The Correlations Between Navicular Drop and Balance Test in Handball Players

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Abstract

Introduction: Hand ball is a sport which used all over the body part, especially ankle movement.. Handball is a kind of sport with very foot movement. Repetitive foot movement can effect on foot posture. Foot posture change is caused by vigorous sport activity that high speed movement, repetitive jump, change direction and force stop. Flat foot causes of proprioception sensation change (report the positional of the joint) and sport performance. So flat feet may effect on the balance ability. Objective of this study was test correlation with foot posture, balance and range of motion of the ankle joint in handball players.

Methodology: Five handball players (male 3 and female 2) from Institute of Physical Education Bangkok Campus were enrolling in this study. They were evaluated the foot posture, balance, and ankle range of motion. Foot posture was evaluate by Navicular drop test. Balance ability was evaluated by single leg stance test. Ankle range of motion was evaluated in ankle dorsiflexion. These were assessed by the physical therapist.

Results: The average of body mass index and ages were 20.62±1.9 kg/m^2 and 19±1.4 years old. Flat foot was found 100 percent in all preferential foot (3 right foot, 2 left foot). Reverse correlation with Single leg stance test. (Pearson Correlation -0.393). Reverse correlation with ankle dorsiflexion. (Pearson Correlation - 0.393).

Conclusions: Foot posture may effect on ankle balance ability that importance to movement and decrease ankle dorsiflexion range of motion. Flat foot may be part of reduce sport performance of hand ball player. So, training coach and physical therapist should be concern to prevent factor that induce flat foot, improve balance, and increase flexibility of ankle by specific foot training.

Keywords: Handball players, Flat foot, Navicular drop test, Single leg stance test