

Comparative Study between Kocher's Method and External Rotation Method in Acute Anterior Dislocations and Fracture-dislocations of Shoulder

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Abstract

Background: Traditional technique-like Kocher's method to reduce dislocation of the shoulder is painful to patient and associated with complications.

Aim: Aim of the present study is to compare external rotation reduction method with Kocher's method in anterior dislocation shoulder.

Materials and Methods: A total sample 22 patients of anterior dislocations of the shoulder were treated in emergency department. Among 22 patients, on 12 patients Kocher's method was tried. In 10 patients, external rotation method tried.

Results: Out of 12 patients in Kocher's method, 9 patients were reduced under short general anesthesia (GA) and 3 patients were reduced in casualty without anesthesia. However, in external rotation method, 8 patients were reduced without anesthesia and 2 patients were reduced under short GA.

Conclusion: External rotation method is a safe and reliable method in acute dislocations of the shoulder that can be performed painlessly.

Key words: Dislocation, Rotation, Shoulder

INTRODUCTION

Traditional technique-like Kocher's method to reduce dislocation of the shoulder is painful to patient and associated with complications.¹⁻³

The new technique is a relatively safe and reliable. The aim of this study to compare pros and cons of new external rotation reduction method with old Kocher's method in acute anterior dislocations and fracture-dislocations.⁴⁻⁹

MATERIALS AND METHODS

This study was conducted in the emergency department of the hospital during 24 months from September 2013

to September 2015, Kocher's method tried in 12 patients and external rotation method in 10 patients.

Inclusion Criteria

Acute anterior dislocations and greater tuberosity fracture-dislocations of shoulder.

Exclusion Criteria

Polytrauma, hemodynamic instability, three- and four-part proximal humerus fractures, and glenoid fracture-dislocations. Delayed dislocation more than 24 h were excluded from the study.

History of patients was recorded. Previous attempts of reduction were noted. Comorbid data recorded. Written informed consent obtained. Preanesthetic evaluation was done in every patient. Method of reduction was planned, and short GA was needed if there was any difficulty in reduction in both methods.

Pain tolerance was recorded, and complications such as axillary nerve, vascular injury, and iatrogenic fracture were noted.

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Table 1: Patients details using Kocher's method or external rotation method

Name	Age/sex	Diagnosis	Anesthesia	Method	Admission date
Pankajam	76/F	Anterior Dislocation With#	No	Kocher's	17/9/13
Subburam	49/M	Anterior Dislocation	GA	Kocher's	20/9/13
Anwartheen	25/M	Anterior Dislocation	GA	Kocher's	31/3/14
Indhrani	65/F	Anterior Dislocation With#	GA	ER	18/4/13
Karuvammal	40/F	Anterior Dislocation	No	ER	14/5/14
Senthilkumar	20/M	Anterior Dislocation	No	ER	29/5/14
Manikalai	32/M	Anterior Dislocation	GA	Kocher's	12/6/14
Kaliappan	36/M	Anterior Dislocation	No	ER	19/7/14
Pradeep	29/M	Anterior Dislocation	No	ER	28/7/14
Sundarapandi	23/M	Anterior Dislocation	GA	Kocher's	14/8/14
Subramani	66/M	Anterior Dislocation With#	No	ER	22/9/14
Perisamy	31/M	Anterior Dislocation	No	ER	28/9/14
Saraswathy	45/F	Anterior Dislocation	No	Kocher's	31/10/14
Sreenivasan	46/M	Anterior Dislocation	GA	Kocher's	13/11/14
Suresh	21/M	Anterior Dislocation With#	GA	Kocher's	30/11/14
Tamilselvam	23/M	Anterior Dislocation	No	ER	22/12/14
Karnan	40/M	Anterior Dislocation With#	No	ER	12/1/15
Sankaran	46/M	Anterior Dislocation	GA	Kocher's	28/1/15
Subramani	57/M	Anterior Dislocation	GA	ER	20/2/15
Chitra	34/F	Anterior Dislocation	GA	Kocher's	12/3/15
Mohammed	54/M	Anterior Dislocation With#	GA	Kocher's	24/5/15
Marimuthu	38/M	Anterior Dislocation	GA	Kocher's	22/6/15

GA: General anesthesia

Technique

The diagnosis was confirmed by clinical examination and radiographic evaluation.

External Rotation Method

In supine patient, without any traction, the elbow was flexed 90° and arm was abducted to side of the chest. With shoulder in 10-20° forward flexion with grasped wrist, the shoulder was rotated externally until forearm in coronal plane.

Minimal force was given. Patients were given injection diclofenac 3 cc intramuscularly. Once reduced the arm rotated internally and kept across the chest.

Kocher's Method

In supine patients, the arm was abducted and externally rotated. Traction was given. Once reduced arm was rotated internally and kept across the shoulder.

If reduction was difficult, short GA was administered in both methods.

Reduction was checked in post-reduction X-ray. Patients were immobilized in arm sling.¹⁰⁻¹¹

RESULTS

About 22 patients were treated in period of 24 months from September 2013 to September 2015 in the emergency department.

Among 22, 12 patients were reduced using Kocher's method, and 10 patients were reduced using external rotation method (Table 1).

Among 22 patients, 18 patients were male and 4 patients were female.

The case sheets of 22 patients who were treated with either of these two methods in the period between September 2013 and September 2015 were evaluated. The mechanism of injury was a simple fall, a fall from height, and road traffic accident. There were 18 male and 4 female patients. The mean age was 40 years (range, 20-60 years). 12 right shoulders and 10 left shoulders were involved. Among 22, in 20 patients, this was first dislocation of affected shoulder. Greater tuberosity fracture was associated with dislocation in 6 patients.

Closed reduction was achieved with the use of Kocher's method in 12 patients (10 male + 2 female), and external rotation method in 10 patients (8 male + 2 female).

In Kocher's method, 9 among 12 dislocations were reduced under short GA.

In external rotation method, 2 among 10 patients needed anesthesia for reduction. Totally, 5 patients had moderate pain.

Two patients had a history of recurrent dislocation of the shoulder which was reduced using Kocher's method. The mean duration of hospitalization of 22 patients was

2 days. No short-term complications were noted in this study.

DISCUSSION

This study demonstrated the advantage of external rotation method of reduction in acute shoulder dislocation. This is reliable and safe while causing minimum patient discomfort and not requiring anesthesia in most of the patients. In Kocher's method, the used traction increased muscle spasm and made reduction difficult without anesthesia.

So, this external rotation method is a rational, simple, and relatively pain-free method to reduce an anterior dislocation of the shoulder when compared to Kocher's method.¹²⁻¹⁶

CONCLUSION

External rotation method is a safe and reliable method in acute dislocations of the shoulder that can be performed painlessly.

REFERENCES

1. Beattie TF, Steedman DJ, McGowan A, Robertson CE. A comparison of the Milch and Kocher techniques for acute anterior dislocation of the shoulder. *Injury* 1986;17:349-52.
2. Janecki CJ, Shahcheragh GH. The forward elevation maneuver for reduction of anterior dislocations of the shoulder. *Clin Orthop Relat Res* 1982;164:177-80.
3. Manes HR. A new method of shoulder reduction in the elderly. *Clin Orthop Relat Res* 1980;147:200-2.
4. Plummer D, Clinton J. The external rotation method for reduction of acute anterior shoulder dislocation. *Emerg Med Clin North Am* 1989;7:165-75.
5. Mirick MJ, Clinton JE, Ruiz E. External rotation method of shoulder dislocation reduction. *JACEP* 1979;8:528-31.
6. Neer CS 2nd. Displaced proximal humeral fractures: PART I. Classification and evaluation. *J Bone Joint Surg Am* 1970;52:1077-89.
7. Ideberg R. Fractures of the scapula involving the Glenoid fossa. In: Bateman JE, Walsh RP, editors. *Surgery of the Shoulder*. Philadelphia, PA: BC Decker; 1984. p. 63-6.
8. Matsen FA, Thomas SC, Rockwood CA, Wirth MA. Glenohumeral instability. In: Rockwood CA, Matsen FA, editors. *The Shoulder*. 2nd ed., Vol. 2. Philadelphia, PA: WB Saunders; 1998. p. 611-54.
9. Poulsen SR. Reduction of acute shoulder dislocations using the Eskimo technique: A study of 23 consecutive cases. *J Trauma* 1988;28:1382-3.
10. Kocher T. Kocher's method in shoulder dislocation. *Berlin Klinewelsch* 1870;7:101-5.
11. Leidelmeyer R. Reduced! A shoulder, subtly and painlessly. *Emerg Med* 1977;9:233-4.
12. Zahiri CA, Zahiri H, Tehrany F. Anterior shoulder dislocation reduction technique – Revisited. *Orthopedics* 1997;20:515-21.
13. Uglow MG. Kocher's painless reduction of anterior dislocation of the shoulder: A prospective randomised trial. *Injury* 1998;29:135-7.
14. Canales Cortés V, García-Dihinx Checa L, Rodríguez Vela J. Reduction of acute anterior dislocations of the shoulder without anaesthesia in the position of maximum muscular relaxation. *Int Orthop* 1989;13:259-62.
15. Garnavos C. Technical note: Modifications and improvements of the Milch technique for the reduction of anterior dislocation of the shoulder without premedication. *J Trauma* 1992;32:801-3.
16. Ceroni D, Sadri H, Leuenberger A. Radiographic evaluation of anterior dislocation of the shoulder. *Acta Radiol* 2000;41:658-61.

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