

RESULTS OF THE ASSESSMENT OF CHANGES IN MASTICATORY MUSCLE TONE IN RELATION TO THE PATIENT'S BODY POSITION

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Abstract. *Thirty patients aged 9-18 years without skeletal pathology were studied. All patients were right-handed without a clear definition of the habitual side of chewing. A series of measurements of masticatory muscle tone was performed using the Myoton-3s muscle tone device. The measurements were taken in three positions: sitting in a dental chair with the head resting on the headrest, standing and sitting in a chair. In each body position, masticatory muscle tone was assessed three times on the right and left at rest, at the first occlusion of the dentition and at maximum compression. A statistical analysis of the data was performed to determine the reliability of differences in the mean tone values.*

Keywords: *kinesiography, myotonometry, EMG, axiography, TMJ, MRI, CT scanning, and arthrography, muscular-articular.*

Introduction

Weakness occurring in the elderly population could reduce tongue pressure and lip motor function. Although tooth loss, which may be experienced during the life cycle, is a disease and pathological phenomenon, it is observed more frequently in older populations, and masticatory function is weakened sequentially due to aging. Numerous previous studies regarding the dependence of masticatory performance on the dental status have demonstrated the following: First, dental factors influence masticatory function. Second, the bite force and occluding area, which are influenced by the number of teeth and functional tooth units (FTUs), are correlated with masticatory performance. Third, age per se has no influence on masticatory performance.

The aim of the research: The possibilities of diagnosing the condition of the TMJ have increased considerably due to the use of modern instrumental technology. The use of modern instrumental techniques such as MRI, CT scanning, and arthrography has greatly increased the possibilities for diagnosing the condition of the TMJ, making it possible to visualise not only the bony but also the soft tissue structures of the joint. Meanwhile, all of the above methods of examination only state the presence of certain pathological changes developing in the articular disc, capsular ligament apparatus, and bone structures of the joint and do not answer the question of what is the cause of movement disorders of the TMJ. The muscular system is also studied using modern informative methods such as computerised EMG, kinesiography, myotonometry, axiography, and functionography. However, even registering disturbances in the functional state of muscles and movements of the palmar hips, they don't give an answer as to their cause. As a result, despite the availability of a great variety of methods of special diagnostic methods, errors are still made in conducting differential diagnostics of the causes of The differential diagnostics of the causes of disorders of an impaired movement of the palms and limbs is not yet available and the patient may receive inappropriate treatment. As a result, the patient may receive an incorrect

treatment which can lead to As a result, the patient may be treated incorrectly which could lead to a worsening of the disease. Carry out myotonometric examination of orthodontic patients; assess changes in the muscle tone of masticatory muscles depending on the patient's body position; substantiate the technique of myotonometric examination.

Materials and methods: Thirty patients aged 9-18 years without skeletal pathology were studied. All patients were right-handed without a clear definition of the habitual side of chewing. A series of measurements of masticatory muscle tone was performed using the Myoton-3s muscle tone device. The measurements were taken in three positions: sitting in a dental chair with the head resting on the headrest, standing and sitting in a chair. In each body position, masticatory muscle tone was assessed three times on the right and left at rest, at the first occlusion of the dentition and at maximum compression. A statistical analysis of the data was performed to determine the reliability of differences in the mean tone values.

Results and conclusions: The difference in the average tone values only in the "Sitting in a chair" and "Standing" positions on the right and only at maximum compression of the dentition ($P=0.01$) proved to be significant; the difference in the average tone values in the "Sitting in a chair" and "Standing" positions in the physiological resting state on the left can be considered conditionally significant ($P=0.08$). Differences of mean values of masticatory muscles tone on the right and left are reliable for the resting and first occlusion of dentitions (P ranging from 0.03 to 0.0001) and were not significant in the maximal compression condition (P from 0.6 to 0.16). Despite the unreliable differences in the data obtained, we recommend that the myotonometric examination be performed in any one position of the patient's body, and if a further comparison of the data with someone else's norm is planned, the examination be performed in the same position as the norm was collected.

Conclusion: From the discussions and details mentioned above paragraphs it can be inferred that as a result of the study, a direct relationship was revealed between the severity of the manifestation of the syndrome of muscular-articular dysfunction of the TMJ and an increase in psycho-emotional stress at a value of $p<0.05$. The development of the syndrome of muscular-articular dysfunction of the TMJ may be a response to stress, leading to chronic tension of the masticatory muscles and their spasm with a change in the relative position of the elements of the joint. On the other hand, under the frequent appearance of stress, intensification, early manifestation of the manifestation of dysfunction, the root cause also met with root causes, for example, occlusal disorders, which was observed in our presence.

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