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Isokinetic study of the impact of styloid fracture with a volar plate osteosynthesis on pronosupination strength

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Keywords: Fracture styloid; Force; Supination; Isokinetic

Hypothesis. Recent studies have shown that the presence of an associated ulnar styloid fracture does not adversely affect the clinical and functional outcomes in patients with a distal radius fracture. The purpose of this study was to evaluate a series of patients with an internally fixed fracture of the distal part of the radius to test the null hypothesis that there is no difference in isokinetic evaluation between those patients with an untreated fracture of the ulnar styloid base and those with no ulnar fracture or a tip fracture.

Methods. Ten consecutive patients were recruited at 1 year after ORIF with a volar locking plate of the distal radius. The patients were divided in two groups: (i) group 1: patients with a concomitant untreated fracture of the base of ulnar styloid; (ii) group 2: patients without fracture of the ulnar styloid or just a tip fracture. A control group (Group 3) was composed of six healthy patients without history of trauma of the wrist. All the patients were tested bilaterally for isokinetic and isometric pronation and supination strength. Clinical outcomes such as grip strength, range of motion, Mayo Clinic Wrist score (MWS), DASH score and Lidstrom classification were evaluated by an independent observer and correlated with isokinetic results. Statistical analysis was performed with Kruskall-Wallis test and Wilcoxon test (P < 0.05).

Results. There were no significant differences in range of motion; grip strength; MWS and DASH scores and isometric strength of pronation and supination. Isokinetic evaluation showed a significant decrease of the supination strength between group 1 compared to group 2 and 3 at 45°/s (P < 0.01). Discussion. This study suggests that fracture of the base of the ulnar styloid has no effect on upper extremity specific questionnaires. However, a significant decrease in isokinetic supination force is expected. More specific health questionnaires may confirm the clinical effect of this loss of strength. Consequently, more aggressive treatment for the ulnar styloid may be proposed in case of fracture of the radius associated with ulna in young and active patients.

http://dx.doi.org/10.1016/j.rehab.2012.07.299

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Effect of formed plantar orthosis on postural control in upright stance

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Keywords: Postural control; Plantar orthosis; Cutaneous stimulation

Introduction. The balance control system depends on basic components concerning biomechanics, and a set of reflexes that triggers equilibrium response based, on visual, vestibular and somatosensory senses [1]. In this study we have examined whether extensive stimulation of a sensory sensor can modify postural balance?

Materials and methods. Two groups of subjectively healthy subjects (21 ± 1.0 years) were randomly assigned to posturographic measurements wearing formed plantar orthosis (15 subjects) or flat (not formed but in same material) soles (15 subjects), in condition eyes opened and then eyes closed A similar test was performed in the same conditions after 1 week wearing formed or flat orthosis.

Results. In the condition eyes opened, we observed a significant reduction of the area of body sway, and of the medial-lateral amplitude in the group using

http://dx.doi.org/10.1016/j.rehab.2012.07.300