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HYBRID FIXATION OF COMMINUTED DISTAL RADIUS FRACTURE – A FUNCTIONAL OUTCOME ANALYSIS

Orthopaedics

Dr.Manoj Kumar* MBBS,DNB (ORTHOPAEDICS) *Corresponding Author

Dr.Swati Sinha MBBS,DNB(PMR)

ABSTRACT

Presenting our experience in the use of combination of Plating and external fixation (Hybrid fixation) in 20 comminuted intraarticular distal radius fracture. Comminuted distal radius intraarticular fracture treated by hybrid fixation have predictable outcome and satisfactory result with good radiological and clinical outcome.

KEYWORDS

Main text: We are presenting our experience in the use of combination of Plating and external fixation (Hybrid fixation) in 20 comminuted intraarticular distal radius fracture.

Aim and Objectives: We are presenting our experience in the use of combination of Plating and external fixation (Hybrid fixation) in 20 comminuted intraarticular distal radius fracture

Materials and Methods: 80 patients with distal radius fracture were treated by us between March 2016 and November 2017.

Out of this, 20 patients matched our inclusion criteria and were enrolled for the study. There were 19 males and 1 female

Inclusion criteria: Over 18 years Groosly comminuted intraarticular fracture 21 days or less between injury and surgery Patient must be medically fit Patients have mental faculties to participate in post operative evaluation

Exclusion Criteria: Open fracture
Extraarticular fracture Neurovascular injury requiring repair at same time
Active infection
Ipsilateral limb injury

Prior wrist injury or degenerative condition or congenital wrist anomaly
All the patients were clinically and radiologically assessed
Pre-operatively
Six weeks,
Three months,
Six months,
One year.

A functional scoring was done using

Gartland JJ, Werley CW (1951) Evaluation of healed Colles' fractures. J Bone Jt Surg 33-A: 895-907
Results: 20 patients treated surgically,
8 excellent,
6 good result,
4 fair,
2 poor.

Complications: 2 pin tract infection
1 patient had Reflex sympathetic dystrophy

Discussion: The most commonly used evaluation system is the Gartland and werley point system
Objective evalution of the function
70 degree dorsiflexion,
90 degree palmar flexion,
35 degree radial and ulnar deviation
90 degree pronation and supination - normal function.

GRAHAM and HASTINGS;surgical correction of malunited fracture of distal radius, j Am Acad Orthop surg 5;270,1997

Suboptimal results have been reported in previously published study.

Therefore every effort should be made to restore normal length, alignment and articular surface congruency of distal radius.

Recommended period of immobilization of fracture treated by external fixator varried in literature.

Grana and Copta recommended 6wks,D'Anc et.al 6.5wks,Vaughan et.al,8wks and Cooney 8wks of external fixation.

In our study healing in hybrid fixation is 4- 5 weeks.

In our series, majority of cases had excellent to good outcome as we were able to get good articular congruity. most of the patients had minor degree of pain and slight limitation of motion.

In our study we had 2 cases of poor result due to pin track infection and Sudek's dystrophy

Review of Literature;

Cooney,W P; External fixation of distal radial fracture. Clin.Orthop., 180; 44-49, 1983

Frykman, G; Fracture of the distal radius ….A clinical & experimental study. Acta Orthop Scandinavica. Supplementum 108, 1967.

Green D.P. Pins and plaster treatment of comminuted fractures of the distal end of the radius. J Bone Jt. Surg. Am. 1975; 57:304-10.

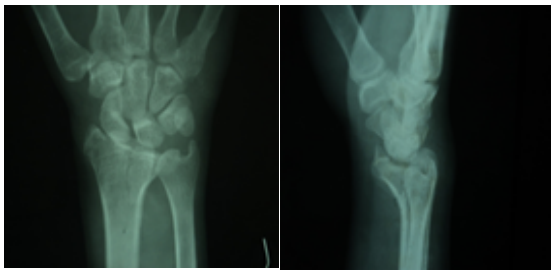
Gartland JJ Jr., Werley C.W. Evaluation of healed Colles' fractures. J Bone Joint Surg (Am) 1951; 33-A, 895-907.

Iiizarov GA.The tension stress effect on the genesis and growth of tissue.Clin Orthop.1989;238:249-291.

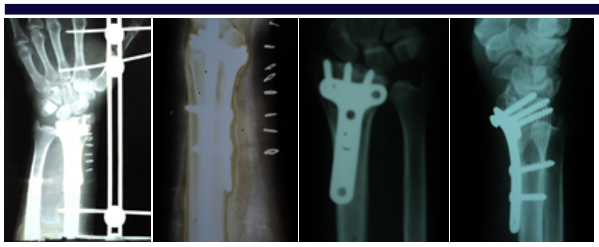
Campbell D.A. Open reduction and internal fixation of intra-articular, unstable fractures of the distal radius using the AO distal radius plate. J Hand Surg. 2000, 25-B: 528-534.

CASE-1

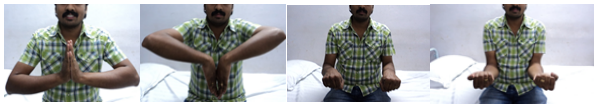
A 30 year old male patient came with history of RTA sustained injury to right wrist followed by pain and deformity.



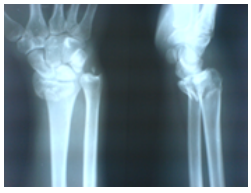
Pre-Op



Post-Op
ROM AT END OF ONE YEAR



Case2;
A thirty year old patient, came with history of accidental fall from bike sustained injury in left wrist followed by pain and deformity



Pre-op

Post-op
Range of motion

Conclusion;
Comminuted distal radius intraarticular fracture treated by hybrid fixation have predictable outcome and satisfactory result with good radiological and clinical outcome.

In addition we also found that the duration of immobilization in this method was relatively less compare to other method of treatment.

Drawback of the study is absence of a control group.