Evaluation of the Commitment of the Tempomandibular Joint in Patients with Rheumatoid Arthritis

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Abstract:
Rheumatoid arthritis (R.A.) is an autoimmune disease, chronic, systemic and progressive that mainly affects peripheral and small joints. The diagnosis is based on the criteria of the American College of Rheumatology (A.C.R.), September 2010. In the definition of the pathology given by the Argentine Society of Rheumatology, it is described that it compromises the temporomandibular joint (T.M.J.). This clinical odontology research would allow a quick guidance and safe markers to TMJ disturbance in RA. Would provide a correct non-invasive diagnosis, treatment and prognosis of this pathology.

Key words: Rheumatoid arthritis, temporomandibular joint, ultrasound.

I. Introduction
Rheumatic diseases are a group of around two hundred diseases that affect the musculoskeletal system and in some cases other organs and systems. Its most frequent clinical manifestations are pain, stiffness and decreased joint mobility, which brings with it, varying degrees of disability. Its importance lies in the incidence and prevalence with which they occur in the general population, associated morbidity and mortality, disability and temporary and permanent disability. [1]

Rheumatoid arthritis (R.A.) is an autoimmune disease that is characterized by peripheral polyarthritis, generally symmetric affecting small joints causing alterations and disabilities. [2]

It is a progressive degenerative disease in which diagnosis and early treatment are determining factors. Because it is a relevant health problem for our country, the Argentine Society of Rheumatology and the National Rehabilitation Service have established the regulations for disability in patients with A.R. [3]

In medical practice emphasis is placed on joints such as knees, hips, elbows, wrists, small joints of hands and feet and we forget other joints that are also important in the proper performance of the basic functions of the human being. [2]

One of the joints that has been altered and little studied in this disease is the temporomandibular joint (TMJ). It is one of the most complex of the human body; it is formed by the mandibular condyle, which fits the glenoid fossa of the temporal bone and is considered as a ginglymoartroidal joint, because it performs hinge and sliding movements. [4] [5]

Although patients may present extreme skeletal situations, only some morphological variations are associated with low level dysfunctions. [6] Anyway, some disorders that affect the T.M.J. they are of unknown origin, among the possible causes are mentioned local disorders such as occlusal disharmonies, bruxism, stress and extractions of the third molar, considered as risk factors and systemic diseases among which include rheumatic conditions such as R.A. [7]

Joint pain has peculiarities, but the pain of the T.M.J. it merges into another set of exclusivesymptomatology. [8] In other chronic pathologies with painful episodes, mechanisms could be developed to support this symptomatology. [9] The conditions of T.M.J. in R.A., they do not usually show pain, because of the adequate...
treatment they receive both to relieve pain and to stop the disease, which include remission-inducing drugs, nonsteroidal anti-inflammatory drugs and corticosteroids. In spite of which, its alteration could modify the quality of life of the patients. It is the joint used in feeding. It alters the quality of rest and sleep, so that the study of their specific conditions would be very important because early diagnosis and adequate treatment is a determinant of prognosis.

II. Objective
To study the involvement of temporomandibular joint in patients with rheumatoid arthritis, through diagnostic imaging methods.

III. Material and Methods
Case-control study, cross-sectional, descriptive and analytical. Inclusion criteria: Patients who were attended in Rheumatology Service of Córdoba Hospital and Sanatorium Allende. Who have signed the informed consent. Exclusion criteria: Patients under 18 years of age. Having any other autoimmune disease. The patients were entering in sequence and divided into the following experimental groups matched for age and sex: Group 1 (C): 40 control patients without AR; Group 2 (R.A.): 20 patients with a diagnosis of RA by 2010 EULAR / ACR criteria. We performed a clinical examination of the oral cavity, with emphasis on TMJ, high resolution and power ultrasound of TMJ, orthopantomography and bilateral XR of condyles with mouth open and shut.

IV. Results
Clinically, no patient had spontaneous pain or tinnitus prior or maintained over time in both groups. In RA patients, 18 (90%) had joint effusion, of which 3 (15%) showed capsular distension; 12 (60%) showed degenerations in inferior condylar head; 10 (50%) reported altered previous dynamic condylar and condylar asymmetry; 2 patients (5%) control group showed minimal effusion.

Figures

Figure 1: Results of T.M.J. ultrasound
Figure 2: Results of T.M.J. radiographic studies.

Illustrations

Illustration I: Patient with joint effusion observed in the closed mouth on the left side

Illustration II: Patient with joint effusion observed in open mouth on the left side
Illustration III: Patient with joint effusion observed in the open mouth on the right side

Illustration IV: Patient with joint effusion observed in the closed mouth on the right side

Illustration V: Patient with condylar degeneration (orthopantomography)

Illustration VI: Patient with condylar degeneration (bilateral condilography)
V. Discussion and Conclusion
The R.A. it is considered as the most frequent rheumatic disease with affection of T.M.J. found in both national and international studies with similar frequency of occurrence between these studies and ours.[10] We emphasize the high incidence of involvement of the temporomandibular joint either unilateral or bilateral. There are different circumstances that could explain this situation, among which the inflammatory process that accompanies R.A. stands out, the use of drugs for the treatment of them, oxidative stress as a generator of proinflammatory cytokines that induce changes both at the level of cartilage and of the articular discs and finally the degenerative process that the articulation undergoes due to aging and the association of the rheumatic disease in question. We note that we conducted a search of both national and international works, but there is little evidence in the literature that refers to research on the incidence of affection of the T.M.J. in R.A., although with respect to the affection of said articulation in other dental processes. We did not find works in asymptomatic T.M.J. [11] [12] A high percentage of patients with rheumatoid arthritis present involvement of the temporo-mandibular joint, despite being asymptomatic. These imaging methods are harmless and constitute an orientation guide for the prevention and early treatment of pathologies that affect the temporomandibular joint. Everything described above demonstrates the need for interdisciplinary teamwork for the treatment of patients with rheumatic conditions among which the presence of odontostomatologists, maxillofacial specialists and rheumatologists is necessary in order to achieve health care with high quality standards.

The T.M.J., frequently, are affected in the course of rheumatic diseases and the time of evolution has a negative effect at the joint level. The R.A. is the rheumatic disease with the highest prevalence of affection in the T.M.J. High resolution ultrasounds, although they are a nonspecific test, could be implemented as a diagnostic approximation technique in RA. This clinical research in the dental area would allow, in the face of an T.M.J. affection in patients with R.A., a rapid access to a correct non-invasive diagnosis and more favourable prognosis of this pathology.

This clinical odontology research would allow a quick guidance and safe markers to T.M.J. disturbance in R.A. Would provide a correct non-invasive diagnosis, treatment and prognosis of this pathology.

References


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