Influence of Electroacupuncture and Laser-Acupuncture on Treating Paresthesia in Patients Submitted to Combined Orthognathic Surgery and Genioplasty

Abstract
Objective: The goal of this research was to observe the influence of electroacupuncture (EA) and laser-acupuncture on the return of tactile/pain sensitivity in patients who underwent orthognathic surgery. Materials and Methods: Thirty volunteers subjected to orthognathic surgery were evaluated and randomly divided into 2 groups, in which 3 treatments were evaluated: control (n=30) (G0, medication + placebo laser treatment) and 2 experimental treatments (n=15) (G1, medication + EA) or G2 (medication + laser-acupuncture). The control group had n=30 because for each experimental treatment conducted on a volunteer’s hemi-face, there was a control treatment on the other hemi-face. In G1, medication was given with EA, with needles placed at predetermined points (ST 4 [Diacang], M-HN-18 [Jiachengjiang], CV 24 [Chengjiang], ST 5 [Daiying], ST 6 [Jiache], and point A1 [YNAs]). For electrostimulation, the device used delivered transcutaneous electrical nerve stimulation of a burst type, with intensity and frequency variations of T=220ms and F=4Hz (30 minutes, 2x/week). In G2, in addition to the medication, laser irradiation (at 780nm) was applied on acupuncture points (at 0.04cm(2), 70mW, 6s/point, 0.42J/point, 10J/cm(2), 2x/week). All volunteers were evaluated before and during the 4 months following the surgery. Tactile sensitivity was assessed by mechanical brushing (brush #s 2 and 12) and by a 2-point discrimination test, using a bow compass. A pain test was performed with a pulp electrical test that stimulates intact nerves of the dentin-pulp complex. A Kaplan-Meier test was performed, and survival curves were plotted for comparison between groups. Cox regression analysis was also conducted (alpha=0.05). Results: There were no statistically significant differences among the groups for the 2-point discrimination test (brushes #2 and #12) on the buccal mucosa region and for the pulp test on all evaluated regions. However, the tactile test using brush #12 revealed significant differences between G1 and the other groups when considering the lower lip (P=0.024) and chin (P=0.028) areas. Conclusions: Only EA was able to influence the brushing test (brush #12) the return of tactile sensitivity on the chin and lower lip positively after combined orthognathic surgery and genioplasty. (AU)