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The effects of the visual bio-feedback information to control for hyper extended knee

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Hyper-extended knee is described as knee pain associated with impaired knee extensor mechanism. Additionally, hyper-extension of knee may have reduced knee joint position sense that may reduce the individual`s ability to control end range knee extension movement. The Purpose of this study is to investigate the effects of visual bio-feedback information for plantar weight bearing distribution to plantar pressure for the foot, lower extremity muscle activities, and knee joint angle in subject with hyper-extended knee. Thirty subjects with hyper-extended knee were participated in the study. Surface electromyography was recorded for the rectus femoris, biceps femoris, tibialis anterior and gastrocnemius muscle activities. The plantar weight bearing distribution displayed and measured using a pressure measurement mats. Kinematic parameter for knee joint angle was recorded using a motion analysis system. A paired t-test was used to determine the significance between visual bio-feedback and prefer condition. Knee joint angle significantly decreased in the visual bio-feedback condition than prefer condition ($p<0.05$). RF and GCM muscle activities were significantly differ between visual bio-feedback and prefer condition ($p<0.05$). The results of this study showed that the visual bio-feedback information of plantar weight bearing distribution is effective for correction of hyper-extended knee.

Biography

Sung-Min Ha is currently an Assistant Professor in the Department of Physical Therapy at the College of Health Science of Sangji University. He has received his PhD from Yonsei University in 2012. He is interested in the mechanism of movement impairment, biomechanics and development of therapeutic intervention approach through movement analysis and EMG study for movement disorders and musculoskeletal disease.

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