

Case Report

Neglected Elbow Dislocation treated with Hinged External Fixator-A Case Report.

Rammanohar Surepally¹, Prabhu Ethiraj^{2*}, Arun H S³

1. Junior Resident, Department of Orthopaedics, Sri Devaraj Urs Medical College, Sri Devaraj Urs Academy of Higher Education and Research, Tamaka, Kolar.
2. Professor, Department of Orthopaedics, Sri Devaraj Urs Medical College, Sri Devaraj Urs Academy of Higher Education and Research, Tamaka, Kolar.
3. Professor & HOD, Department of Orthopaedics, Sri Devaraj Urs Medical College, Sri Devaraj Urs Academy of Higher Education and Research, Tamaka, Kolar.

Abstract

Elbow dislocations are treated in emergency. Neglected elbow posterior dislocations are very rarely seen and the treatment for neglected cases is more complicated than acute cases. We present a case of Neglected posterior dislocation of the elbow treated with open reduction and hinged external fixator.

23-year-old male patient presented with neglected poste-rrior dislocation of left elbow without neurological deficit following fall from height. Patient was initially treated by an osteopath for two months and came to our hospital. Patient underwent open reduction of left elbow and hinged external fixator application under general anaesthesia. Post-operative rehabilitation was started after 6 weeks and after 3 months of surgery patient attained full range of movements in left elbow without any residual instability.

The treatment for neglected elbow dislocation is quite challenging. Open reduction and hinged external fixation have satisfactory results with the possibility of early rehabilitation. This method can be considered as an option for such cases.

Keywords: Elbow joint, Posterior dislocation, Hinged external fixator.

Introduction

Elbow dislocation is one of the common orthopaedic injury with an incidence of 20% of all articular dislocations.¹ After the shoulder, elbow is the 2nd most frequently dislocated joint in adults.² Neglected elbow dislocation is defined as dislocation which is unreduced for more than three weeks.³ In developing countries, elbow dislocation with late presentation is a quite common and most patients initially go to local bonesetters for massage and

manipulation, which only aggravates the problem.⁴ In neglected elbow dislocation, elbows are fixed in either extension or flexion with only a few degrees of flexion, supination, and pronation, and have a Non-functional range of movement for activities of daily living.⁵ A hinged external elbow fixator provides enough stability to start early mobilization after open reduction and prevents residual instability and stiffness.⁶ Various studies showed promising functional results following treatment with a hinged elbow fixator.⁷ We have reported a case of 2 months old posterior dislocation of elbow joint without any neurological deficit in 23-year old male patient treated with open reduction and hinged external fixator.

Case History

A 23 years male patient presented with chief complaints of swelling and pain with deformity in left elbow joint and inability to move the left elbow joint and without neurovascular deficit. Patient had a

*Corresponding Author

Dr. Prabhu Ethiraj

Professor, Department of Orthopaedics,
Sri Devaraj Urs Medical College, Sri Devaraj Urs
Academy of Higher Education and Research,
Tamaka, Kolar-563101.

Mobile No: : 9886469972

E-mail: prabhu.thepreacher@gmail.com

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history of fall two months back and sustained injury to left elbow following that patient treated by local bone setter with massage and manipulation. The patient did not take medical treatment for the same. Radiological examination (Figure:1) confirmed posterior type of dislocation of elbow joint without any fracture with soft tissue calcification.

Clinical Examination of Left Elbow:

Inspection: Patient presented with attitude of partial flexion of elbow joint and supination in forearm. Diffuse swelling around the elbow joint was noted with fullness in cubital fossa and para olecranon fossa. No secondary skin changes around the elbow joint.

Palpation: There was no local rise of temperature, diffuse tenderness around the elbow joint present. Broadening of the elbow joint was noted along with disruption of three-point bony relationship.

Range of movements: Fixed flexion deformity of 30 degrees and further active flexion till 70 degrees was possible which was terminally painful. Pronation and supination movements were restricted in forearm. There were no distal neurological deficits.

Investigations: Plain radiograph of the left elbow anterior posterior view and lateral views. Radiograph showed posterior dislocation of left elbow with calcification of soft tissue.

Figure 1: Pre-operative radiograph (A& B)

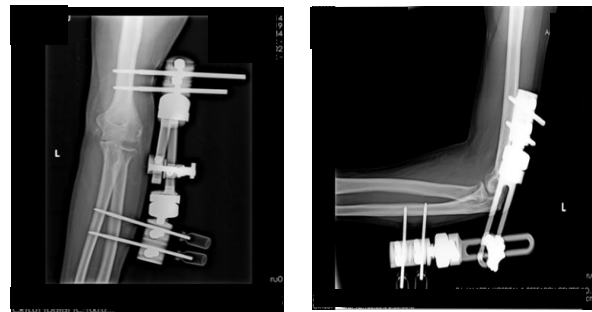


A) Left elbow anterior posterior view. B) left elbow lateral view.

Treatment: Patient underwent open reduction of left elbow with hinged external fixator application under general anesthesia.

Postoperative: Patient upper limb was immobilized with hinged external fixator for 6 weeks. After 6 weeks guarded range of movement exercises started and patient underdone physiotherapy for 4 weeks.

Figure 2: Post-operative radiograph (A&B).



A) Left elbow anterior posterior view. B) left elbow lateral view.

Follow Up

Patient was followed up every month and at the end of 3rd month, patient attained stable elbow joint with functional range of motion.

Figure 3: Follow up Images (A,B&C)



A) 1st month post operatively. B) 2nd month post operatively.



C) 3rd month postoperatively.

Discussion

In present days it is very easy to reach health services therefore the neglected elbow dislocation

cases are seen very rarely. The treatment for acute elbow dislocation is immediate reduction and cast immobilization. However, in neglected cases especially after three weeks the risk of fractures, chondral damage and local osteoporosis increased with closed reduction.⁸ Many treatment methods have been described, closed reduction, open reduction and internal fixation with K-wire, open reduction with triceps lengthening, medial and lateral collateral ligament release, creation of an intra-articular "cruciate" ligament to stabilize the joint, hinged external fixator, excisional arthroplasty, arthrodesis, and total elbow arthroplasty.³ Though total elbow arthroplasty may provide a better range of movement, it has a limited life span and is cost-prohibitive, in countries where facilities and cost are the main constraints. Hinged external fixator is an excellent tool for treating neglected elbow dislocation with very favourable outcomes.⁹ In our study, open reduction and hinged external fixator achieved a fair Outcome and provides enough stability and to start early mobilization with a useful range of movement in a neglected elbow dislocation.

Conclusion

The acute elbow dislocations have a standard treatment whereas the management of neglected cases is quite challenging. With the experience of this case we conclude that open reduction and hinged external fixation showed satisfactory results in management of neglected cases of elbow dislocation with early rehabilitation and attaining good range of motion. So, it can be considered as an option for such cases.

References

1. Jupiter JB. Trauma to the adult elbow fractures of the distal humerus. In: Browner BD, Levine AM, Trafton PG, eds. *Skeletal Trauma*. Philadelphia: Saunders, 1992; 2 :1141.
2. King GJW. The complex dislocations of the elbow. In: Celli A, Celli L, Morrey BF, eds. *Treatment of Elbow Lesions*. Milan: Springer 2007; 103-12.
3. Freeman III BL. Old unreduced dislocations. In: Crenshaw AH, ed. *Campbell's Operative Orthopedics*, 9th edn. St. Louis: Mosby, 1998; 2673-674.
4. Mehta S, Sud A, Tiwari A, Kapoor SK. Open Reduction for Late-Presenting Posterior Dislocation of the Elbow. *J Orthop Surg (Hong Kong)* 2007; 15 (1):15-21.
5. Morrey BF, Askew LJ, Chao EY. A biomechanical study of normal functional elbow motion. *J Bone Joint Surg Am* 1981; 63(6):872-77.
6. Stavlas P, Gliatis J, Polyzois V, Polyzois D. Unilateral hinged external fixator of the elbow in complex elbow injuries. *Injury* 2004;35(11):1158-1166.
7. Kolb W, Guhlmann H, Windisch C, Marx F, Markgraf E, Koller H et al. Complex osteoligamentary injuries of the elbow. Treatment with a hinged external fixator. *Der Unfallchirurg* 2008; 111(8):584-6, 588-91.
8. *Campbell's Operative Orthopaedics Eleventh Edition*. Mosby Elsevier, 2008. P. 3408-409.
9. Rockwood CA. Treatment of old unreduced posterior dislocation of elbow. *Rockwood and Green's Fracture in Adults*, 4th edn. Philadelphia: Lippincott-Raven, 1996; 975-76.