Chronic myalgia centrally mediated

Mialgia crônica mediada centralmente

Felipe Lara FRANCISCHETTI1
Antônio Márcio Lima FERRAZ JÚNIOR1
Luciano Ambrosio FERREIRA1
Antonio Carlos Pires CARVALHO1
Josemar Parreira GUIMARÃES1

ABSTRACT

The clinical case report of a 50-year-old patient who presented to the Diagnostic and Guidance Service for Patients with Temporomandibular Disorders, at the School of Dentistry, Federal University of Juiz de Fora, with complaint of pain in the facial muscles in a continuous, throbbing manner that was paroxysmal at times, with severe intensity and of a chronic nature. After semiological interdisciplinary examination (dental, speech and physical therapy), the diagnosis suggestive of temporomandibular disorder was reached, characterized by centrally mediated chronic myalgia, associated with articular structures, parafunctional habits, malocclusion and emotional factors. Supportive dental treatment consisted of guidance throughout treatment and use of occlusal splints. After a three-and-a-half-month period of interdisciplinary therapy the patient was discharged with an 80% improvement in pain and increase in mouth opening amplitude. Episodes of pain were related only to moments of stress. The patient was instructed about the need for orthodontic treatment and psycho therapy.

Indexing terms: Chronic pain. Interdisciplinary research. Temporomandibular joint disorders.

INTRODUCTION

Temporomandibular disorder is characterized by a variety of signs and symptoms, frequently exacerbated by mandibular movements, which may also be present at rest1-4. The pains may be classified according to the stage at which they are found: acute or chronic5.

Centrally mediated chronic myalgia is a chronic, continuous muscle disorder, originating in the central nervous system, which generates symptoms at the periphery of muscle tissues4. Pain at rest is the key factor of the clinical characteristics of this disorder and probably occurs due to the sensitization of the muscle nociceptors by algogenic substances released in the neurogenic inflammatory process6.

The main therapeutic modalities for this pathological process, described by Okeson4 are: reversible occlusal therapy, restriction of movements of the mandible, adoption of dietary habits, with inclusion of pastier foods and interdisciplinary follow-up.

1 Universidade Federal de Juiz de Fora, Faculdade de Odontologia, Serviço de Diagnóstico e Orientação a Pacientes com Desordens Temporomandibulares (SERVIÇO ATM). Rua José Lourenço Kelmer, Campus Universitário, São Pedro, 36036-900, Juiz de Fora, MG, Brasil. Correspondência para / Correspondence to: FL FRANCISCHETTI. E-mail: <feliplf@gmail.com>.

2 Universidade Federal do Rio de Janeiro, Faculdade de Medicina, Departamento de Radiologia. Rio de Janeiro, RJ, Brasil.
In view of the data obtained in the clinical exam it was possible to reach the diagnosis suggestive of temporomandibular disorder, presenting centrally mediated chronic myalgia, anterior disc displacement with reduction on the right side, with presence of parafunctional habits (clenching and unilateral chewing), malocclusion and emotional stress as additional factors.
Chronic myalgia

movement, pain at res, with exacerbation during movement and intense pain on palpation, the diagnosis of centrally mediated chronic myalgia was reached\(^3\)-\(^6\)-\(^7\).

The patient in question presented various contributing factors for the onset and permanence of centrally mediated chronic myalgia, which were detected by the clinical exam. Although the patho-physiological mechanisms of muscle pain at rest have not been completely elucidated, it is believed to arise from muscle hyperactivity and hyperexcitability of the central nervous system, which are involved in a cycle of feedback\(^4\)-\(^7\)-\(^9\).

Malocclusion is considered an etiologic and aggravating factor of temporomandibular disorder, and may be one of the causes of muscle hyperactivity\(^4\), together with parafunctional habits (such as clenching and unilateral chewing), which general occlusal, muscle and joint overloads. The discrepancy of 3 mm may be a contributory factor to the patient’s symptomatology because, according to Okeson\(^4\), a slide of up to 2 mm in centric relation to centric occlusion is common, but is not considered functionally ideal. In the present case even the functional movements of the mandible, particularly of mastication and speed, aggravated the pains.

Diverse factors are related to limitation of mouth opening. In this clinical case it could be related to a consequence of muscle pain of a chronic and intense nature associated with articular alterations. The limitation of this movement may be considered a sign of temporomandibular disorder\(^1\). This limitation is explained as a mechanism of protection of the tissues involved\(^3\)-\(^12\), and may affect both mastication and speech.\(^1\)-\(^15\)

Radiographic imaging showed an anterior bilateral flattening of the condyle. This sign associated with the medical history of arthrosis in the elbow must alert the dental surgeon to possible later alterations in the bony/cartilaginous components of the temporomandibular joint\(^16\)-\(^17\).

Systemic diseases such as arterial hypertension may be related to a higher level of pain in patients with temporomandibular disorder, mainly when associated with situations of stress\(^3\). The high levels of stress and anxiety of these patients may be one of the causes of and/or contributory to the aggravation of the pathological condition\(^1\).

**CONCLUSION**

Temporomandibular disorder is a pathological condition associated with interrelated factors. Therefore its treatment requires an interdisciplinary approach. The occlusal splint was efficient for the purpose of simulating a satisfactory

The patient was examined by the speech and physical therapy sectors, which recommended a pasty diet and physical therapy exercises. For dental therapy an occlusal splint was used, which was fabricated in order to simulate a physiologically ideal occlusion.

The patient was instructed to use this occlusal splint for 24 h/day initially, and remove it when eating and performing oral hygiene. She reported full improvement of the muscular pains after one week of treatment, and was instructed to continue using the occlusal splint for 24 h/day. After 6 weeks of treatment the patient reported significant improvement of the muscular pains, and headache of only light intensity. She was instructed to reduce the use of the occlusal splint to 16 h/day. After nine months the patient reported an 80% improvement in general pain, presenting localized sensitivity in the masseter muscles bilaterally, with the use of the occlusal splint having been reduced to 12 h/day. In the tenth week, the pain condition remained stable, and only nocturnal use of the occlusal splint (8 h/day) was indicated. In the thirteenth week of using the occlusal splint, there was continued improvement in the general pain condition, with the pains only being manifested in situations of stress; and mouth opening was 42 mm. A term of discharge was signed, and as complementary therapy, orthodontic and psychotherapy evaluations were suggested.

The clinical case in question was conducted in compliance with the ethical principles contained in the Declaration of Helsinki and Chapter IV of the National Health Council Resolution 196/96; also in conformity with the legislation in force in Brazil, and approval of the Research Ethics Committee of the Federal University of Juiz de Fora in Process No.826.170.2009.

**DISCUSSION**

Due to the constant pains over the previous six months, associated with reduced amplitude of mandibular movement, pain at res, with exacerbation during movement and intense pain on palpation, the diagnosis of centrally mediated chronic myalgia was reached\(^3\)-\(^4\)-\(^6\)-\(^7\).

The patient in question presented various contributing factors for the onset and permanence of centrally mediated chronic myalgia, which were detected by the clinical exam. Although the patho-physiological mechanisms of muscle pain at rest have not been completely elucidated, it is believed to arise from muscle hyperactivity and hyperexcitability of the central nervous system, which are involved in a cycle of feedback\(^3\)-\(^7\)-\(^9\).

Malocclusion is considered an etiologic and aggravating factor of temporomandibular disorder, and may be one of the causes of muscle hyperactivity\(^4\), together with parafunctional habits (such as clenching and unilateral chewing), which general occlusal, muscle and joint overloads. The discrepancy of 3 mm may be a contributory factor to the patient’s symptomatology because, according to Okeson\(^4\), a slide of up to 2 mm in centric relation to centric occlusion is common, but is not considered functionally ideal. In the present case even the functional movements of the mandible, particularly of mastication and speed, aggravated the pains.

Diverse factors are related to limitation of mouth opening. In this clinical case it could be related to a consequence of muscle pain of a chronic and intense nature associated with articular alterations. The limitation of this movement may be considered a sign of temporomandibular disorder\(^1\). This limitation is explained as a mechanism of protection of the tissues involved\(^3\)-\(^12\), and may affect both mastication and speech.\(^1\)-\(^15\)

Radiographic imaging showed an anterior bilateral flattening of the condyle. This sign associated with the medical history of arthrosis in the elbow must alert the dental surgeon to possible later alterations in the bony/cartilaginous components of the temporomandibular joint\(^16\)-\(^17\).

Systemic diseases such as arterial hypertension may be related to a higher level of pain in patients with temporomandibular disorder, mainly when associated with situations of stress\(^3\). The high levels of stress and anxiety of these patients may be one of the causes of and/or contributory to the aggravation of the pathological condition\(^1\).

**CONCLUSION**

Temporomandibular disorder is a pathological condition associated with interrelated factors. Therefore its treatment requires an interdisciplinary approach. The occlusal splint was efficient for the purpose of simulating a satisfactory
occlusion that would help to diminish the deleterious effects of the parafunctional habits and malocclusion. The guidance as regards a soft diet, together with the physical therapy exercises were successful in diminishing the masticatory overload, obtaining muscle relaxation, and consequently, in reducing the pain. The presence of various systemic diseases in the patient, associated with high levels of anxiety and stress, may justify the incomplete remission of the symptomatology.

Collaborators

FL FRANCISCETTI was responsible for clinical attendance of the patient, review of the literature and writing the article. AML FERRAZ JÚNIOR, LA Ferreira, ACP Carvalho and JP Guimarães participated in the review of the literature and writing the article.

REFERENCES


