Activities of masticatory muscles in patients before orthognathic surgery

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Abstract
AIM: To compare the influence of occlusal versus craniofacial characteristics on the functionality of the stomatognathic apparatus. MATERIALS AND METHODS: Two groups of subjects were selected: 27 patients (13 women and 14 men), 18 to 42 years old, all candidates for orthognathic surgery, 7 with prognathic syndrome and 20 with prognatic syndrome; and 26 healthy young adults (13 women and 13 men) of corresponding age (control group). To verify the neuromuscular equilibrium induced by occlusion, the electromyographic activities of both right and left masseter and anterior temporal muscles were recorded and analyzed, calculating the percentage overlapping coefficient (an index of the symmetric distribution of the muscular activity determined by the occlusion) and TORS (index of the presence of mandibular torque). Data were compared with Student t-test for independent samples. RESULTS: Between the 2 groups of patients, no statistically significant differences were found, whereas the statistical analysis showed differences between patients and control subjects (P < 0.05): overall, the control subjects had a better neuromuscular stability than the patients who were candidates for orthognathic surgery. CONCLUSIONS:: The electromyographic evaluations revealed that there was a neuromuscular imbalance determined by an occlusal instability in the patients candidates for orthognathic surgery, thus indicating that occlusion plays a more important role than any possible mechanical disadvantages due to altered craniofacial morphology.

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