

The Various Aspects of Temporomandibular Joint Disorders and Treatment Approaches

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Editorial

Occlusion is biologically defined as the coordinated functional interaction between the various cell populations forming the masticatory system as they differentiate, model, remodel, fail and repair [1]. Respectively, Temporomandibular Joint Disorders (TMDs) include conditions related not to the temporomandibular joint solely but also to muscles of mastication and related structures.

TMDs are a significant public health issue affecting approximately 5% to 12% of the US population. TMD is the second most common musculoskeletal condition (after chronic low back pain) resulting in pain and disability [2]. Women make up the majority of TMD patients [3].

For decades it was believed that the etiology of TMDs was mainly the result of over closed vertical dimension, condylar position, occlusal disharmony etc. That approach led to treatments based on a variety of invasive and irreversible therapies, including bite-opening, occlusal adjustments, major restorative dentistry, orthodontics and even surgery. Nowadays, this point of view has largely been discredited. Studies have been consistently demonstrating that functional disturbances of the masticatory system can no longer be held as the only causes for TMDs [3].

The most popular theory regarding TMDs etiology today is based on the biopsychosocial model. This refers to a biological pathology that may have psychological antecedents, as well as behavioral consequences; this situation exists in a social framework which produces major negative experiences for the patients. These concepts are the result of multidisciplinary approach which relates to orthopedic principles, aspects of pain processing, pathophysiology of muscle and joints, dental research and behavioral aspects of chronic pain. TMDs pathophysiology may also be importantly influenced by genetic conditions [3]. Studies suggest that ovarian hormones modulate pain in women with TMD, although this relationship is clearly not a simple one. The effects of estrogen on the components of the TMJ may represent an important risk for those genetically more responsive to this hormone [3].

The Research Diagnostic Criteria for Temporomandibular Disorders (RDC/TMD) have been the most widely employed diagnostic protocol for TMD research since its publication in 1992 [4]. This classification system was based on the biopsychosocial model of pain that included an Axis I physical assessment (diagnoses include muscle disorders, disc displacement, arthralgia, osteoarthritis and osteoarthrosis) and an Axis II assessment of psychosocial status and pain-related disability [4,5].

Pain is the most common motivation for patients with TMDs to seek care. Typical complaints are pain in the masticatory muscles and preauricular area, particularly during mandibular movements; stiffness in masticatory muscles; and limitations of mandibular movements. Psychological symptoms are less likely spontaneously reported by patients [6].

There is considerable evidence that TMDs can be viewed primarily as a chronic pain condition that shares many features in common with other chronic pain conditions and hence should be studied and managed from the biopsychosocial perspective [7].

The longer the pain persists, the greater the potential for emergence and amplification of cognitive, psychosocial, and behavioral risk factors, with resultant enhanced pain sensitivity, greater likelihood of additional pain persistence, and reduced probability of success from standard treatments [2].

The conservative reversible forms of therapy are generally aimed at reducing pain, restoring and rehabilitating normal function and decreasing contributing factors. Education and counseling include explanation of the disorder, anticipated course and treatment, and reassurance about its benign nature [7].

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Noninvasive conservative treatments such as soft diet, physiotherapy, oral appliances, and pharmacotherapy and botulinum toxin injections are reported to be effective as first-line therapies for extra-articular pathologic conditions such as myofascial pain and mouth opening limitation [8].

Intra-articular pathologic conditions such as internal derangement and osteoarthritis could also benefit from the reversible interventions used to treat myofascial pain. Acute patients, however, may require intra-articular injection of lidocaine, hyaluronic acid, or corticosteroids. When the symptoms and pain surpass the effectiveness of these techniques, surgical approaches such as arthrocentesis, arthroscopy, and TMJ open surgeries such as arthroplasty may be performed [8].

It is widely accepted that approximately 75-95% of acute TMD patients will markedly improve due to adaptive processes on biological and psychological levels. Failure of therapy may result due to disregarding specific TMD subgroups, individual patient characteristics and comorbidities. Not all patients with TMD may achieve symptom relief with either approach [6].

Clinicians must keep in mind the complicated and assembled nature of TMDs and take into account the many different treatment modalities, relating to anatomical, functional and behavioral aspects. In many cases, team approach is indicated, and may involve practitioners in oral medicine, oral surgery, physiotherapy, pain medicine and mental health.

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