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FUNCTION-GUIDED ORAL REHABILITATION

MUSCLE FORCES IN PATIENT WITH BRUXISM

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The condition of the masticatory system and, accordingly, chewing efficiency can be judged from the data obtained on the maximum bite force. It is known that the strength of the masticatory muscles, the biomechanics of the jaw, teeth and supporting bone, the reflex mechanisms, the nervous system and the mandibular joint are leading factors in determining the maximum masticatory force (1). Dellavia et al. (2) studied the electromyographic activity of the masticatory muscles in patients with fixed prosthesis on four implants (All-on--Four®) and the results obtained have a practical contribution. The hypothesis of the importance of the type of prosthetics on muscle activity is rejected. No significant differences in muscle strength were found between prosthetic patients and the control group. The authors noted a change in muscle activity only in patients with prosthetic treatments with a removable maxillary prosthesis, which they believe is due to a not very good neuromuscular coordination. The strength of the muscles involved in chewing function can also be examined by other modern digital systems that numerically record the force expressed in newtons (N) (3, 4, 5). The aim of the study - to approve a clinical work protocol and to obtain significant data on the muscle strength of the tongue, mm. masseteri and musculus orbicularis oris in patients with bruxism. The study included 35 patients with bruxism aged 35-65 years, and it was carried out at the Department of Prosthetic Dentistry, Faculty of Dental Medicine, Medical University - Sofia, Bulgaria. Patients with intact dentition and without signs and symptoms of bruxism and related craniomandibular dysfunctions were used as a control group. The force in Newtons was measured using the diagnostic system "OMFT Myo-scan" (Netherlands). The object of observation is the compression of the lips; the strength of the tongue (tongue extension); the strength of mm. masseteri (contraction strength) and musculus orbicularis oris. The results obtained allowed to systematize and test in practice a protocol for conducting the study in patients with bruxism. Initial data indicate the need to conduct in-depth studies among a larger number of patients, in order to determine the reference limits of the strength in patients with bruxism and to compare the results with clinically healthy patients. In conclusion, the analysis of maximum bite force is key in the assessment of masticatory function and the state of the masticatory system. Contemporary methods significantly facilitate the diagnosis of functional disorders and contribute to the optimization of the therapeutic approach in prosthetic dentistry.

Keywords: *muscle forces, bruxism, clinical protocol, m. masseter, m. orbicularis oris.*

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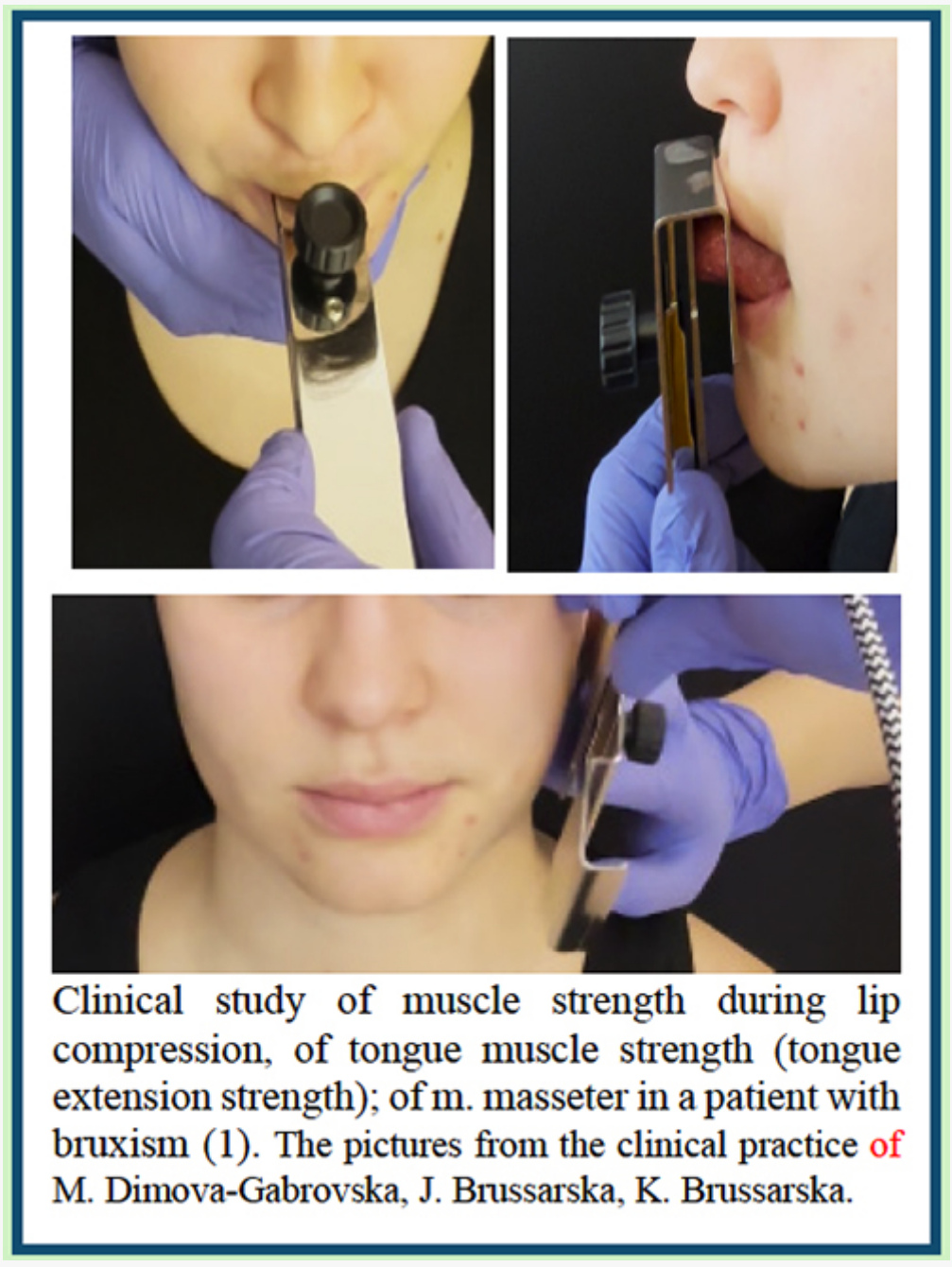

Clinical study of muscle strength during lip compression, of tongue muscle strength (tongue extension strength); of m. masseter in a patient with bruxism (1). The pictures from the clinical practice of M. Dimova-Gabrovska, J. Brussarska, K. Brussarska.