

A CASE REPORT OF POST TRAUMATIC UNSTABLE ELBOW MANAGED BY RADIAL HEAD PROSTHETIC REPLACEMENT WITH CEMENT AUGUMENTATION

Orthopaedics

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ABSTRACT

Radial head fracture is not uncommon fracture that is seen in patient who had fall on an outstretched hand or direct fall on elbow but Mason's type 4 of radial head fracture with dislocation along with undisplaced lateral condyle of humerus fracture and tear of annular ligament is a debatable because it is an unstable fracture which need proper clinical and radiological evaluation for preoperative diagnosis and management[1,2]. Reduction of displaced elbow followed by fixation with prosthetic radial head along with repair of annular ligament and lateral collateral ligament provides better outcome clinically as well as functionally with less postoperative complications and function wise the compliance is better as compared to excision or fixation with plate, if provided postoperative rehabilitation is followed along with regular followup.

KEYWORDS

Mason's type 4 radial head fracture with elbow dislocation and ligamentous injury, replacement with titanium radial head ,annular ligament repair

INTRODUCTION

Radial head fracture is most common fracture that occur around elbow. Fixation of this fracture with titanium radial head is challenging than radial head excision [3,4]. The patient compliance is better with titanium radial head prosthesis. unstable radial head fracture is associated with dislocation of elbow along with injury of annular ligament and hence patients can present with elbow instability, stiffness and requires CT scan as mandatory investigation [5,6,7]. Treating this complicated fracture with ligament repair is mandatory along with postoperative physiotherapy exercises for better clinical and functional outcome.

CASE REPORT

A young female patient ,30 years of age who is an architect by occupation with left hand dominance presented to our emergency department with alleged history of slip and fall while crossing the railway track, sustained injury to her left elbow and presented with complaints of pain, swelling and unable to bend her elbow since trauma .No history of any comorbidities .On examination there was local warmth,tenderness over the left elbow ,range of movements at the elbow joint was restricted without distal neurovascular deficit. Xray was taken that showed posterior dislocation of elbow and displaced radial head fracture.CT left elbow done to know more about the fracture pattern .CT report showed following findings "comminuted displaced fracture of radial head and linear displaced fracture of lateral condyle of humerus". Then closed reduction of elbow was attempted and reduction was successful. Patient then was planned for radial head excision followed by radial head replacement. Intraoperatively, the annular ligament tear and lateral collateral ligament tear was visualised and repair was done using non absorbable suture. After fixation intraoperatively it was checked under C-arm guidance and stability was checked clinically and post examination elbow was found and fixation was found to be satisfactory and above elbow POP was applied. Postoperatively active finger movements exercises and elbow physiotherapy was initiated. After 3months follow-up patient Mayo's elbow performance index score was 90/100 . After 6 months the MEPS was 95/100.After 1 year MEPS was 100/100 with the range of movements at elbow was restored without any residual pain,stiffness and instability.

PREOPERATIVE CT scan

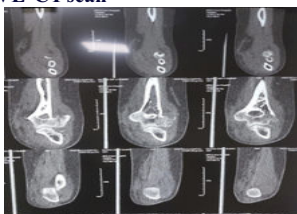


Figure No1a : Sagittal view of CT left elbow showing radial head fracture.



Figure No1b: 3D reconstruction of CT left elbow shows tibial avulsion fracture

INTRAOPERATIVE IMAGE



Figure No 3a: Skin Marking Was Done



Figure no 3b : Fractured radial head was identified and excised

Figure no 3c : Excised radial head was measured(20mm)



Figure no 4 : Intraoperative picture showing proximal radius and reaming done with hand reamer



Immediate Post op Xray



1 Month Post op Xray



6 months Post op Xray

1 year Post op Xray

DISCUSSION

Comminuted displaced fracture of radial head with displaced fracture of lateral condyle of humerus along with annular ligament tear is a little rare modality accounting for 1.5% to 5.5%^(8,9). This type of fractures leads stiffness, post operative pain and instability if not addressed properly. Radial head replacement along with repair of annular ligament and condylar fracture of humerus helps to achieve a better clinical outcome and better stability as compared to excision alone or ORIF with plate osteosynthesis⁽¹⁰⁾. The main intention of this procedure is to restore the elbow biomechanics and to maintain the ligament stability^(11,12). In this case we used titanium prosthesis of size 20 x 6 x 8 augmented with bone cement along with suturing of annular ligament with non absorbable suture material.

Postoperatively above elbow slab was applied and 1 month follow up after radiological and clinical confirmation of union at lateral condyle fracture site patient was fully allowed to do all range of movements at the elbow (flexion, extension) and Supination and pronation at proximal radio-ulnar joint.

After 6 months of follow up patient was allowed to engage in daily home and sports activity.

Declaration Of Patient Consent:

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given the consent for his/her images and other clinical information to be reported in the journal. The patient understands that his/her names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Conflict of interest: Nil Source of support: None

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