

Can We Treat Patients with a Clinically Suspected Scaphoid Fracture with Supportive Bandage Instead of Cast? A Multicenter Randomized Controlled Trial (SUSPECT Study)

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Purpose: Patients with a clinically suspected scaphoid fracture and normal initial radiographs are treated with cast but only 10% of these patients have an occult scaphoid fracture. To reduce overtreatment, we hypothesize that these patients treated with supportive bandage instead of cast report a non-inferior functional outcome after 3 months.

Methods: We performed a pragmatic multicenter randomized controlled trial with non-inferiority design. Adult patients with a clinically suspected scaphoid fracture and normal initial radiographs were randomized between 3 days supportive bandage or 2 weeks below-elbow cast. All patients received a radiograph, physical examination, and questionnaires after 2 weeks and 1 year. Questionnaires were additionally sent after inclusion, 6 weeks, and 3 months. Our primary outcome was the mean difference on the QuickDASH (an abbreviated version of the Disabilities of the Arm, Shoulder and Hand) score at 3 months. Secondary outcomes include the QuickDASH, Patient-Rated Wrist/Hand Evaluation (PRWHE), VAS (visual analog scale) pain, wrist range of motion, and patient satisfaction during follow-up. Randomized analyses were performed blinded for treatment allocation with a linear mixed model or hurdle model.

Results: Included patients were mainly female (53%) with a mean age of 45 years (range, 18-87 years). Baseline characteristics did not differ between the 91 patients allocated to the bandage group and 89 patients allocated to the cast group. The physician diagnosed 15 patients (8.3%) with a scaphoid fracture and there were no patients with a scaphoid nonunion after one year. The mean difference at 3 months on the QuickDASH was 1.2 points (95% confidence interval [CI] 0.9 to 1.6). There were no statistically significant differences between the 2 groups regarding QuickDASH, PRWHE, and VAS pain at any follow-up point. Patients in the bandage group had significantly less impaired palmar flexion, dorsal flexion, supination, and ulnar deviation after 2 weeks and patients were more satisfied with the treatment than patients in the cast group.

Conclusion: Patients with a clinically suspected scaphoid fracture and normal initial radiographs treated with bandage reported no inferior functional outcome after 3 months compared to patients treated with cast. There was no difference during follow-up regarding functional outcome and pain and there was no scaphoid nonunion. Patients in the bandage group had less impaired range of motion after 2 weeks and they were more satisfied with the treatment. We conclude that patients with a clinically suspected scaphoid fracture and normal radiograph can be treated with supportive bandage at the emergency department if they are re-examined after 2 weeks.