

TEMPOROMANDIBULAR JOINT DYSFUNCTION: PREVALENCE AND CLINICAL CHARACTERISTICS

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Abstract: Temporomandibular joint (TMJ) dysfunction is one of the most common pathologies of the maxillofacial region, characterized by impaired function of the joint, masticatory muscles, and related structures. The aim of this study was to study the epidemiology, clinical manifestations, and diagnostic approaches in CNS dysfunction. The study included data from 47 clinical and population studies covering more than 15,000 patients of various age groups. It has been established that the prevalence of CNS dysfunction ranges from 16% to 59% in the general population, while among patients with symptomatic manifestations, this figure is 8-12%. The disease is more common in women (woman/man ratio = 3–4:1), with the peak incidence occurring in the 20–40 age range.

Key words: temporomandibular joint (TMJ), TMJ dysfunction, arthralgia, myofascial pain, occlusion disorders, psychosomatic disorders

Introduction

The functional integrity of the human dentofacial apparatus is based on the morphofunctional unity of the dental arches, the occlusal plane, the masticatory muscles, and the temporomandibular joint (TMJ). Disruption of the connections within this system triggers not only local dysfunctions but also general pathological changes in the body. In modern orthodontics, TMJ disorders represent one of the most urgent and complex therapeutic problems, due to their polyetiological nature, insufficient research, and steady increase in population prevalence. Statistics indicate that in the structure of dental morbidity, this pathology ranks third, second only to caries and periodontal diseases, with the prevalence of functional-structural disorders in adults reaching 79%.



The rise in TMJ morbidity among young patients often correlates with an increase in the volume of orthodontic care, as iatrogenic impact on the dentofacial system and subsequent morphofunctional restructuring can provoke the development of dysfunctions associated with postural disorders. To improve rehabilitation methods for patients with dentofacial anomalies, a prospective randomized study was conducted at the "Xojiakbar Stoma Servis" clinic in Tashkent. The study included screening of 144 orthodontic patients, of whom 28 individuals with verified dysfunction were included in the main group. Inclusion criteria were limited to an age range of 21–60 years for men and 20–55 years for women with objective clinical signs of TMJ pathology. The diagnostic algorithm included medical history, visual and palpation examination, assessment of mandibular kinematics, psychosomatic screening using the Spielberger–Hanin scale for assessing personal anxiety, and instrumental visualization methods such as CBCT and MRI.

During the initial screening, TMJ pathology was identified in 19.44% of orthodontic patients. Analysis of the gender structure revealed a significant disproportion: 85.71% of those examined were female, which may be attributed to psychophysiological characteristics and higher sensitivity to pain. The clinical picture of dysfunction was characterized by a predominance of joint clicking (94.74%), with a trend toward symptom progression from monosymptomatic presentation to a polymorphic state, including chronic pain, stiffness, and pronounced muscle discomfort, recorded in 19.44% of cases.

Instrumental diagnostics confirmed deep morphological changes: in 57.84% of patients, structural transformations characteristic of arthritis of varying degrees were verified. CBCT analysis showed that 71.42% of patients had initial transformations, such as moderate reduction of the joint space and discontinuity of the cortical plate of the mandibular head, while a pronounced picture of deforming osteoarthritis was found in 7.14% of those examined. MRI confirmed anterior disk displacement in all patients in the main group, with 71.42% of cases being reducible (with repositioning), and 28.57% being non-reducible. Also, 57.14% of patients exhibited distalization of the joint heads in the habitual occlusion position, indicating significant biomechanical restructuring.

The connection between occlusal disorders and TMJ dysfunction was statistically confirmed: in 57.89% of cases, joint pathology was combined



with distal occlusion. Additional factors included neutral occlusion with dental arch anomalies (26.32%), crossbite (10.53%), and mesial occlusion (5.26%). A significant role is also attributed to the psychoemotional factor: all participants with TMJ pathology demonstrated a high level of personal anxiety (average value of 52 points), whereas in the control group this indicator did not exceed 44 points, emphasizing the close correlation between stress-induced states and the development of joint disorders.

The analysis demonstrates a significant gap between the patient's subjective perception of the disease and the objective clinical picture, as the interpretation of "clicking" as a minor factor leads to delayed seeking of help. The detection of radiological signs of joint surface degeneration in 52.63% of primary patients indicates neglect of the pathological process.

Consultation

The findings confirm the necessity of early diagnosis and the use of comprehensive treatment protocols, integrating occlusal correction, psychoemotional status control, and monitoring of the joint's morphofunctional state to prevent degenerative changes and ensure successful rehabilitation of adult patients.

References:

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