Treatment for TMD with occlusal splint and electromyographic control: Application of the FARC protocol in a Brazilian population

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Abstract

The purpose of this study was to apply Functional Anatomy Research Center (FARC) Protocol of TMD treatment, which includes the use of a specific type of mandibular occlusal splint, adjusted based on the electromyographic index, in a group of 15 patients with disc displacement, classified according to the Research Diagnostic Criteria for Temporomandibular Disorders (RDC/TMD) and then analyzing the results compared with the control group. The clinical evaluations were completed both before and after the treatment. Electromyographic (EMG) data was collected and recorded on the day the splint was inserted (visit 1), after one week (visit 2) and after five weeks of treatment (visit 3). The control group consisted of 15 asymptomatic subjects, according to the same diagnostic criteria (RDC/TMD), who were submitted to the same evaluations with the same interval periods as the treatment group. Immediately after splint adjustment, masseter muscle symmetry and total muscular activity were significantly different with than without the splint (p<0.05), showing an increased neuromuscular coordination. After treatment, significant variations (p<0.05) were found in mouth opening and in pain remission. There were no significant differences among the three sessions, either with or without the splint. There were significant differences between the TMD and control groups for all analyzed indices of muscular symmetry, activity and torque, with the exception of total muscular activity. The use of the splint promoted balance of the EMG activities during its use, relieving symptoms. EMG
parameters identified neuromuscular imbalance, and allowed an objective analysis of different phases of TMD treatment, differentiating individuals with TMD from the asymptomatic subjects.

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Indexed keywords

**EMTREE medical terms:** adolescent; adult; analysis of variance; article; Brazil; case control study; dental equipment; dental procedure; electromyography; female; human; male; masseter muscle; middle aged; nonparametric test; pain assessment; pathophysiology; temporomandibular joint disorder; treatment outcome; trismus

**MeSH:** Adolescent; Adult; Analysis of Variance; Brazil; Case-Control Studies; Dental Models; Electromyography; Female; Humans; Male; Masseter Muscle; Middle Aged; Occlusal Splints; Pain Measurement; Statistics, Nonparametric; Temporomandibular Joint Disorders; Treatment Outcome; Trismus

*Medline is the source for the MeSH terms of this document.*