

Force Distribution and Muscles Activation for Ankle Instability Patients with Rigid and Kinesiotape while Standing

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Abstract : Background: Deficit in neuromuscular recruitment and decrease force distribution were the common problems among ankle instability patients due to altered joint kinematics that lead to recurrent ankle injuries. Rigid Tape and KT Tape had widely been used as therapeutic and performance enhancement tools in ankle stability. However the difference effect between this two tapes is still controversial. Objective: To investigate the different effect between Rigid Tape and KT Tape on force distribution and muscle activation among ankle instability patients while standing. Study design: Crossover trial. Participants: 27 patients, age between 18 to 30 years old participated in this study. All the subjects were applied with KT Tape & Rigid Tape on their affected ankle with 3 days of interval for each intervention. The subjects were tested with their barefoot (without tape) first to act as a baseline before proceeding with KT Tape, and then with Rigid Tape. Result: There were no significant difference on force distribution at forefoot and back-foot for both tapes while standing. However the mean data shows that Rigid Tape has the highest force distribution at back-foot rather than forefoot when compared with KT Tape that had more force distribution at forefoot while standing. Regarding muscle activation (Peroneus Longus), results showed significant difference between Rigid Tape and KT Tape ($p= 0.048$). However, there was no significant difference on Tibialis Anterior muscle activation between both tapes while standing. Conclusion: The results indicated that Peroneus longus muscle was more active when applied Rigid Tape rather than KT Tape in ankle instability patients while standing.

Keywords : ankle instability, kinematic, muscle activation, force distribution, Rigid Tape, KT tape

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