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"Electromyographic patterns of Masticatory Muscles in relation to Arthrogenous Temporomandibular Joint Disorders – a Cross Sectional Study"

By

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ABSTRACT

OBJECTIVE - Analysis of the muscle activities of arthrogenous subjects during the Learreta Decompression Test as compared to a control group of asymptomatic volunteers.

METHODS – Forty-nine MRI confirmed arthrogenous subjects with internal derangements had their masseter and temporalis EMG activity recorded at rest and during clenching using the Learreta Decompression Test protocol as did a 34-member gender-matched control group. Data from both groups were subjected to eight different EMG index calculations that were tested for significance using the Mann-Whitney U Test and the Sign Test.

RESULTS – The mean EMG values at rest and during clenching revealed significant differences between the arthrogenous group and the control group for all four muscles ($p < 0.05$). However, among the 8 indexes tested only the Activity Index and the Asymmetry Index revealed any significant differences between the groups ($p < 0.05$). No significant differences were found related to acute or chronic status within the arthrogenous group ($p > 0.05$).

CONCLUSION – When testing for TMJ compression

using the Learreta Decompression Test the mean EMG values of the masseter and anterior temporalis muscles, the Activity Index and the Asymmetry Index can be useful in evaluating arthrogenous subjects and identifying patients that may benefit from custom oral appliances.

CLINICAL SIGNIFICANCE – The Activity Index and the Asymmetry Indexes may complement the Learreta Decompression Test in evaluating the presence of arthrogenous TMJs.

KEY WORDS – Surface Electromyography (SEMG), Arthrogenous, Magnetic Resonance Imaging (MRI), Temporomandibular Joint, Internal Derangement, Percentage Overlapping Coefficient (POC), Torque Coefficient (TORS), Asymmetry Index (AI), Activity Index (ACT).