

3-2019

Best Approach to Treating Distal Radius Fractures

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Godawski, Ashley and Dobrowolski, Caceti, "Best Approach to Treating Distal Radius Fractures" (2019). *Occupational Therapy Graduate Student Evidenced-Based Research Reviews*. 38.
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Best approach to treating Distal Radius Fractures

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Background Information: Distal Radius Fractures (wrist) are commonly caused by falling on an outstretched hand. The two treatments for distal radius fractures are surgical intervention through Open Reduction Internal Fixation (ORIF) or conservative non-surgical treatment. The ORIF surgery includes reducing the broken bone and then setting it back in place with screws, plates, rods or pins. Conservative treatment includes casting or immobilization of the wrist in order to promote natural healing.

Distal Radius Fracture



VERITAS health

1Ask: Research Question

What approach to treatment (ORIF vs Conservative treatment) proves most effective in functional outcomes for distal radius fractures?

2aAcquire: Search Terms

Databases: Proquest, Google Scholar, Scopus, Pubmed

Search Terms: ORIF, Distal Radius Fracture, Colles Fracture, Occupational Therapy, Outcomes, Distal Radius Fracture Treatment, Mnh, Conservative Treatment

Patient/Client groups: Distal Radius Fracture

Intervention: Conservative Treatment

Comparison: Surgical Intervention through ORIF

Outcome: Functionality

2bAcquire: Selected Articles

Barai, Lambie, Cosgrove, & Baxter (2018): An observational study of 116 DRF patients, 89 receiving conservative care and 29 ORIF.

Ju, Jin, Li, Hu & Hou (2015): A systematic review of patients age 65 and older with reported quantitative clinical and radiological outcomes.

Sharma et al. 2014): A prospective randomized trial of 64 patients with unilateral DRF, aged 25-55.

3aAppraise: Study Quality

Barai, Lambie, Cosgrove & Baxter (2018): Level II study. Study provides a large sample size (n=116). Study only included participants that resided in New Zealand. Outcomes measured using the Disabilities of Arm, Shoulder, & Hand Assessment (DASH). Scores were collected through post and phone methods. Follow up records not available for analysis.

Ju, Jin, Li, Hu & Hou (2015): Level I study. Utilizes a large sample size with ORIF (n=440) and conservative groups (n=449). Eight studies reviewed to address functional and radiological outcomes. Primary outcome measures included the DASH and Visual Analog Scales (VAS). Secondary outcome measures included functional & radiological assessments.

Sharma et al. (2014): Level II study. Study provides small sample size (n=64) with equal number of participants in each group. Participants assessed at 3, 6, 12, 18, & 24 months to determine long-term results. Outcomes measured by range of motion (ROM), grip strength, functional outcome scores, & radiological parameters.

3bAppraise: Study Results

Barai, Lambie, Cosgrove & Baxter (2018): Evidence provided lower DASH scores for the conservative management group signifying better functional outcomes. An increase of age correlates with an increase in DASH scores.

Ju, Jin, Li, Hu & Hou (2015): Evidence found no significance in DASH scores between groups. Conservative group presented with significantly greater wrist flexion, radial deviation, & ulnar variation. ORIF group presented with significantly greater radial inclination compared to the conservative group. Differences did not impact DASH or VAS scores therefore did not impact quality of life.

Sharma et al. (2014): Evidence provided significantly better long-term results with anatomical stable fixation and early mobilization in ORIF group. At 6 week follow up, ORIF had significantly greater ROM & grip strength, radial inclination, volar tilt, & radial length. No significant difference in ulnar variance. Similar trends were found at 3, 6, 12, 18, & 24 month follow up. Complications were more likely to arise in conservative group.

4Apply: Conclusions for Practice

Research related to functional outcomes for optimal treatment for distal radius fractures are mixed. Results more likely to be dependent on key factors, namely: age, severity of injury, comorbidities, etc. Radiological improvements more likely to be observed in ORIF treatment. Improvements in quality of life more likely resulted from conservative treatment. Efforts understanding outcomes related to distal radius fractures have been primarily limited to orthopedic and other medical journals.

Occupational therapy and other allied health have been less likely to explore functional outcomes related to this type of injury. Given 50,000 (Nelson, 2018) cases of distal radius fractures reported in the US per year, this area of research is in need of greater attention to its relationship to functional performance.

References

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ORIF treatment resulted in radiological improvements, while conservative treatment improved quality of life.



Date Completed: April 9, 2019