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Patient-reported outcome measures after distal radius fracture at Chris Hani Baragwanath Academic Hospital

Kayuba, Serge Lwamba

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UNIVERSITY OF THE
WITWATERSRAND,
JOHANNESBURG

Division of Orthopaedic Surgery

Faculty of Health Sciences, 4M Room 12, Wits Medical School,
7 York Road, Parktown 2193

Student Name: Serge Lwamba Kayuba

Student Number: 2070826

De**partment**: Orthopaedic Surgery

School: Clinical Medicine

Title of Project: Patient-reported outcome measures after distal radius fracture at Chris Hani Baragwanath Academic Hospital

Abstract

Background: The distal radius fracture is a common orthopaedic injury with a bimodal distribution: high energy in younger patients and low energy in older patients. The incidence is higher in the geriatric population due to osteoporosis and there is an increased fracture risk after a fall. This fracture is treated in different ways (surgical or non-surgical treatment), depending on the treating surgeon's decision and the fracture type. In the past two decades, the management of distal radius fractures has dramatically changed from mainly conservative to increased surgical treatment. Many studies have been done on distal radius fractures, yet questions on gold standard treatment remain, especially in our population group. Should all patients be operated on?

Methodology: This was a retrospective cohort study with a prospective recall of patients treated for distal radius fractures at Chris Hani Baragwanath Academic Hospital. One hundred and fifty-two (n=152) patients treated for a distal radius fracture at our institution, over a two-year period (01 July 2019 to 30 June 2021) were included in the study. The patients were grouped into two groups: surgical treatment group (77 patients) and non-surgical treatment group (75 patients). The minimum follow-up period was three months (Range: 3 months to 5.5 months). Two vetted tools were used in this study to collect data on patients' experience of pain and function after either operative or non-operative management of a distal radius fracture namely the Quick Disabilities of the Arm, Shoulder and Hand (DASH) and Visual Analogue Scale (VAS) scores. An interpreter was used to help with translation in local languages.

Results: A total of 152 patients consented to participate in the study after they had been treated for distal radius fracture at Chris Hani Baragwanath Academic Hospital. Of the 152 participants, 52.8% were female and 47.2% were male. Two-thirds of the participants were older than 40 years. AO/OTA 2R3 A, B and C fracture types were included in the study groups. There was a total of 70 AO/OTA 2R3 A, 26 AO/OTA 2R3 B and 56 AO/OTA 2R3 C fracture types. Of all the distal radius fractures, 59.2% were sustained on the left side. Half of the patients had surgical treatment. In the analysis of AO/OTA type B and type C fractures outcomes in patients aged 50 years and older, a mean DASH score of 20,6 (SD: 17.7) for the surgical group and a mean DASH score of 16.4 (SD: 16.6) for the non-operative group was

found. It was found that surgical treatment did not improve the mean DASH scores in patients aged 50 years and older (p=0,23), but there was a significant decrease in the mean DASH scores in younger patients (p=0.003). Furthermore, there was no significant difference in the VAS between the surgical and non-operative group. Lastly, the Quick DASH scores were influenced by age and type of injury while the VAS scores were not.

Conclusion: This study highlighted that at our institution, distal radius fractures mainly affect females above the age of 50 years with the main mechanism of injury being a fall on an outstretched hand. It was found that surgical treatment of distal radius fractures did not improve the mean DASH scores of patients aged 50 years and older. Furthermore, there was no significant difference in the VAS between the surgical group and the non-operative group. Therefore, this study encourages non-operative management of distal radius fractures in older adults (50 years and older) due to similar pain and function outcomes. Lastly, it was found that the Quick DASH scores were influenced by age and type of injury while the VAS scores were not. Further trials with larger sample sizes and longer follow-up periods are required to provide further evidence.