



Analysis of the effectiveness of restoring the kinematics of opening the mouth using hardware mechanotherapy in the treatment of patients with internal disorders of the temporomandibular joint and hypertonicity of the masticatory muscles.

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ABSTRACT

Objectives: The aim of the study was to develop an algorithm for the effective use of hardware mechanotherapy by patients with TMJ diseases and limited mouth opening, with hypertonicity of the masticatory muscles.

Material and methods: The study group consisted of 20 patients: with hypertonicity of the chewing muscles, internal disorders of the temporomandibular joint according to MRI, mouth opening restriction less than 40 mm (physiological norm 40–45 mm).

The patients of the study group underwent: a clinical examination using a modified functional diagnostic card, an MRI study, interference electromyography with the calculation of the IMPACT index.

The study group was divided into 3 subgroups:

Patients receiving monotherapy - Apparatus mechanotherapy OpenWide;

Patients receiving complex therapy - OpenWide hardware mechanotherapy and the use of an occlusal-stabilizing apparatus (OSA);

Patients in whom the treatment of TMJ diseases was carried out according to the full rehabilitation protocol - The use of OSA, minimally invasive TMJ arthroscopy, OpenWide hardware mechanotherapy.

During the study, an algorithm for the effective application of the OpenWide hardware mechanotherapy technique was developed, aimed at restoring the kinematics of the movements of the lower jaw by performing 3 phases:

Phase 1 - vertical, aimed at increasing the amplitude of mouth opening.

Phase 2 - translational, aimed at the formation of the sagittal articular path.

Phase 3 - sagittal modified movement, a combination of the forward and lowering moments of the movement of the lower jaw.

The therapy cycle was 21 days.

Results: On the 21st day, the value of mouth opening after the course of hardware mechanotherapy "Open Wide" in the first subgroup increased by 35%, but after the completion of hardware mechanotherapy, there was a regression of the mouth opening, pain and hypertonicity of the masticatory muscles persisted; in the second subgroup, by 43% relative to the initial indications, pain sensations (VAS) and a decrease in the tone of the masticatory muscles decreased significantly; in the third - by 54%, there was a complete disappearance of the pain syndrome, and a significant decrease in tone.

Conclusion: The results of the study showed that the method of efficiency of restoring the kinematics of opening the mouth using hardware mechanotherapy of opening the mouth with the Open Wide apparatus is the most effective as part of a complex algorithm for the treatment of patients with internal disorders of the temporomandibular joint, hypertonicity of the masticatory muscles and muscular dystonia.

BIOGRAPHY

Bagoviev Arslan is the post-graduate resident student of Department of Maxillofacial and Plastic Surgery of Moscow State University of Medicine and Dentistry named after A.I.Evdokimov

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