



Recovery from wrist fracture: What happens after discharge from hand therapy?

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Abstract: While it is commonly assumed that recovery from wrist fracture continues for at least one year post injury, few studies have examined the changes to be expected after discharge from hand therapy. This prospective single-center study addressed this gap by examining changes in ROM, strength, and disability over the 12 months post radial fracture, with a particular focus on changes that occur between discharge from hand therapy and the one-year anniversary. Results showed significant gains in ROM, strength, and decreased self-reported disability by discharge from hand therapy, and continued but non-significant changes in all measures between discharge and the one-year anniversary. This information should be useful for clinicians and patients looking for predicted outcomes from this common orthopedic injury.

Purpose

The purpose of this study was to examine the patterns of recovery in distal radial fracture that occur after discharge from active hand therapy.

Methods

62 consecutive patients with distal radial fracture were recruited for participation. 22 patients (35%) returned for data collection at one-year post and were used for data analysis. 11 were treated surgically, 11 were casted. 16 fractured dominant wrist, 6 non-dominant. Mean age of patients were 53.4 years

Measures

Wrist AROM in Flexion/Extension
Forearm AROM in Pronation & Supination
Grip Strength
Pinch Strength

Procedures

All patients treated by same OTR/CHT using standard hand therapy protocols. Data collected at initial evaluation, discharge, and one-year post injury. Mean outpatient visits = 14 All patients given a home exercise program to follow post discharge.

Results

Table 1: Changes in Active Range of Motion (In Degrees)
Mean (Standard Deviation)

Measure	Initial	Discharge	Recheck
Wrist Extension	33 (17)	57 (15)**	66 (12)
Wrist Flexion	21 (11)	49 (16)**	58 (15)
Pronation	64 (19)	84 (8)**	85 (4)
Supination	43 (28)	77 (9)**	77(6)

**p<.005 All changes between Discharge and Recheck are non-significant, (p >.05)

Table 2: Changes in Grip and Pinch Strength
Mean (Standard Deviation)

Measure	Initial	Discharge	Recheck
Grip	14 (18)	46 (26)**	60 (32)
Lateral Pinch	7 (6)	14 (6)**	16 (6)
2-Point Pinch	5 (4)	9 (5)**	13 (6)
3-Point Pinch	5 (5)	11 (4)**	15 (6)

**p<.005 All changes between Discharge and Recheck are non-significant, (p >.05)

Table 3: Changes in QuickDASH (Self-Reported Disability)
Mean (Standard Deviation)

	Initial	Discharge	Recheck
QuickDASH	55 (25)	16 (12)	9 (8)*

* Mean final QuickDASH score can be considered within normal limits

Discussion

- Short-term out-patient hand therapy is highly effective at improving range of motion, hand strength, and decreasing self-reported disability.
- Patients continued to show impressive but non-significant gains in ROM and hand strength post discharge through the one-year recheck, suggesting recovery continues for at least the first year post injury.
- Self-reported disability decreased during hand therapy, and continued to decline after discharge.
- Final QuickDASH mean score was < 10 which can be considered within normal limits.