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Functional Outcome of Distal End of Radius Fractures Treated With Volar Plating

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Author's contribution

The sole author designed, analyzed, interpreted and prepared the manuscript.

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ABSTRACT

In this study we evaluated the functional outcomes of open reduction and internal fixation of distal radius fractures by plate osteosynthesis in considering the parameters like radiological,clinical, and functional outcome in all types of fractures. There blood loss for volar locked plating cases was around 200ml. the pain after the surgery was present equally in all and responses was good to analegesics. It was observed that the plating distal radius is very effective in maintaining length in all types. Good alignment was observed in allmtype of fractures, in case of communited fractures as well. The early recovery and movement in the patients treated with volar locked plating gives a better outcome and good working capacity.

Keywords: Fracture; volar plates; distal radius.

1. INTRODUCTION

Almost 14% of extremity fractures is reported to be Distal Radius fractures and of all, 17% of all fractures were attended in causality [1,2]. In the past twenty years the management of this fracture ventured to the next state in the past two decades [3-5]. Universal cast treatment gave way to neutralization with a bridging external fixator, which In turn was replaced by dorsal buttress plating [6-8]. The recent advancement in the techniques ended in usage of percutaneous

pin fixation, palmar translation, External fixation devices that permit distraction and, Low profile internal fixation plates with locking screws, and arthroscopically assisted reduction have improved the management of distal radius fractures. In better long term clinical outcomes [9,10]. This study aims to assess the significance of distal end of radius fractures treated with volar plating.

2. MATERIALS AND METHODS

Unstable Extra or Intra articular fractures of Distal Radius were included in this study. The patients were treated initially by closed reduction under general anaesthesia and radiographs was used to assess the position of fracture. All cases were treated initially by closed reduction under general anaesthesia and position of fracture was checked by radiographs. All fractures in our study lost reduction after manipulation. All cases were selected for external Open Reduction and Internal fixation with Plate Osteosynthesis. This was done for 6 Type I, 9 Type II and 12 Type III cases. The plane between Radial artery and the Flexor carpi radialis Was exposed. Elevation of pronator quadratus from the distal aspect of Radius provides the necessary exposure for placement of locking plate.

Follow up: X-rays were taken in immediate post operative, 2weeks, 6weeks, 3 months, 6 months and 10 months. Radiological assessment at each post operative visit was done from AP and lateral radiographs and included assessment of union of frae-ture and loss of reduction .At six months & 10 months radiographs were observed for arthritic changes. Functional outcome measure, Disability Arm Shoulder Hand questionnaire was done at 6 & 10 months.

Radiological assessment was done to ascertain any reduction loss and fractures union.

3. RESULTS

Better union of fractures was observed in a period of 1.5 months union DASH score – only in just two cases the score was high that's is due to poor reduction, fracture geometry and also less cooperation in physiotheraphy.Other complications such as early improvement in range of movements and patients gained and reasonable range movements after intense physiotherapy.No iatrogenic neuro vascular injury, post traumatic arthritis were reported. DASH score - In two cases the score was higher because of fracture geomentry, improper reduction and poor compliance to physiotherapy.Shoulder stiffens was also not observed.The Grip strength is reported to be good

4. DISCUSSION

In this study we evaluated the functional outcomes of Open reduction and internal fixation of distal radius fractures by plate osteosynthesis withclinical, radiological parameters. It is very short time period study.

Fig. 1. Shows Volar Henry's approach

In our study blood loss for volar locked plating cases was 200ml. pain after the surgery was present equally in all which reacting good to analegesics. Patients had better palmar flexion and radial deviation at regular follow up. Wrist movements were also improvised in volar locking plating. Rozental TD, Blazar PE retrospectively resported 43 Patients who had been treated by a Volar locked plate concluded that, Patients with unstable, dorsally displaced fractures of the distal radius treated with volar fixed-angle devices have good or excellent functional outcomes despite a high complication rate.

Its due to mobilization of volar plated group in immediate post operative period. From the results it was found that Use of locked volar plate surely gives good patient reported outcome according to DASH score and encourages better and prior range of wrist motion which yields accelerated return of function.

5. CONCLUSION

The study confirms the plating distal radius is very goode in maintaining length in all types. Even in communited fractures. However radiological outcome such as Length maintenance and union are very satisfactory.

Patients had better palmar flexion and radial deviation at regular followups. Improvised wrist movements was also observed in volar locking plating. This is due to mobilization in immediate post operative period.

CONSENT AND ETHICAL APPROVAL

As per international standard or university standard guideline Patient's consent and ethical approval has been collected and preserved by the authors.

COMPETING INTERESTS

Author has declared that no competing interests exist.

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