

Approaches to Diagnostics of the Dysfunctional State of the Temporomandibular

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Abstract – According to some literature data, special attention in the diagnosis of dysfunction of the temporomandibular joint is given to a detailed analysis of complaints, collecting anamnesis and data from the main research methods that characterize the dental status of specialized patients in the form of structural algorithms using databases focused on this pathology [10,12,16, 25,35, 37, 43], in addition, clinical methods for diagnosing functional disorders of the dental system are generalized, taking into account modern scientific views [6,7,8, 18, 21]. To date, a non-contact method of computer assessment of the state of the lower jaw movements is proposed; for determining occlusal disorders, the latest computer technology is reliably considered-the t-Scan device, ARCUS digma and a virtual articulator with software for using intraoral scanners [36,38,39, 41]. Other authors claim that electronic axiography remains relevant in the diagnosis and treatment of temporomandibular joint dysfunction [3, 9, 15, 24,40].

Keywords – Diagnostics, Dysfunctional State, Temporomandibular.

I. RELEVANCE OF THE STUDY

According to some literature data, special attention in the diagnosis of dysfunction of the temporomandibular joint is given to a detailed analysis of complaints, collecting anamnesis and data from the main research methods that characterize the dental status of specialized patients in the form of structural algorithms using databases focused on this pathology [10,12,16, 25,35, 37, 43], in addition, clinical methods for diagnosing functional disorders of the dental system are generalized, taking into account modern scientific views [6,7,8, 18, 21]. To date, a non-contact method of computer assessment of the state of the lower jaw movements is proposed; for determining occlusal disorders, the latest computer technology is reliably considered-the t-Scan device, ARCUS digma and a virtual articulator with software for using intraoral scanners [36,38,39, 41]. Other authors claim that electronic axiography remains relevant in the diagnosis and treatment of temporomandibular joint dysfunction [3, 9, 15, 24,40]

According to some authors, electromyographic examination of the masticatory muscles is effective for differentiated assessment of muscle balance in patients with temporomandibular joint dysfunction [19, 23,27,28,29, 44], others believe that the possibility of diagnosing the state of the masticatory and temporal muscles using a computer neuromyographic analyzer in individuals with temporomandibular joint pathology is justified [11]. We know that the joint tomogram for dysfunction determines uneven narrowing and expansion of the joint gap in different parts of the right and left [1, 5, 30], so today a number of authors believe that the most informative method for visualizing the topographic relationships of joint elements in the diagnosis and treatment planning of patients with dysfunction is computed tomography and digital technologies in General [4, 26, 32, 33]. It is also noted that telereöntgenography should be used for timely detection of facial skeletal asymmetry, which leads to a violation of the mutual position of articular elements and the development of

dysfunction[22]; on the role of step – by-step orthopantomograms in the treatment of malocclusion and prevention of temporomandibular joint dysfunction[2].

The module developed for the analysis of biometric parameters of occlusal contacts and near-contact zones of antagonizing teeth should be considered relevant [20].

A special role in the diagnosis of the disease should be given to psychosomatic manifestations accompanied by neurotic disorders of the depressive and hysterical nature of the patient's personality [17].also, for many years, the problem of the diagnostic significance of psychological stress in the origin of myofascial disorders remains debatable [46]. At the time, foreign authors claimed that the symptoms of sleep disorders are both an indicator of the risk of development, and a sign of existing disorders of the temporomandibular joint[42], including spasm of the masticatory muscles [31].

Early signs of temporomandibular joint dysfunction in modern literature include deviation of the lower jaw up to 5 mm to the side, zigzag opening of the mouth, violation of smoothness of movements, limitation of the amplitude of opening the mouth to 3 cm, clicking when opening the mouth, fatigue of the chewing muscles [14].

According to modern scientists, temporomandibular joint dysfunction, as a syndrome, is a craniomandibular disorder based on neuromuscular syndromes, which alternately involves various components of the maxillofacial system, forming polyetiopathogenetic disorders, while not being an independent pathology [13, 34, 45].

Thus, analyzing the literature data, we can say that the main pathogenetic mechanisms for the development of temporomandibular joint dysfunction are changes in the masticatory muscles, articular disk, capsular-ligamentous component of the biomechanical system; as occlusal-articulatory disorders, irrational prosthetic structures, defects and deformities of the dentition, complicated by a violation of the biomechanics of the lower jaw, stress and bruxism are the causes of Central Genesis.

II. MATERIALS AND METHODS OF RESEARCH

To identify the frequency and structure of diseases of the temporomandibular joint, a survey was conducted and completed for each 1197 patients aged 20 to 70 years living in the Bukhara region, including in the city of Bukhara, according to the map developed by us and approved by the Ministry of health Of the Republic of Uzbekistan (No. 0498, Protocol of may 25, 2020)in accordance with the recommendations of the world Health Organization. All

patients sought specialized help in the dental center at the Bukhara state medical Institute and consulted with the Department's staff-orthopedic dentists, psychotherapists and neurologists of the Institute's Department.

As can be seen from the table, out of 1197 examined people, 51.16% identified the syndrome of pain dysfunction of the temporomandibular joint according to the ICD10 – K07.8 code; 42.92% of them were women, 57.07% were men.

Determination of the dental status of patients was carried out on the basis of a comprehensive examination, which includes generally accepted in-depth clinical methods; survey, examination, palpation, percussion, probing.

Early signs of dysfunction included: deviation of the lower jaw when opening the mouth to the right or left side more than 5 mm, zigzag movement of the lower jaw when opening the mouth, restriction of opening the mouth to 3 cm, increased fatigue of the masticatory muscles; when collecting anamnesis of the disease, special attention was paid to their detail according to the recommended method [Edited by S. A. gafforov "Dentistry", 2018; Tereshina, T. P., 2014].

All obtained data were processed using the Microsoft ® Office ® Excel ® 2010 software package, Microsoft Corporation (Redmond, WA, USA) and WinPEPI 11.45 software using Spearman's rank correlation coefficient p ; the method of multivariate analysis of variance (reliable $p < 0.05$).

The results obtained and their discussion. Analysis of the obtained research material with table No. 1 presents what the core group - made up balneo centrum dysfunction Viagra pain TMJ 608 (100%); of these patients with occlusive articulation syndrome - 245 (40,29%) (Main group 1), neuromuscular syndrome - 154 (25,32%) (core group 2) and with intra-articular dislocation of the disk 209 (of 34.37%) (Main group 3); a control group consisted of 589 people with little or no problem with side temporomandibular joint; also, 50-59 and 60-69 years of age, the highest rate of pathology of the temporomandibular joint was established-27.13% and 27.75%, respectively, healthy people made up 49.03%, of which 37.79% were women, 62.20% were men. Post-nasological clinical forms of occlusion-articulation syndrome at the age of 50-59 years among women-31.25%; neuromusculatory syndrome-28.57% in women and 30.76% in men; also, dislocation of the intra-articular disc-at the age of 60-69 years was found in men-40.65%, in women-32.55%.

According to the respondents, 46.1% had complaints of clicks in the temporomandibular joint when opening and/or closing the mouth, eating and talking, and 41.8% had painful sensations in the joint area. Restriction or other violation of opening the mouth was experienced by 29.5% of the surveyed; inconvenience when closing the teeth, violation of occlusion was noted by 58.1% of respondents (table 2).

Moreover, symptoms of functional disorders of the temporomandibular joint, such as clicking and anamal occlusion disorders, were observed much more often in women than in men (55.5% and 64.7%; 38.9% and 53.1%, respectively). This means that a classic triad of symptoms is formed: pain in the temporomandibular joint and / or masticatory muscles, noise phenomena in the joint area and movement restriction. Also, the correlation between the age of respondents, frequency and number of complaints was revealed; so, if at the age of 20-29 years, joint noise and pain were registered in 37.5% of cases, then by 60-69 years, the percentage increased by 53.2%.

The proportion of people with one or more than three complaints had a positive trend. In the age group of 20-29 years, 12.5% of patients presented one or more three complaints, by 30-39 and 40-49 years, the number of two complaints was 34.3% and 29.9%, respectively; three complaints were 26.3% and 22.1%, and among respondents 60-69 years old and two complaints were 23.6%, and three complaints were 17%. Also, during the survey, 24% of all surveyed confirmed the presence of bad habits, Smoking accounted for 45.9%, biting the lower lip-27.3%. Mouth breathing, cheek biting, nail biting, pen biting, bruxism, and eating sunflower seeds were equally common (3.4-4.0% each). Having no complaints among women was 52.3%, for men 48.4%. External examination revealed facial asymmetry due to masticatory muscle hypertrophy in a number of respondents with pathologies of pain dysfunction syndrome of the temporomandibular joint; including those without asymmetry-in 328 (53.94%) patients; right asymmetry -65 (10.69%); left asymmetry -58 (9.53%); two - sided asymmetry -161 (26.48%); by age, the highest indicator is marked by right asymmetry-40-49 years in 25 (19.68%) patients; left asymmetry - 50-59 years in 31 (18.78%) patients; two - sided asymmetry - 60-69 age -69 (40.82%); gender - female right asymmetry - 30 (11.49%); left asymmetry-52 (19.92%); two-sided asymmetry-68 (26.05%); male - 28 (8,06%); - 45 (13,25%); - 50 (14.40%), respectively.

During the study, it was found out:support mandibular movement noise phenomena at 280 (46,06%) patients

wysocko temporomandibular joint, including clicking when opening mouth on the right at 45 (15,84%). left - 80 (28 and 57%); melkonieni the closing of the mouth on the right at 92 (accounting period 32.85); left - 63 (22.5%) patients, including notes that the age groups 50-59 and 60-69 years shumovye high performance.

In the examination of pain during palpation of the temporomandibular joint, pain during palpation on the right in 178 (59.13%); pain during palpation on the left in 123 (40.86%) patients; by age, the main pain on the right is more pronounced in patients 40-49 years old, 50-59 and 60-69 years old (58.2%; 54.8% and 55.3%), respectively.

An important diagnostic sign of functional disorders is a violation of the function of the joint, which is clinically expressed in changes in the volume and nature of movements of the lower jaw; the distribution of symptoms among patients by completeness, symmetry and pain of opening the mouth is presented .

When examining patients at the time of opening the mouth, we recorded lateral displacements of the lower jaw. We believe that the jaw shifted towards the unaffected or less affected joint. The absence of lateral movements could indicate not only normal, but also a disorder of the function of two joints. A number of individuals had undulating movements when opening their mouths, as the jaw shifted first towards the joint with the smallest amplitude of movement, and then in the opposite direction.

Analysis of the results obtained from table 4, can be noted as a statistically significant increase in indicators with age groups for symptoms in the full volume of the direct deflection, and in the symmetry of the opposite dependence; it can also be noted that of certain pathological symptoms, the most often noted is "in full" (32.68%), "deviation" 12.22%, "limited" 11.14% of cases.

When determining the bite in the examined patients, we found that 315 (51.80%) patients had an orthognathic bite, 34 (5.59%) had a straight bite; malocclusion was observed in 293 (48.19%) respondents; including narrowing of the upper and/or n/h dentition, deep bite in 85 (13.98%), prognathia in 66 (10.83%).

III. CONCLUSIONS

The study shows a high prevalence of signs of pain dysfunction syndrome of the temporomandibular joint: 46.1% had complaints of clicks in the area of the temporomandibular joint when opening and / or closing the mouth, 49.5% had pain in the area of the temporomandibular joint, discomfort when closing teeth, occlusion violation in

53.1%, restriction of mouth opening was experienced in 29.6% of the examined patients. Based on the results, it is possible to conduct in-depth scientific research in order to find optimal means and methods for the prevention and treatment of diseases of the temporomandibular joint, taking into account the main pathogenetic mechanisms of their development.

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