

Effects of different deprogramming devices on electromyographic activity of masseter and temporalis muscles: A crossover clinical study

Dr. Amit Gaikwad

Padmashree Dr. D.Y. Patil Dental College & Hospital, Navi Mumbai

Introduction: The evidence of the effects of muscle deprogramming devices (MDDs) on the masseter and temporalis muscles have not yet been determined. The purpose of this crossover clinical study was to investigate and compare the effects of different MDDs on the muscle activity of masseter and temporalis muscles using surface electromyography (SEMG) in individuals with complete dentition.

Methodology: Thirty healthy participants were evaluated for the muscle activity of masseter and temporalis muscles of both sides by using the SEMG in following clinical conditions: (A)Control-at the rest position of mandible without the use of the MDDs, (B)immediately after clenching without the use of the MDDs, (C)after deprogramming with the cotton roll deprogrammer for 30 minutes, (D)after deprogramming with the leaf gauge deprogrammer for 30 minutes, (E)after deprogramming with the lucia jig deprogrammer for 30 minutes, and (F)after deprogramming with the kois deprogrammer for 24 hours. Analysis of variance and the bonferroni post hoc test were used to perform statistical analyses.

Result: The ANOVA test reported a statistical significant difference in the muscle activity of masseter and temporalis muscles among the tested individuals, after deprogramming with the MDDs. Among the tested MDDs, the lowest mean muscle activity ($15.63 \pm 3.03\text{mV}$) was reported in left masseter muscle with condition F and the highest ($87.23 \pm 4.09\text{mV}$) in left temporalis muscle with condition C.

Conclusion: The use of a kois deprogrammer for 24 hours revealed a significant low muscle activity in both the masseter and temporalis muscles of each side when compared with other tested MDDs in the study.

DOI: 10.4103/0972-4052.306365