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ORIGINAL RESEARCH

ASSESSMENT OF CASES OF DISPLACED EXTRA-ARTICULAR DISTAL RADIUS FRACTURES

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ABSTRACT

Background: Fractures Of The Distal Radius Account For An Estimated 15- 25% Of All Fractures Diagnosed. The Present Study Was Conducted To Assess Cases Of Displaced Extra-Articular Distal Radius Fractures.

Materials & Methods: 58 Patients Of Displaced Extra-Articular Distal Radiusfractures Of Both Genderswere Divided Into 2 Groups Of 29 Each. Group I Were Treated With Closed Reduction Percutaneous K-Wire Fixation And Group Ii With Openreduction And Volar Plating. Parameters Such As Rom, Dash Score And Mayo Score Were Recorded.

Results: Group I Had 19 Males And 10 Females And Group Ii Had 16 Males And 13 Females. The Mean Value Of Flexion Was 85.2 And 93.0, Extension Was 85.8 And 91.2, Ulnar Deviation Was 86.4 And 95.3, Radial Deviation Was 85.4 And 92.7, Supination Was 81.3 And 80.6 And Pronation Was 77.4 And 76.2 In Group I And Ii Respectively. The Mean Dash Score In Group I Was 35.8 And In Group Ii Was 35.0. The Difference Was Non-Significant (P> 0.05).

Conclusion: Surgery Is The Ideal Treatment Approach For Displaced Extra Articular Distal Radius Fractures.

Key Words: Distal Radius, Dash Score, Mayo Score

INTRODUCTION

Fractures Of The Distal Radius Account For An Estimated 15- 25% Of All Fractures Diagnosed. The Importance Of Distal Radius Injuries Has Increased In The Recent Time Due To An Increase In Lifespan. There Is A Bimodal Distribution Noticed In The Incidence Of Such Fractures, With Younger Patients Sustaining Complicated, High-Energy Injuries While Olderpatients Sustain Low Energy Fractures.[1]

Intra-Articular Component In Distal Radius Fractures Usually Signifies High-Energy Trauma Occurring In Young Adults.[2] High-Energy Injuries Frequently Cause Shear And Impacted Fractures Of The Articular Surface Of The Distal Aspect Of The Radius With Displacement

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Of The Fracture Fragments. The Fracture Pattern Most Commonly Observed In Geriatric Age Group Is Extra-Articular While The High-Energy Intra-Articular Type Is Most Frequent In Young Adult Patients.[3]

Volar Locking Plates Have Become Increasingly Popular As It Involves A Relatively Simple Volar Approach To The Wrist, Followed By Fracture Fixation Using Fixed Angle Implants. More Importantly It Allows The Individual To Be Free From A Cast Thus Allowing For Earlier Mobilization And Return To Daily Tasks. Open Reduction And Internal Fixation With Locking Plates Allows More Accurate Reduction And Immediate Stable Fixation.[4] The Fracture Stability Allows For Early Mobilization And May Therefore Result In An Improved Recovery Of Function. K-Wire Fixation Is A Minimally Invasive Procedure Between Open Reduction Plate Fixation And Conservative Treatment And Numerous Authors Have Reported Good Results With This Technique.[5]the Present Study Was Conducted To Assess Cases Of Displaced Extra-Articular Distal Radiusfractures.

MATERIALS & METHODS

The Present Study Comprised Of 58 Patients Of Displaced Extra-Articular Distal Radiusfractures Of Both Genders. The Consent Was Obtained From All Enrolled Patients.

Data Such As Name, Age, Gender Etc. Was Recorded. Patients Were Divided Into 2 Groups Of 29 Each. Group I Were Treated With Closed Reduction Percutaneous K-Wire Fixation And Group Ii With Openreduction And Volar Plating. Parameters Such As Rom, Dash Score And Mayo Score Were Recorded. Data Thus Obtained Were Subjected To Statistical Analysis. P Value <0.05 Was Considered Significant.

RESULTS

Table I Distribution Of Patients

Groups	Group I	Group Ii
Method	K-Wire Fixation	Volar Plating
M:F	19:10	16:13

Table I Shows That Group I Had 19 Males And 10 Females And Group Ii Had 16 Males And 13 Females.

Table Ii Comparison Of Rom In Both Groups

Rom	Group I	Group Ii	P Value
Flexion	85.2	93.0	0.05
Extension	85.8	91.2	0.01
Ulnar Deviation	86.4	95.3	0.02
Radial Deviation	85.4	92.7	0.05
Supination	81.3	80.6	0.93
Pronation	77.4	76.2	0.96

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Table Ii, Graph I Shows That Mean Value Of Flexion Was 85.2 And 93.0, Extension Was 85.8 And 91.2, Ulnar Deviation Was 86.4 And 95.3, Radial Deviation Was 85.4 And 92.7, Supination Was 81.3 And 80.6 And Pronation Was 77.4 And 76.2 In Group I And Ii Respectively. The Difference Was Significant (P< 0.05).

Graph I Comparison Of Rom In Both Groups

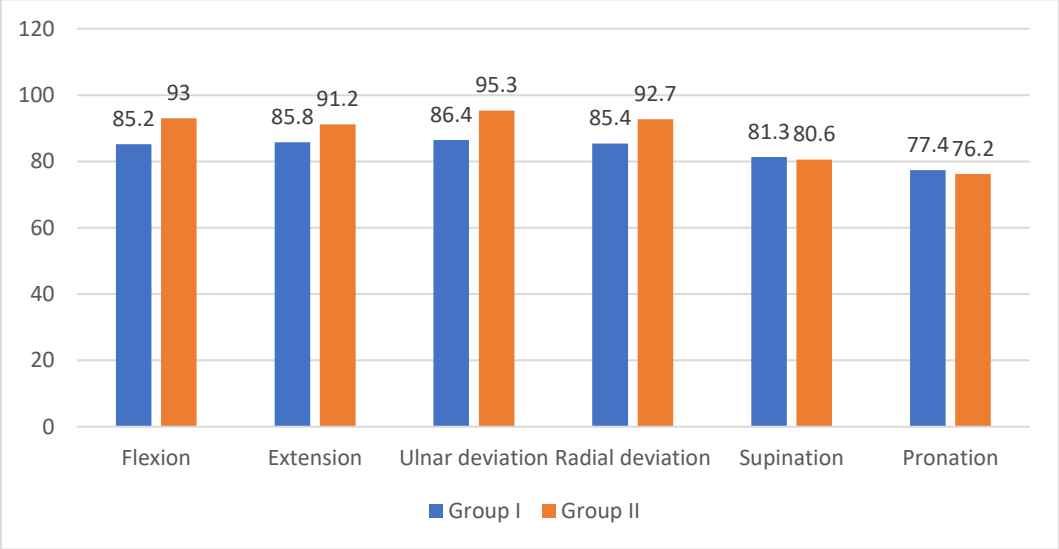

Table Iii Comparison Of Dash Score

Parameters	Group I	Group Ii	P Value
Dash Score	35.8	35.0	0.96

Table Iii Shows That Mean Dash Score In Group I Was 35.8 And In Group Ii Was 35.0. The Difference Was Non- Significant (P> 0.05).

Table Iv Comparison Of Mayo Score

Mayo Score	Group I	Group Ii	P Value
Poor	6	0	0.05
Satisfactory	22	16	0.92
Good	1	10	0.01
Excellent	0	3	0.21

Table Iv, Graph Ii Shows That Mayo Score In Group I And Group Ii Was Poor In 6 In Group I And 0 In Group Ii, Satisfactory 22 In Group I And 16 In Group Ii, Good Seen In 1 In Group I And 10 In Group Ii And Excellent0 In Group I And 3 In Group Ii. The Difference Was Significant (P< 0.05).

Graph Ii Comparison Of Mayo Score

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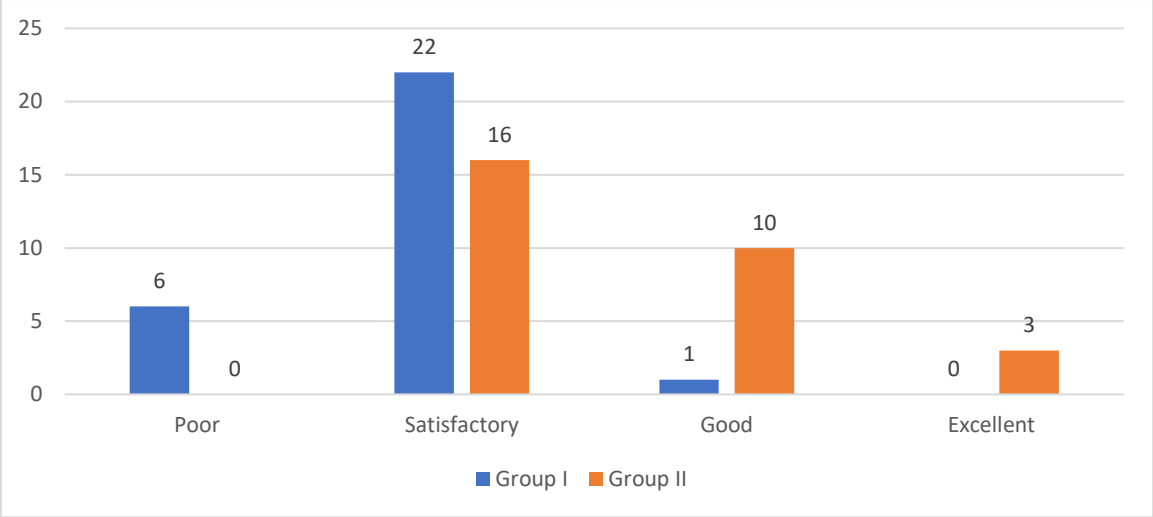

DISCUSSION

Distal Radius Fractures Are One Of The Most Common Injuries Encountered In Orthopedic Practice. They Make Up 8%−15% Of All Bony Injuries In Adults.[6] Abraham Colles Is Credited With Description Of The Most Common Fracture Pattern Affecting Distal End Radius In 1814, And Is Classically Named After Him.[7]colles' Fracture Specifically Is Defined As Metaphyseal Injury Of Cortico-Cancellous Junction (Within 2−3 Cm Of Articular Surface) Of The Distal Radius With Characteristic Dorsal Tilt, Dorsal Shift, Radial Tilt, Radial Shift, Supination And Impaction.[8] Smith's Fractures, Also Referred To As Reverse Colles' Fracture, Have Palmar Tilt Of The Distal Fragment.[9] Barton's Fracture Is The Displaced Intra-Articular Coronal Plane Fracture-Subluxation Of Dorsal Lip Of The Distal Radius With Displacement Of Carpus With The Fragment.[10] The Present Study Was Conducted To Assess Cases Of Displaced Extra-Articular Distal Radiusfractures.

We Found That Group I Had 19 Males And 10 Females And Group Ii Had 16 Males And 13 Females. Nazeer Et Al[11]compared The Functional Outcomes Of Extra Articular Distal Radius Fractures Managed Operatively With Those Managed Conservatively. 18 To 65 Years Old Patients With Displaced Extraarticular Distal Radial Fracture Were Treated Surgically Or Conservatively. Dash And Modified Mayo Wrist Score Were Calculated After A Follow Up Of One Year. At The End Of 12 Months The Patients Were Evaluated, And It Was Noticed That Patients Who Were Treated Operatively Had Significantly Better Functional And Clinical Outcomes, As Indicated By Significantly Higher Mayo Scores Than Patients Treated Conservatively By Casting. The Dash Scores Were Lower In The Patients Who Had Undergone Operative Management.

We Found That Mean Value Of Flexion Was 85.2and 93.0, Extension Was 85.8 And 91.2, Ulnar Deviation Was 86.4 And 95.3, Radial Deviation Was 85.4 And 92.7, Supination Was 81.3 And 80.6 And Pronation Was 77.4 And 76.2 In Group I And Ii Respectively. Lutsky Et Al[12] Did Arthroscopic Assessment In All Patients Undergoing Open Reduction And Internal Fixation And Observed That A Volar Approach, Indirect Reduction And Locked Plate Fixation Is A Useful Technique In Restoring Articular Congruity After Distal Radius Fracture.

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Themean Dash Score In Group I Was 35.8 And In Group Ii Was 35.0. Koenig Et Al[13] Evaluated Whether Orif Was Preferable To Nonoperative Treatment For Acceptably Reduced Distal Radial Fractures. The Authors Concluded That Orif Was The Preferred Treatment, Especially In Young Patients, And Reported A Long-Term Gain In Quality-Adjusted Life Years.A Retrospective Study Reported That All Patients With Step Off Of 2 Mm Or More In The Distal Radial Articular Surface Developed Post-Traumatic Osteoarthrosis, Whereas Patients Who Healed With Less Than A 2 Mm Step Off Had Only A 25% Incidence Of Arthrosis.[14]

CONCLUSION

Authors Found That Surgery Is The Ideal Treatment Approach For Displaced Extra Articular Distal Radius Fractures.

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