

Electromyographic study of the adductor longus and vastus medialis muscles (oblique fibers), during squatting exercises with and without hip adduction

Passos, FF.¹, Greve, JMD.² and Cricenti, SV.³

¹Department of Morphology

²Orthopedic Department

³Department of Morphology

Introduction: Adductor longus (ADL) and vastus medialis (VM) muscles, including their oblique fibers (VMO), have anatomic relations^{1,2,3}. VMO muscle is a patella stabilizer, thus a number of EMG studies have been written in order to determine exercises that increase this muscle activity^{4,5}. The present study aimed at relating VMO muscle activity to hip adduction and ADL muscle contraction at squatting exercises with and without hip adduction for both. Methods and results: Thirty healthy and sedentary individuals of both sexes took part in the study. They did squatting exercises on the wall (WS), squatting exercises on the wall with hip adduction (WSA), free squatting exercises (FS) and free squatting exercises with hip adduction (FSA). In each exercise, three 0°-60°-0° knee flexion squatting exercises were realized. EMG signals were rectified and quantified by using Root Mean Square (RMS) and then normalized from Maximum Isometric Voluntary Contraction (MIVC). Statistical tests were made and the significance level adopted was $\alpha < 0.05$. Conclusion: The hip adduction increased the VMO muscle activity; being this increase greater for squatting exercises with dorsal support.

References

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