The effect of biofeedback exercises on muscle activity of trapezius and flexion range of motion in people with shoulder impingement syndrome

Oral Presentation

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Abstract

Introduction: Among all shoulder injuries, shoulder impingement syndrome (SIS) is more common and is the most common cause for pain and stiffness in the shoulder area. The study purpose was to investigate the effect of biofeedback exercises on muscle activity of trapezius and flexion range of motion in people with shoulder impingement syndrome.

Methods: In the present study, 20 subjects with shoulder impingement syndrome with an age range of 20 to 40 years were selected as the statistical sample of this study and were divided into experimental (n = 10) and control (n = 10) groups. The experimental group was performed using EMG biofeedback for 8 weeks and 3 training sessions per week. The control group was used only for pre-test and post-test measurements. To collect data from surface electromyography to analyze the muscle activity patterns of trapezius muscles (upper, middle, lower) and from the goniometer to assess flexion range of motion were used to measure shoulder function. For data normality, Shapiro-Wilk test was used, for comparison of pre-test and post-test, analysis of covariance test and correlated t-test were used to examine within-group changes.

Results: In this study, after 8 weeks of biofeedback training in the experimental group, there was a significant improvement in the electrical activity of the middle trapezius (P = 0.000) and lower trapezius muscles (P = 0.016) and also a significant improvement in the amount flexion range of motion (P = 0.000) was found in the experimental group compared to the pretest and also in the control group (0.05) and no significant difference was found in the muscle activity of the upper trapezius muscle (P = 0.776).

Conclusion: The present study showed that biofeedback exercises are effective in creating balance and improving trapezius muscles and flexion range of motion in people with shoulder impingement syndrome.

Keywords

Shoulder impingement Syndrome; Biofeedback exercises; Muscle activity; flexion Range of Motion

Reference:

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