Association of Hand dominance to the rehabilitation of distal radius fracture

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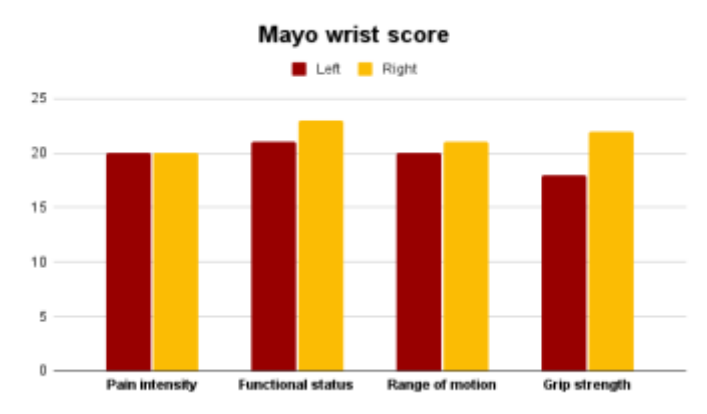
Aim:

To assess the importance of handedness in treatment outcomes of distal radius fracture and the need for early rehabilitation in fractures of non dominant hand.

Method:

30 patients who underwent Open Reduction and Internal Fixation for distal radius fracture at a major trauma centre in South India were retrospectively studied. Approval from the Institutional ethics committee and informed consent were obtained. Functional outcomes between dominant and non-dominant hand fractures were evaluated using the Mayo Wrist scoring system. The association between fracture side and recovery time was determined through the Chi-square test, while the Mann Whitney U test was used to assess statistical differences in pain intensity, functional status, range of motion, and grip strength between the right and left sides.



Results:

The results revealed a significant association between the fracture side and recovery, as confirmed by the Chi-square test (p-value 0.011) and a significant reduction in grip strength in individuals with left wrist fractures supported by the Mann Whitney U test (p-value - 0.019). Distal radius fractures in the dominant hand demonstrated earlier recovery (1-3 months) with a good Mayo score (86.5), whereas fractures in the non-dominant hand required a longer recovery time (3-6 months) and achieved a fair Mayo score (79.5).

Table 1 Showing Association Between Side of Fracture and Recovery Time.

Recovery time	Right	Left	Statistics & P-value
1-3 months	9 (75.0)	5 (27.8)	Chi square - 6.451
>3 months	3 (25.0)	13 (72.2)	P –value 0.011
Total	12 (100)	18(100)	

Table 2 Shows the median of Mayo wrist scores among right and left side of fracture using Mann Whitney U test.

Mayo wrist score	Right	Left	Mann Whitney U test	P-value
Pain intensity	20 (0)	20 (0)	110.5	1.00
Functional status	25 (5)	20 (5)	78.5	0.137
Range of motion	20 (5)	20 (0)	78.5	0.083
Grip strength	25 (5)	20 (3.75)	59.0	0.019

Conclusion:

Distal radius fracture being one of the commonest fractures, the inclusion of handedness cannot be overemphasized beyond during the initial assessment. This might help to start early rehabilitation in fractures of non dominant hand fractures thus preventing the longer recovery time and reduction in the grip strength.