ABSTRACT

FUNCTIONAL EVALUATION OF THE BEHAVIOR OF MASTICATORY MUSCLES IN ZYGOMATICOMAXILLARY COMPLEX FRACTURE

BACKGROUND: The purpose of this study is to functionally evaluate the behaviour of the masticatory muscles (Masseter and Temporalis) following Zygomaticomaxillary Complex fractures by assessing bite force, electromyography and mandibular movements.

MATERIALS AND METHODS: Group I consisted of twenty patients with unilateral Zygomatico Maxillary Complex fractures who were treated surgically with one, two or three point fixations at the frontozygomatic, infra orbital or zygomatico maxillary buttress region as per clinical and radiological assessments. Group II control group included twenty normal patients. The muscle activity was functionally evaluated before and after the surgery for a period of six months. The evaluation consisted of bite force measurement, EMG analysis and measurements of mandibular movements.

RESULTS: There was an increase in bite force and EMG activity throughout the evaluated post-operative period but at the end of six months, majority of the patients were still below the control levels. Maximum mouth opening increased considerably after the surgery. The number of fixation points (one, two or three point fixation) did not influence the muscle activity.

CONCLUSION: The masticatory musculature, according to bite force and EMG returned to near normal levels by the third month after the surgery. The study supports the current clinical concept of minimized fixation in treating Zygomatico Maxillary Complex fractures.

KEY WORDS: Zygomatico maxillary complex fracture, Bite force, Masseter, Temporalis, Electromyography