

Effect of Fatiguing Hip Muscles on Dynamic Posture Control in Recurrent Ankle Sprain

Authors : Radwa El Shorbagy, Alaa El Din Balbaa, Khaled Ayad, Waleed Reda

Abstract : Ankle sprain is a common lower limb injury that is complicated by high recurrence rate. The cause of recurrence is not clear; however, changes in motor control have been postulated. Objective: to determine the contribution of proximal hip strategy to dynamic posture control in patients with recurrent ankle sprain. Methods: Fifteen subjects with recurrent ankle sprain (Group A) and fifteen healthy control subjects (Group B) participated in this study. Abductor-adductor as well as flexor-extensor hip musculature control was abolished by fatigue using the Biodex Isokinetic System. Dynamic posture control was measured before and after fatigue by the Biodex Balance System. Results: Repeated measures MANOVA was used to compare within group differences. In group A fatiguing of hip muscles (flexors-extensors and abductors-adductors) lowered overall stability index (OASI), anteroposterior stability index (APSI) and mediolateral stability index (MLSI) significantly ($p=0.00$) whereas; in group B fatiguing of hip flexors-extensors lowered significantly OASI and APSI only ($p= 0.017, 0.010$; respectively) while fatiguing of hip abductors-adductors has no significant effect on these variables. Conclusion: fatiguing of hip muscles has a significant deleterious effect on dynamic posture control in patient with recurrent ankle sprain indicating their increased dependence on hip strategy.

Keywords : ankle sprain, fatigue hip muscles, dynamic balance, ankle sprain

Conference Title : ICSR2020 : International Conference on Scientific Research and Development

Conference Location : Chicago, United States

Conference Dates : December 12-13, 2020