpation of the masseter muscle. It showed no limitation in range of jaw movement, and the skin over the cheek

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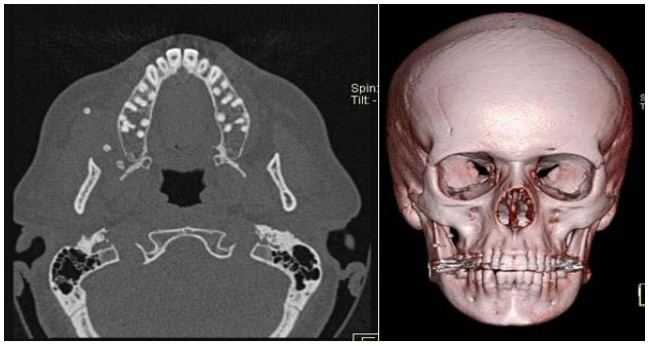

Figures 1, 2: Computed tomography in axial and 3D reconstruction, showing calcified masses in the region of the muscle masseter right.

Figure 3: Transoperative aspect after lesion excision, showing the presence of circumscribed calcified mass.

Figure 4: Specimen.

region and intraoral soft tissues with respect to normal. The duct Stenon showed normal salivary flow.

Computed tomography (Figures 1,2) revealed two circumscribed masses, characterized by small rounded areas with central calcifications, surrounded by peripheral rings high density, suggestive of bone ectopic mature, and a smaller mass completely calcified in the anterior portion of the mandible branch right side. The combination of patient history and clinical and radiographic results in allowed a diagnosis of myositis ossificans hypothesis Circumscribed involving the masseter muscle.

It was decided to perform the procedure in the operating room because of anxiety presented by the patient in consultation and thinking about the comfort of it. The procedure performed under general anesthesia, intubation, infiltrated with bupivacaine and epinephrine (5 ml), intra-oral and extra antisepsis with 2% aqueous chlorhexidine, affixing the field and installation of the oropharyngeal buffer; Background intraoral access right maxillary vestibule mucoperiosteal detachment and excision of the lesion (Figure

Figure 5: Histologically calcified mass has an irregular spot surrounded by muscle fibers.

3). Sutures of accesses with vicryl 4-0, removal of oropharyngeal cap, reversal of general anesthesia, extubation and referral to post anesthesia recovery room. Referred the specimen (Figure 4) for histopathological analysis presented diagnosis compatible with Myositis ossificans Circumscribed. Conducted clinical and radiographic 6 months (Figure 5).

Discussion

Myositis ossificans comprises a group of rare disease with clinical characteristics, radiographic and histological distinct. It is a potentially crippling entity, characterized by the formation of non-neoplastic bone extra bone in skeletal muscle or soft tissue [10].

The etiology of myositis ossificans is generally limited in response to a single episode of severe concussion injury or trauma of repeated minor impact on esquelético [11] muscle. MOC is more common in men, and usually occurs in patients between the ages of 20 and 30, which differs from case report in question [10,12]. most often occurs in the muscles flexor arm, the quadriceps, and the abductor muscles of the thigh. The occurrence involving the head and neck muscles is unusual, but when found, is described in the masseter and temporal [8].

For best accuracy in the diagnosis, it is essential the patient's history. 75% report direct trauma of the event on the affected area. In the acute inflammatory symptoms predominate, pain and fever, while as the chronic symptoms due to muscle atrophy. The main clinical symptom of MOC is progressive restriction of mouth opening [6,7,12]. Moreover, the radiographic features of the disease can be distinguished from other bone forming lesions, such as osteoblastoma, osteoma, osteochondroma, chondroma, sarcoma, chondrosarcoma and haemangioma intramuscular [3,9].

The calcified masses in our patient could have been interpreted as an intramuscular haemangioma presenting phleboliths. or a diffuse swelling with a floating palpable mass or a red-blue discoloration and outside the mouth or intraoral, however, was detected. No obvious intramuscular vascular injury following CT scan was unnecessary to magnética [13] resonance. The patient reported blunt injury to the right masseter muscle few years ago, followed by pain, which increased in chewing and mouth opening. Thus, the presumptive diagnosis was a heterotopic calcification within the masseter muscle associated with the trauma.

Microscopically presents a typical pathological picture, with

3 layers zoning, by fibroblast proliferation with irregular areas of osteoid production. The phleboliths macroscopically resemble the MOC, however, histologically presents calculations of characteristic concentric structure that shows red cells and calcified fibrinous material [13,14]. In the current case, MOC was confirmed by the absence of any vascular component in the sample.

Since the MOC is a benign lesion and pseudoarcomatosa with a limited potential for growth, Conservative surgical excision and prevention of muscle trauma are repeated dressings. The excision of the MOC is best accomplished during the mature phase of injury, when it is chiselled from cincundante soft tissue and skeletal muscle. Surgical treatment of MOC in its early stages can lead to recidives [15].

Conclusion

According to the present study, we observed that the treatment of complete circumscribed myositis obtained satisfactory functional results. However, there is a need for the development and validation of surgical and non-surgical treatment protocols.

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References

1. Thoma KH. Oral Surgery (ed 3).St Louis, MO, Mosby, 1958; 1568.
2. Boffano P, Zavattero E, Bosco G, Berrone S. Myositis ossificans of the left medial pterygoid muscle: case report and review of the literature of myositis ossificans of masticatory muscles. Craniomaxillofac Trauma Reconstr. 2014; 7: 43-50.
3. Jiang Q, Chen MJ, Yang C, Qiu YT, Tian Z, Zhang ZY, Qiu WL. Post-infectious myositis ossificans in medial, lateral pterygoid muscles: a case report and review of the literature. Oncol Lett. 2015; 9: 920-926.
4. Schiff MJ, Meara DJ. Myositis ossificans of the temporalis muscle: case report and review of the literature. J Oral Maxillofac Surg. 2013; 71: 1893-1898.
5. Kaplan FS, Seemann P, Haupt J, Xu M, Lounev VY, Mullins M, Shore EM. Investigations of activated ACVR1/ALK2, a bone morphogenetic protein type I receptor, that causes fibrodysplasia ossificans progressiva. Methods Enzymol. 2010; 484: 357-373.
6. Guarda-Nardini L, Piccotti F, Ferronato G, Manfredini D. Myositis ossificans traumatica of the temporalis muscle: a case report and diagnostic considerations. Oral Maxillofac Surg. 2012; 16: 221-225.
7. Akoi T, Naito H, Ota Y, et al: Myositis ossificans traumatica of the masticatory muscles: Review of the literature and report of a case. J Oral Maxillofac Surg. 2002; 60:1083.
8. Nizel AE, Prigge EK. Trismus due to myositis ossificans traumatica; report of a case. J Oral Surg. 1946; 4: 93-101.
9. Fité-Trepat L, Martos-Fernández M, Alberola-Ferranti M, Romanini-Montecino C, Saez-Barba M, Bescós-Atín C. Myositis ossificans of the masseter muscle: a rare location. Report of a case and review of literature. J Clin Exp Dent. 2016; 8: 210-213.
10. Myoken Y, Sugata T, Tanaka S. Traumatic myositis ossificans of the temporal and masseter muscle. Br J Oral Maxillofac Surg. 1998; 36: 76.
11. Uematsu Y, Nishibayashi H, Fujita K, et al: Myositis ossificans of the temporal muscle as a primary scalp tumor. Case report. Neurol Med Chir (Tokyo). 2005; 45: 56.
12. Amendola MA, Glazer GM, Agha FP, et al: Myositis ossificans circumscripta: Computed tomographic diagnosis. Radiology. 1983; 149: 775.
13. Drane WE. Myositis ossificans and the three-phase bone scan.AJR. 1984; 142:179.
14. Okayama A, Futani H, Kyo F, Maruo S, Koezuka A, Kinoshita G. Usefulness of ultrasonography for early recurrent myositis ossificans. J Orthop Sci. 2003; 8: 239.
15. Rattan V, Rai S, Vaiphei K. Use of buccal pad of fat to prevent heterotopic bone formation after excision of myositis ossificans of medial pterygoid muscle. J Oral Maxillofac Surg. 2008; 66:1518-1522.