



ANTERIOR ELBOW DISLOCATION WITHOUT NEUROVASCULAR INJURY- A RARE CASE REPORT

Orthopaedics

Dr. Jayesh Chouhan

Senior Resident, M.S Orthopaedics, DR.S.N Medical College, Jodhpur

Dr. Nandlal Bharwani*

Senior Resident, M.S Orthopaedics, M.S Orthopaedics, DR.S.N Medical College, Jodhpur *Corresponding Author

Dr. Mahesh Bhati

Senior Professor and HOD, M.S Orthopaedics, DR.S.N Medical College, Jodhpur

ABSTRACT

Introduction- Of all the injuries around elbow joint, simple anterior elbow dislocation is of rare occurrence usually as a result of direct injury to proximal ulna after fall on semi-flexed elbow. **Case report-** A 6year-old female child presented to emergency department of our hospital with history of fall from 11 feet height followed by pain, deformity, swelling around left elbow and forearm. Digital radiographs suggestive of anterior elbow dislocation, which was managed successfully with closed reduction. **Conclusion-** Simple anterior elbow dislocation in paediatric population is a rare entity and closed reduction is treatment of choice followed by physiotherapy under-supervision for good functional outcome in terms of range of motion.

KEYWORDS

Anterior elbow dislocation, closed reduction, children, fall from height.

INTRODUCTION-

Of all the dislocations in paediatric age group, elbow dislocations are rare occurrence and among all injuries around elbow joint it constitutes merely 3-6% of cases.¹ Of all the dislocations around elbow joint posterior type is common followed by anterior type.² These injuries are commonly seen in 1st -2nd decade of life nearly around skeletal maturity.³ Usually dislocations around elbow joint are complex as commonly seen with fractures and neurovascular injuries as stated by Hippocrates.⁴ We report a case of anterior elbow dislocation without fracture and neurovascular deficit in 6year-old female child which is very less reported in literature.

Case Report-

A 6year-old female presented to emergency department of our hospital with chief complaint of pain, deformity, massive swelling around elbow and forearm region since one day, after fall from height which was around 11 feet on her flexed elbow. On clinical examination, her elbow was flexed around 10°- 20°, forearm in supination, and on posterior aspect of elbow joint a depression was noted with loss of contour of joint. Massive swelling was noted around left elbow and forearm without any blisters or wound. The radial pulse was palpable, with movements distal to injury were present.

Thereafter, digital radiograph of elbow joint (antero-posterior and lateral views) were performed that were suggestive of anterior elbow dislocation without associated bony injury. Informed consent was taken from relatives before starting the procedure.

In, emergency operation theatre under intravenous sedation closed reduction was carried out using reduction technique which involves traction at wrist joint with counter-traction at arm with slight flexion and posterior force on forearm followed by confirmation of radial pulse post-reduction and stability of joint was confirmed under fluoroscopy. Thereafter above elbow plaster for three weeks was given in mid-prone position. In our case we performed post-reduction computed tomography of elbow joint for checking the congruity of elbow joint and associated bony injuries. Then after three weeks post-injury, physiotherapy was performed under guidance. The patient normal range of motion six months post-injury and patient was followed-up for one year post-injury and no associated complications were seen

DISCUSSION-

In 1787, Evers described the first case of elbow dislocation of anterior type.⁵ Elbow dislocation is rarely seen in pediatric population. In a long term study (1996 – 2014) conducted by Hyvonen et al, the incidence of dislocation of elbow joint was found to be 6.4 per 100,000 cases, out of which anterior dislocation was seen in only 1.9% of all the reported cases.⁶ In comparison to posterior type of elbow dislocation, anterior type is of rare occurrence and that to without

associated fractures around elbow and without neurovascular deficit is of rare presentation, as similar finding was shown in study conducted by Rasool et al on 33 patients (30 posterior, 3 anterior).⁷

As we are well known of the stabilizers of elbow joint the ulno-humeral articulation along with collateral ligaments (medial and lateral) being the primary stabilizers and secondary stabilizers being radio-capitellar joint, common flexor and extensor mass.⁸

The mechanism of injury proposed for anterior elbow dislocation is direct injury to proximal ulna after fall on semi-flexed elbow, which was seen exactly in present case.⁹

The rare occurrence is explained by presence of strong posterior structures of elbow joint including posterior capsule, triceps and olecranon. In present case, injury was severe which leads to disruption of posterior structures, responsible for this rare occurrence.¹⁰

This rare entity is mostly associated with bony injuries like trans-olecranon fractures, medial condyle humerus fractures and may be associated with neurovascular injuries but in present case none of the above mentioned were encountered present case making this a rare presentation.^{7,9,10} For this closed reduction is treatment of choice, and reduction to be carried out gently to prevent entrapment of nerve, growth plate and bony injuries.¹¹ The advantage of closed reduction for anterior elbow dislocation being improvement in functional range of motion which was similar to findings in studies conducted by Rasool et al,⁷ and Moussa et al.¹²

CONCLUSION-

Simple anterior elbow dislocations are rare injuries encountered in orthopaedic emergency rooms and that to in paediatric population is very rare. Therefore, proper clinical examination along with radiographic evaluation helps in definitive diagnosis and treatment, which results in normal range of motion and prevents further bony deformity around elbow joint.



Fig-1 showing swelling around left elbow joint and forearm.

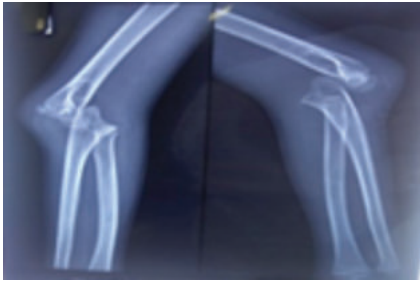


Fig-2 Digital radiograph antero-posterior and lateral view suggestive of anterior elbow dislocation.

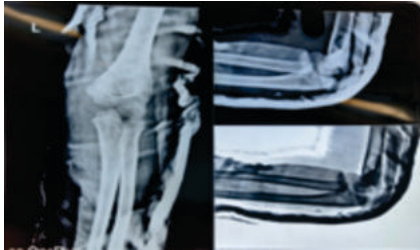


Fig-2 Digital radiograph antero-posterior and lateral view elbow joint post-reduction.

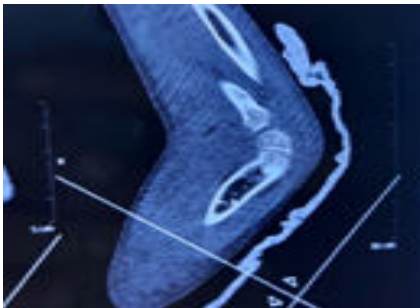


Fig-4 Post-reduction CT-scan showing congruent elbow joint.

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