

INFLUENCE OF POSITIONAL RELEASE THERAPY (PRT) ON TRICEPS SURAE MUSCLE DURING GAIT

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INTRODUCTION:

Positional Releasing Therapy (PRT) is an indirect technique, it places the body into a positional of greatest comfort and employs tender points to identify and monitor the sensibility or lesion. For this reason there isn't enough studies that could prove its effectiveness; therefore, triceps surae muscle was chosen, for being an important muscle, superficial, with high potency, and for performing a high muscular activity during gait.

OBJECTIVE:

The goal of this study was to verify the influence of PRT on the activity of triceps surae muscle during gait.

METHOD:

30 health subjects (16 men's and 14 women, with age between 19 – 24 years) without pain were submitted to an evaluation of sensibility points of the muscle. Once the point was found, the subject were submitted to an electromyography analysis of the muscular recruiting of gastrocnemius medialis muscle with a MIOTEC model miotool 400 of 4 channels with 14 resolution bits, acquisition per channel

of 2000 samples per second, 100x, filter Butterworth high pass 1 polo 0,1Hz and buterworth low pass 2 polo 500 Hz, spacing between electrodes fixed in 30mm. Surface electrodes of Ag/ClAg, round, pre gelded and auto adhesive from MEDITRACE, and were placed on muscles according to Seniam recommendations. The subjects walked in a plane electric mat during 2 minutes. They were treated with PRT technique during 90 seconds and were submitted to a new electromyography analysis with the same parameters. (Cram Kasman 1998; Ambrogio & Roth 1997). These tender points are located in the superior portion of the medial and lateral heads of the gastrocnemius muscle, and the patient position of treatment is prone. The therapist stands on the side of the tender point, places his or her foot or knee on the table, and supports the dorsum of the patient's foot on the therapist's upper thigh. The therapist produces marked plantar flexion by compressing the calcaneus's cephalad toward the tender point and caudal traction by shifting the supporting thigh away from the tender point.

RESULTS:

In this study, it was used Wilcoxon test. Complementing the descriptive analysis, it was used confidence interval technique for media. Before the performance of PRT technique the muscular group showed a media of muscular activity of 133,1 μ V, and after the application the media value decreased to 101,5 μ V. The peak media of analysis before PRT was 960,5 μ V, and after application was 836,0 μ V. The reduction of the activity in percentage was 14,3% before and 12,7% after the technique, with p value was $<0,001$ for media and peak.

DISCUSSION:

The studies of Martins (2006) and Cyrillo et al (2006) showed a decreased muscular activity after the application of PRT technique, and the same was possible in this present study, where PRT had an important influence in decreasing the muscular recruiting of gastrocnemius medialis muscle during gait.

CONCLUSION:

From these results, it is suggested that when PRT is applied in a right way, it results in a decrease of recruiting and muscular activity of triceps surae muscle during gait, obtaining significant results in values reduction before and after the application of the technique.

KEY WORDS: Electromyography, gastrocnemius muscle, gait, positional releasing therapy

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