

Treatment of Old Unreduced Posterior Dislocation of Elbow

* Chowdhury AM,¹ Hossain MA,² Rahman MM,³ Ahsan K⁴

Clinical details, operative procedures and results obtained of 15 old unreduced posterior dislocations of elbow joints are presented. Of which 10 cases were pre-operatively treated by traditional bone setter, 5 cases have not seek any immediate medical treatment. At post-operative follow up we have found 4 cases with good result, 7 cases with fair and 4 cases with poor result as per criteria set up by Krishnamoorthy et al. But all cases have regain their range of motion in comparison to preoperative range of motion

[Dinajpur Med Col J 2009 Jul; 2 (2):44-47]

Key words: Treatment, dislocation, elbow

Introduction

Old unreduced dislocation is a common problem in Bangladesh. Most patients seek treatment by a traditional bone setter immediately after injury and patients with unreduced dislocation of elbow come late to Orthopaedic surgeon. The management of late cases of unreduced dislocation is a challenging problem for the orthopaedic surgeon.¹ Different views have been expressed about the role of open reduction. Wilson emphasized the poor result of open reduction and advocated arthodesis particularly for labourers and arthroplasty for normal individuals.² But more recent papers supports open reduction as a worth while procedure irrespective of age, and duration of dislocation.^{2,3,5} Speed in 1925 introduced Triceps lengthening by V-Y musculo-plasty for late open reduction where contracted Triceps hinders reduction. This technique has

been adopted by many authors.^{2,4,6,12} In this study we have presented the result of our open reduction using V-Y musculoplasty introduced by Speed. The aim of the study was to see the outcome of open reduction of old unreduced dislocation using V-Y procedure

Methods

This prospective study was conducted from July 2005 to October 2007 in Orthopaedic Department of Dinajpur Medical College Hospital and in private clinics of Dinajpur. A total of 20 dislocations of elbows were taken for study. Twelve cases were from hospitals and 8 were from clinics. Dislocations associated with fracture were excluded from the study. Five cases were missed from follow up after 2 months of surgery. The study review the result of 15 cases, duration of follow up was 3-5 months.

-
1. *Dr. Md Abdul Mannan Chowdhury, Associate(cc), Department of Orthopedics, Dinajpur Medical College, Dinajpur, Bangladesh
 2. Dr. Mohammed Awlad Hossain, Assistant Registrar, Department of Orthopedics, Dinajpur Medical College, Dinajpur, Bangladesh
 3. Dr. Md. Masudur Rahman, Assistant Registrar, Department of Orthopedics, Dinajpur Medical College, Dinajpur, Bangladesh
 4. Dr. Kamrul Ahsan, Assistant Professor, Department of Orthopedics, Dinajpur Medical College, Dinajpur, Bangladesh

*For correspondence

All the dislocations were unilateral, 10 cases with right, and 5 with left elbow. Male and female ratio was 1.4:1. Age of the patients ranged from 15 years to 40 years. All most in all cases the mechanism of injury was fall on to a out stretched hand. Deformity and restriction of movement were the presenting complains. Radiologic features were those of posterior or posterolateral dislocation of elbow. Duration of dislocation was from 6-12 weeks and there was no preoperative neuro-vascular complication.

Through a posterolateral incision Triceps apponeurosis was raised as a distally based flap, then Triceps muscle freed subperiosteally and the dislocated elbow was exposed, In all cases Olecranon and coronoid fosa were filled up with soft tissue, After excision of all soft tissue, the medial and lateral ligaments of the joint were divided before reduction. Reduction was easily done but the joint was unstable. K-wire fixation was done between olecranon and humerus keeping the elbow at 60-80 degree flexion. Periosteums with Triceps were sutured over posterior aspect of humerus with V-Y strip of the triceps apponeurosis to overcome the shortening. Tourniquet was released before closure & haemostasis was done. Closed drain was given in all cases. After 3 weeks both K were and cast removed, Collar and cuff sling applied for another 3 weeks. Active mobilization of the elbow was encouraged after 4-5 days of removal of K-wire with toleration of pain. We used broad spectrum antibiotics one dose preoperatively and two weeks post operatively to prevent infection.

At follow up post operative range of motion was measured and the clinical result were graded according to Krishnamoorthy et al (Table I)

Results

Clinical details of the patients are shown in the table II. Results of treatment of untreated dislocations of elbow are shown in the figure 1. There were two cases with post operative infection ended with poor result. Post operative neuropraxia was noted in 3 cases which recovered within 6-10 weeks.

Discussion

The majority of the dislocation of the elbow joint in our series were initially treated by traditional bone setter. This is not very much uncommon in other developing countries.^{4,5,7,12} In most cases duration of dislocation was less than 12 weeks. The range of motion achieved after open reduction is much better than pre operative range of motion.

We have performed V-Y musculoplasty introduced by Speed in 1925. It has been widely used by many researcher mainly it makes the exposure easier^{1,2,4,6}. In this procedure the reduction is easy but joint becomes unstable, requires post operative K-wire fixation and plaster immobilization for three weeks. We belief with others that Triceps plasty should only be performed in cases where contracted Triceps muscle makes reduction impossible.

Accurate reduction, maintenance of reduction in post operative period, and post operative therapeutic exercise are the key to success. Balchandani in his series of open reduction commented that post operative therapeutic exercise is essential for good result.⁸ We could not provide adequate therapeutic exercise due to lack of facilities. This may explain less satisfactory result in comparison to result obtained by others.^{1,8} There was post operative flexion contracture in all cases up to 30° – 60°. We are satisfied with this, because active range of movement has improved and lay within functional range of movement 30°

-130° as described by Morery et al.⁹ This range of movement is adequate for patients who are not heavy worker.⁹ Stewart felt that restoration of function bears a relationship to the length of time between original injury and operation, but we could not find out this relationship in our cases. Our study is a smaller one and is of short duration and could

not provide adequate physiotherapy. Considering all above we can conclude that open reduction of an old unreduced dislocated elbow is a worth while procedure. There may be limitation of range of movement but a useful functional range of movement can be achieved by open reduction and post operative physiotherapy.

Table I: Grading of results after open reduction of elbow (after Krishnamoorthy et al)

Grade	Description
Good	Arc of motion >90° Flexion contracture 30° or less, painless and stable joint
Fair	Arc of motion >60° Flexion contracture upto 30°-60° or less, painless and stable joint
Poor	Arc of motion less than 60° Flexion contracture more than 60° pain and unstable joints

Table II: Clinical detail of the patients

Sl. No.	Sex	Age (Years)	Duration (Weeks)	Preoperative ROM	Postoperative ROM	Remarks
1	M	20	06	Fixed at 20°	40°- 110° Arc-70°	Fair
2	F	35	10	Fixed at 10°	60°- 110° Arc- 50°	Poor
3	M	15	06	ROM 10° - 20° Arc -10°	30 - 130 Arc-100°	Good
4	M	22	08	ROM 20° - 30° Arc-10°	50° - 120° Arc-70°	Fair
5	F	18	06	Fixed at 20°	30 - 120 Arc 90	Good
6	M	30	08	ROM 40° -50° Arc 10°	ROM 70 - 120 Arc-50°	Poor
7	F	35	12	Fixed at 20°	50 - 120 Arc-70°	Fair
8	F	38	06	ROM 40° -60° Arc 20°	50 - 130 Arc-80°	Fair
9	M	40	10	ROM 30° -50° Arc 20°	40 - 110 Arc-70°	Fair
10	F	16	06	Flexion at 45°	30 - 120 Arc-90°	Good
11	M	30	12	ROM 20° - 30° Arc-10°	70 - 110 Arc-40°	poor
12	F	20	10	ROM fixed at 30°	60 - 130 Arc-70°	Fair
13	M	20	08	ROM 30° - 40° Arc-10°	20 - 120 Arc-100°	Good
14	F	40	08	Fixed at 30°	50 - 120 Arc-70°	Fair
15	M	28	06	ROM 30° - 40° Arc-10°	70 - 110 Arc-40°	Poor

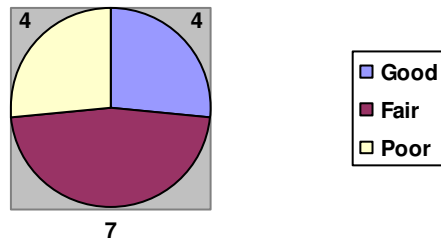


Figure 1. Results of treatment of 15 cases of unreduced dislocation of elbow

References

1. Mahaisavariya B et al, Late reduction of Dislocated elbow. J Bone Joint Surgery [Br]1993;75B:426 –28
2. Billet DM. Unreduced post dislocation of elbow: J Trauma1979;19:186-8
3. Wilson JN ed Watson Jone, Fracture and Joint Injuries, 5th edition vol-2 Edinburgh etc: Churchill Living stone ;176:434.
4. Naido KS,. Unreduced post dislocation of elbow. J Bone Joint Surgery [Br]1982;64B:603 – 6
5. Krishnamoorthy S, Bose K, et al. Treatment of old unreduced Dislocation of elbow, Injury 1976; 39–42
6. Fowles JV, Kassab MT, Douik M. Untreated posterior dislocation of elbow in children, J. Bone Joint Surgery [Am]1984;66A:921 - 6
7. Vangorder G W. Surgical approach in old post. dislocation of elbow J. Bone Joint Surgery1932;14:127
8. Balchandani RH, Unreduced dislocation of elbow(abstract) JBJS 1969 51B 781
9. Morrey BF et al, A biomechanical study of normal functional elbow motion. J. Bone Joint Surgery [Am]1981;63A:872 - 7
10. Speed JS, An operation for unreduced post dislocation of elbow, Southern Med. Journal 1925; 18:193.
11. Edmonson AS [ed], Campbell's operative Orthopaedics,6th edition. Vol I louis Mosby;1980:459
12. Laupattarakasem W et al. Old elbow dislocation: Joint mobility after open reduction. J Med. Assoc.Thai,1988;7:289 –93
13. Silva JF. Old dislocation of the elbow. Amn R coll surgery England; 1952;22:363 - 81