

Minimally Displaced, Isolated Radial Head Fractures Do Not Require Formal Physical Therapy: Results of a Prospective Randomized Trial

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Purpose: Nondisplaced or minimally displaced radial head fractures (OTA Type 21A2.2) are common nonoperative elbow injuries. The role of physical therapy (PT) in the treatment of this injury is unclear. The aim of our prospective, randomized trial was to assess the need for formal PT following simple radial head fractures.

Methods: All eligible patients with nonoperative radial head fractures (with displacement <2 mm) presenting to 1 of 2 providers were consented and enrolled between January 2014 and August 2016. Patients were randomized to receive either prescribed outpatient PT or home exercise treatment with a standard set of self-directed exercises. Patients were followed up at 6 weeks, 3 months, 6 months, and 1 year. Outcome measures included Disabilities of the Arm, Shoulder and Hand (DASH) scores, time to clinical healing, and range of motion. Recorded range of elbow and wrist motion included flexion, extension, pronation, and supination. Data were analyzed using independent samples t tests and chi-squared analysis with a P value of <0.05 as significant.

Results: 51 patients enrolled with average follow-up of 15.1 months (15.1 ± 4.0). Of the 51 patients, 25 patients were randomized to a home exercise program and 26 patients were randomized to a formal outpatient PT program. These patients attended a mean of 7.6 ± 4.4 PT sessions. There were no differences in patient demographics between groups. At 6 weeks, patients utilizing home exercises reported greater function with a lower mean DASH score (7.4 ± 4.9) compared to the PT cohort (12.1 ± 8.4) ($P = 0.021$). There was no difference in arc of motion at 6 weeks. At 3 months, 6 months, and at final follow-up, there was no difference in mean DASH score or arc of motion between cohorts. There was no difference in time to clinical healing between groups. Two patients in the PT cohort and 1 in the home exercise cohort developed secondary lateral epicondylitis and were treated nonoperatively.

Conclusion: Patients who utilized home exercises for minimally displaced radial head fractures experienced higher early functionality scores and equal range of motion at 6 weeks compared to their PT counterparts. After 6 weeks, there were no measured differences in outcomes. These data suggest that prescribing physical therapy for isolated nonoperative radial head fractures is not a cost-effective strategy and that providing a simple sheet of self-directed exercises will provide for a similar outcome.