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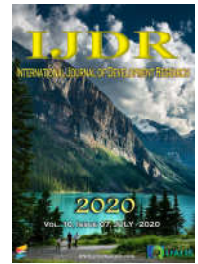
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USE OF BARBATIMÃO (*STRYPHODENDRON ADSTRINGENS*) IN THE TREATMENT OF ODONTOGENIC CERVICAL NECROTIZING FASCIITIS: A CASE REPORT

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ABSTRACT

Necrotizing fasciitis is an uncommon infection that causes severe destruction of soft tissues, which can lead to death if aggressive treatment is not adopted. A case of Necrotizing Fasciitis of odontogenic origin will be narrated in a patient with Down Syndrome, victim of a mandible fracture. On admission, the patient underwent imaging and laboratory tests (CT) and, afterwards, underwent general anesthesia for multiple extractions and fracture osteosynthesis. The patient presented, in the postoperative period, osteomyelitis with extraoral tissue necrosis, which evolved to Necrotizing Fasciitis and required a re-approach to remove necrotic bone tissue with the installation of a 2.4 plaque through the extraoral route. Because of the formation of a necrosis area, treatment with antibiotics and dressing with Barbatimão ointment was chosen, with a good evolution of the condition, with satisfactory healing. In the fourth postoperative month there was formation of granulation tissue and intraoral bone exposure that was treated with debridement and suture, in addition to removal of devitalized bone tissue and a screw located in the region, leading to remission of the condition and return to normal state.

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INTRODUCTION

According to Ord (2009), Necrotizing Fasciitis is a bacterial infection of the soft tissue without predilection for sex and age, uncommon and with a high potential to lead to death (around 40%). Junior *et al* in an article published in 2011 (Junior, 2011) report that the most common origin is odontogenic (abscesses, periodontal disease, etc.) or the pharynx. Presents risk factors for uncontrolled diabetes mellitus, liver disease, immunological diseases and vascular disorders (Kuncir, 2003) According to Wolf (Wolf, 2008), this disease has characteristics of polymicrobial origin, being classified as type I (mixed flora composed of mandatory and optional anaerobic bacteria belonging to group A) and type II (which have group A Streptococcus bacteria alone or together with Staphylococcus aureus). Costa *et al* (Costa, 2004) emphasized the importance of computed tomography as an important tool for the diagnosis of Necrotizing Fasciitis, allowing the possibility to limit the extent of the infection. Barbatimão is a plant found in the Brazilian Cerrado, which has action on wounds as healing and antimicrobial. (Pereira, 2013; Frelik, 2017; Berg, 2016) In the present article, we report a case of a jaw fracture that evolved to Osteomyelitis and Necrotizing Fasciitis treated with debridement, multiple extractions, exchange of bone synthesis

material, removal of devitalized bone tissue, antibiotic therapy and barbatimão ointment.

CASE REPORT

Female patient, 40 years old, with Down syndrome, non-collaborator, non-contacting, attended the emergency room of the hospital, brought by her legal guardian, with pain in the jaw, crackling and bone mobility in the right mandibular body and symphysis mandibular, with edema and severe pain in the regions mentioned after falling from a height. In the intraoral examination, a patient with poor oral hygiene and several root remains in the maxilla and mandible, edema and hematoma in the background of the buccal sulcus. On the external examination, the patient presents with submandibular and submental edema, crackling and bone mobility in the right mandibular body and symphysis with intense salivation. Radiographic and laboratory exams were performed that confirmed the mandible with severe degree of atrophy and the diagnostic hypothesis of multiple fractures in the mandible. We also started antibiotic coverage with cephalothin (1gr and 6/6 hours). The patient underwent general anesthesia to remove root debris and osteosynthesis of the referred fractures with 2.0 plates and screws intraorally, having a good evolution and being discharged on the third postoperative day.

On the fifteenth postoperative day, the patient came to the hospital with significant submental edema, with the removal of purulent secretion and tissue necrosis with bone exposure. She was admitted for surgical re-approach, the purpose of which was to remove necrotic tissue and exchange the bone fixation material for a 2.4 plate. This objective was successfully achieved and we kept the patient hospitalized for antibiotic treatment, since she did not cooperate, having to be kept sedated in order to change the dressing and maintain venous access in the upper limb. On the fourth postoperative day (readmission), an extraoral suture dehiscence and purulent secretion started. Thus, we changed the antibiotic therapy to Clindamycin (600mg and 6/6 hours). After 72 hours, as there was no improvement in the condition, we started topical barbatimão application twice a day. Systemic changes were noticed on the fifteenth day with fever, altered laboratory tests (presence of 1.0 mm³ Metamielocytes; C Reactive Protein: 56.9) and prostration. Through this situation, we suspended Clindamycin and started Oxacillin (2gr ev 4/4 hs) and Clavulin (1 gr 8/8 hs) and performed a Chest CT with Contrast to exclude the suspicion of Mediastinitis. From the changes made there was a good evolution of the condition with progressive epithelialization of the wound and total closure.

The patient was discharged thirty days after surgery, with instructions to maintain the use of barbatimão once a day and Clavulin (500 mg v 8/8 hrs) for 30 days, with a weekly return scheduled for follow-up of the evolution for another thirty days, and after that period, the patient was discharged. Four months after the re-approach, the patient came to the clinic with a healing granuloma and an extraoral fistula in a submental region with purulent secretion in a small amount of dehiscence area. In the intraoral examination, bone exposure is observed with fragment mobility. In the image examination performed, an area of radiolucency is perceived around a screw fixing the plate and non-integrated bone fragment and, for the reasons above, we opted for the surgical exploration of the area through the intraoral route. In surgical exploration, a non-integrated and devitalized bone fragment and a screw were removed without impairing stability. Intraoral suture was performed with vycril 3-0 thread and the granulation tissue was removed with revival of the tissue edges by planes. A suture was also performed with vycril 3-0 for deep planes and nylon 5-0 for skin with satisfactory resolution of the case.

DISCUSSION

In this article I report a case of a patient with Down Syndrome who suffered mandibular trauma leading to multiple fractures and whose complications evolved to a more serious situation until Necrotizing Fasciitis. (Júnior, 2011; Whitesides, 2000) According to McGurk (McGurk, 2003) and Gunarate *et al.* (2018), Necrotizing Fasciitis is not a new disease. It was described by Hippocrates (460 B.C. - 377 B.C.) as “a great loss of flesh, tendons and bones; and the deflection that rested on the parts was not like pus, but with a kind of putrefaction and derives from an infection known as Ludwig's Angina (Manasia, 2016). According to Gunarate (2018) the term Necrotizing Fasciitis was coined by Wilson in 1952, but in the past there were different terms, such as: malignant ulcer, gangrenous ulcer, erysipelas gangrenous, necrotizing cellulite, necrotizing erysipelas, phagedenis ganglion ulcer, phagedenisphagedenis, phagedenis ganglia, gangrenous erysipelas, Fournier's gangrene, hospital gangrene and hemolytic streptococcal gangrene (Meleney's bacterial gangrene). Júnior *et al.* (2011)

and Gunarate *et al.* (2018) report that the rate of morbidity and mortality is variable, from unknown to 30%. Necrotizing fasciitis is characterized by tissue necrosis and gas formation in subcutaneous tissues, fascia and deep tissues. (Gore, 2018; Camino, 2014; Irani, 2017) It is a complication of aggressive cellulite that usually has its origin in odontogenic infections such as dental abscesses, chronic periodontal disease or pharyngeal origin, (Júnior *et al.*, 2011; Kuncir, 2011; Gore, 2018; Irani, 2017) iatrogenic, postoperative, salivary gland infections, skin, middle ear infection or mastoiditis (Gunarate *et al.*, 2018; Shaariyah *et al.*, 2010; Chua *et al.*, 2002), herpes simplex or herpes zoster (Fung *et al.*, 2012; Ha Ky, 2013) and cancer-derived infections. (Gunarate, 2018) The infection can be caused by several types of bacteria, as described in the literature (McGurk, 2003; Gore, 2018; Camino *et al.*, 2014; Irani, 2017; Oguz *et al.*, 2012) and this leads to the need to adapt treatment with antibiotics, based on the results of tests such as antibiogram, culture and clinical evolution of the condition. (Gunarate *et al.*, 2018; Gore, 2018) There is consensus in the articles researched that systemic factors, such as immunocompromised individuals, diabetics, alcoholism, cirrhosis, arteriosclerosis, HIV, patients with chronic kidney problems, cancer patients, injecting drug users, patients with chronic use of corticosteroids and obesity are factors that aggravate and / or delay the course of treatment. (Ord, 2009; Wolf, 2008; Gore, 2018; Camino, 2014; Mastronikolis *et al.*, 2010; Weiss *et al.*, 2011) The treatment recommended by McGurk (McGurk, 2003), Júnior (Júnior *et al.*, 2011) and Gunarate (Gunarate *et al.*, 2018) involves an aggressive surgical approach to remove the causative element (s), and exploration of facial spaces, removal of necrotic tissue and initiation of broad antibiotic therapy. Spectrum even without the result of antibiogram and culture.

In the works published by Wolf (Wolf, 2008) and McGurk (McGurk *et al.*, 2003) it is reported that after necrosis stabilization, grafts can be used to reconstruct lost skin. Barbatimão (*Stryphnodendron barbatiman*) from the Mimosaceae family, is a characteristic plant of the Brazilian cerrado, rich in tannin, alkaloids, starch, flavonoids, proanthocyanidins, resinous, mucilaginous materials, dyes, saponins, flobafen and soluble glycid. Its use is wide and can be used as an antiseptic, anti-inflammatory, hemostatic, anti-edematogenic, antioxidant, antidiabetic, astringent, antihypertensive, analgesic, healing, antimicrobial and in the treatment of various skin infections. (Pereira *et al.*, 2013; Frelik, 2017; Berg, 2016) It is administered for the treatment of gonorrhea, leukorrhea, hernia, malaria, liver disorders, hemorrhagic wounds, burns, diarrhea, gastritis, ulcers, rheumatism, kidney problems, sore throats, hemorrhoids and conjunctivitis. (Pereira *et al.*, 2013; Frelik *et al.*, 2017) Tannin is a phenolic, water-soluble substance that stimulates the healing process by binding to the proteins of injured tissues creating a protection that isolates the wound leading to a reduction in the permeability and exudation of the wound, stimulating tissue repair. (Pereira *et al.*, 2013; Frelik *et al.*, 2017) Its properties include the formation of complexes with metal ions, antioxidant and free radical scavenging activity and the ability to form complexes with other molecules such as proteins and polysaccharides. (Pereira *et al.*, 2013; Frelik *et al.*, 2017)

Conclusion: Necrotizing fasciitis is not a common complication of dental treatments, but, when diagnosed, we must act promptly, with the use of correct means of diagnosis

(tomography, angiotomography, laboratory tests), initiation of aggressive antibiotic therapy and multidisciplinary involvement in order to obtain a good evolution. Barbatimão is widely used in Medicine and Dentistry due to its properties already described. It is a herbal medicine used in dressings, being effective and showing a good result in the reported case, but it should be used under the guidance and supervision of a health professional, as its side and toxic effects are not fully known.

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