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Research Article

**EFFICACY OF PRECOUNTERED LOCKING COMPRESSION
PLATE FOR ELBOW RECONSTRUCTION**¹Dr. Arman Amjad, ¹Dr. Lyba Ghayour, ²Dr. Aqsa Khan¹Mayo Hospital Lahore²WMO Basic Health Unit Kotha Kalan Rawalpindi,**Abstract:**

Objective: To evaluate the functional results of the reconstruction of the elbow after the use of pre-prepared LCP.

Study Design: A retrospective study.

Place and Duration: In the Orthopedic Department Unit II of Mayo Hospital, Lahore for one year period from August 2016 to August 2017.

Methods: Twenty-five consecutive patients presented in our department were selected for analysis. Osteosynthesis was tested using the transolecranon approach using Chevron osteotomy. For postoperative immobilization, posterior splints were given for two weeks. In three weeks, rehabilitation of Elbow started followed by a functional evaluation every 3 months using the Mayo Elbow scoring system.

Results: 25 patients were selected for this study with male were 13 and females were 12 with male / female ratio of 2.15: 2. The 35 years was the mean age, between 23 and 76 years. Most of the injuries that occurred after accidents of motorcycle were reported in a total of 20 AKRs and 5 fell as an injury mechanism. 15 patients (60%) have injury dominated in the right hand. The union was usually performed in 22 weeks and 13 weeks, and the 5 remaining patients had delayed inflammation in 20 weeks. After recovery, all fractures were stable. The 10° was the maximum extension noted and 120° was the maximum flexion reached with an average arc of 110 ar. None of the patients had been followed during the loosening of the implant or the removal of the screws. One patient had spontaneous self-healing ulnar nerve neuropraxia for the next four months. Stiffness was observed in 1 case. Mayo elbow score: excellent in 12 (48%), good in 8 (32%), regular in 3 (12%) and bad in 2 (8%).

Conclusion: For the management of Complex extra or Intra articular distal humerus fractures needs specialized operative methods. We found better functional result of the elbow when using the precontouring anatomical locking compression plate.

Key words: Intraarticular system, elbow, reconstruction of the Mayo elbow score, anterior contoured block plates.

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INTRODUCTION:

The fixation principle of intracranial fracture is absolute fixation with anatomic reduction and stabilizing extraosseous implantation. Functional outcome was influenced greatly by early rehabilitation exercise. There are various approaches and methods for fracture fixation; It is generally rely on the pattern of fracture and the surgeon's experience. After open fixation and internal fixation with LPCs, satisfaction fracture reunion, range of motion and functional outcome were evaluated.

MATERIALS AND METHODS:

This retrospective study was held in the Orthopedic Department Unit II of Mayo Hospital, Lahore for one year period from August 2016 to August 2017. 25 patients who were treated for periarticular and intraarticular fractures of the elbow holding the distal humerus were selected.

Mayo Elbow Score System**Section 1: Pain Intensity and SCORE**

None 45
Mild 30
Moderate 15
Severe 0

The exclusion criteria of this research are based on the treatment of percutaneous wires K and treated on conservative treatment, traditional plate patients. Posterior approach was recommended and in 17 patients trans-olecranon chevron shaped osteotomy was used and in 8 patients triceps reflection was done. fracture reduction is initiated after total exposure to the surface of the joint, and then joined to a metaphysis decomposition axis.

Section 2 – Motion and score

Arc of motion greater than 100 degrees 20
Arc of motion between 50 and 100 degrees 15
Arc of motion less than 50 degrees 05

By reduction clamps, the reduced bone pieces were held in position by and with Kirschner wires were fixed temporarily. Under imaging the K-wires were applied and under fluoroscopy, and they were not allowed to interfere with the application of the plate. For the prevention of iatrogenic lesions, the ulnar nerve was fixed and mobilized for the proximal flexor.

Section 3 – Stability and score

Stable 10
Moderate instability 05
Grossly Unstable 0

The first branch of the motor branch within the center of the prosthesis was 4, which allows the translation of the anterior nerve from the anterior nerve. Screw and plate fixation was applied to all patients using intercondylar delay screws and contoured LCP.

Section 4 - Function and score

Can comb hair 05
Can eat 05
Can perform hygiene 05
Can don shirt 05
Can don shoe 05

The osteotomy of the olecranon was closed with a single washer using a 6.5 mm sponge screw or, if necessary, a tension band cable. All wounds were closed by placing the drain. 2 weeks were given to develop soft tissue in all cases, a long arm gypsum splint was applied. During the follow-up elbow, the patient was evaluated by demographic, injury mechanism, range of motion, postoperative pain, functional activity and stability scoring elbow. Complications were recorded. It was then performed 4 weeks, 2 months, 3 months and every six months.

Interpreting the Mayo Elbow Performance Score

Score > 90	Excellent	Score 75-89	Good	Score 60-74	Fair	Score < 60	Poor
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RESULTS:

Twenty-five patients were male and 12 female (22-76 years). After motorbike accidents large number of injuries that occurred were recorded as 20 RTAs and 15 (60%) were injured on the right side. Although in the ward, most of the patients were admitted and in the High Dependence Unit, only two patients were referred and then transferred to the orthopedic department when stable. The injury time of fixation range from 13 hours to 5 days. The unions were usually performed in 22 weeks and 13 weeks, and were delayed for 20 weeks in 4 patients. After recovery the stability of all fractures was noted. The maximum extension was 10°. The 120° was the maximum flexion and the mean was 110 ar. During the follow-up visits, none of the patients relieved the implant or removed the screws. After septic shock 2 cases required removal.

1 required prominent intercondylar screw removal. One patient had spontaneous neuropraxia for spontaneous recovery of the ulnar nerve for the next 4 months. May elbow score was excellent in 13 (49%), in 9 (33%) was good, regular in 4 (13%) and bad in 3 patients (9%).

DISCUSSION:

Distal humerus fractures are not common in adults, but are one of the most difficult fractures to reduce and correct. Although rare, distal humerus fractures are the major challenge for surgical fixation and absolute anatomical reduction. Surgical experience is extremely important. Good functional results are expected with an intelligent surgical approach and early rehabilitation. In the past, conservative treatment was preferred with prolonged immobilization and unsatisfactory functional results, which allowed the patient to remain dysfunctional for longer. Restoration of the joint surface and reconstruction of the elbow joint are mandatory for the reorganization of maximum joint function. Stabilization of fractures with plaque osteosynthesis based on restoration of joint compliance. Elderly women with osteoporosis often have a history of falling due to such fractures. In our study, we found that 4 elderly patients had a history of falling to the floor during walking and motor vehicle accidents occurred in young and middle-aged patients. During the treatment of intra-articular fractures, all patients underwent an olecranon osteotomy with anatomic restoration of the common fit; They all showed an increase in ROM with excellent functional results. In our study, excellent results were obtained in 12 patients (48%), good in 8 patients (32%), in 3 patients (12%) and in 2 patients (8%). In all, 13 patients (52%) had no pain, 13 patients (52%) had >

100 ° flow, all (100%) showed stable improvement in elbow fracture and 15 patients (60%) showed activity. 7 patients (28%) had mild and moderate mild activity. The union was usually performed in 21 weeks and 12 weeks, and the remaining 4 patients were delayed in 20 weeks. The late relationship was mainly observed in elderly patients with osteopenic bone and thus in fragile fractures. The maximum extension was 10°. The maximum flexion was 120° and the mean was 110 ar. The movement and other results observed in our patients can be compared with other studies. The screws and loosening of the implant were not removed during the follow-up examinations. After removal of the olecranon osteotomy screw in 2 of the 17 patients and the recovery of the fractures in 1, significant intercondylar screw removal was required. One patient had spontaneous neuropraxia for spontaneous recovery of the ulnar nerve for the next 4 months. Hardness was seen in one patient (4%). Heterotopic ossification was not seen in any patient. The fragmentation of fractures or multiple fragments in high-speed traffic accidents is more common in the young population. The plates were prepared to adapt to the ulnar and radial sides (2). After surgery, a more conservative approach to active passive motion was allowed and, as recommended by Schatzker, helped reduce implant burden.

CONCLUSION:

For the management of Complex extra or Intra articular distal humerus fractures needs specialized operative methods. We found better functional result of the elbow when using the precontouring anatomical locking compression plate.

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