

Treatment of Bilateral Distal Radius Fracture in the Elderly Population

Introduction:

Distal radius fractures are the most common fracture of the upper extremity in older adults. The optimal treatment for distal radius fractures in patients over 65 years old is unknown. While recent studies have queried treatment strategy for unilateral injuries, treatment of bilateral injuries, an uncommon presentation, have not been described in this population. The purpose of the present study was to characterize patterns in the mode of treatment of bilateral distal radius fractures in the elderly population.

Materials and Methods:

A retrospective analysis of the electronic medical record of a Level 1 Trauma Center in the Southeastern United States for all patients 65 years of age or older who were treated operatively or non-operatively for bilateral distal radius fractures over a ten year period (2010-2020) was performed. Patient demographics, fracture classification, mechanism of injury, associated injuries, treatment method, post-treatment complications, and wrist range of motion were collected and analyzed.

Results: A total of seven patients, 14 wrists, were identified. Average age was 75 years old with five female patients, all of whom were right hand dominant. One patient lived alone and six with family. There were five ground level falls and two polytrauma motor vehicle collision mechanisms. Six fractures were Fernandez type 1, three type 2, and five type 3 injuries. One type 3 injury was open. Of the type 1 injuries, 4/6 were treated closed. 1/3 and 1/5 of type 2 and type 3 underwent closed management, respectively. Of the operative injuries, 5 underwent volar plating, 2 bridge plating, and 1 injury was pinned. Average follow up for all patients was 85 weeks; with two the outliers removed average follow up was 12.6 weeks. Final range of motion assessments for closed and operative management was 50/66.25 degrees, and 48.75/66.25 degrees of flexion/extension respectively. Two operative cases demonstrated functionally impairing grip weakness. Regarding complications of open treatment, one had attritional rupture of extensor tendons requiring repair, and another had persistent tenosynovitis requiring hardware removal. There was no difference in the proportion of Type 1, 2, and 3 injuries treated with closed versus surgical management in a chi-squared test. ($\chi^2= 2.57$ p= 0.28), nor if type 2 and 3 injuries were combined ($\chi^2= 2.43$ p= 0.12). However, many type 1 injuries were treated surgically when a contralateral injury was type 2 or 3.

Conclusions: The study reports on the outcomes of geriatric patients with bilateral distal radius fractures. Many injuries result from low energy falls. There was a trend towards statistical significance for operative fixation of type 2 and 3 injuries, and more type 1 fractures were fixed when a contralateral type 2 or 3 injury was present. All patients achieved functional wrist motion with two complications. Further studies may compare the outcomes against unilateral distal radius injuries.

References:

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