

Shoulder Dislocation Reduction by the Novel Prakash's Method

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Shoulder; Ligament; Prakash's Method; Relocation

1. Abstract

1.1. Objectives: The aim of this study is to evaluate the effectiveness of Prakash's Method of relocation for dislocated shoulder.

1.2. Study Design: Descriptive Study.

1.3. Setting: Sports units of Hayatabad Medical Complex, Peshawar.

1.4. Method: 30 patients (30 Shoulders) were recruited for study, all patients with signs symptoms of shoulder dislocation by clinical examination were subjected to anterior/posterior shoulder radiograph. And those diagnosed with anterior shoulder dislocations were initially enrolled in the study. Reduction was performed using Prakash's method

1.5. Results: Prakash's method had success rate of 90.0% (n=27). In 10.0% (n=3) the reductions who failed were then reduced under anesthesia using the Hippocratic method. 50.0% (n=15) patients has mild pain, 36.7% (n=11) has moderate pain, and 13.3% (n=4) has severe pain during the procedure. All patients having mild and moderate pain were reduced successfully in the first attempt. 4 patients who has severe pain out of which 1 patient was reduced successfully and 3 patients were reduced by the Hippocratic method using anesthesia. The reduction time was ranging from 180-300 seconds with a mean of 216±85 seconds. no complication occurred during the procedure.

1.6. Conclusion: Prakash Method of shoulder relocation for acutely dislocated shoulder is an effective method.

2. Introduction

Approximately 50-60% of dislocations of large joints involve the shoulder (glenohumeral) joint. Up to 90-96% of shoulder dislocations are anteroinferior [1, 2, 12, 17]. They cause pain, are often severe and require timely interventions to minimize discomfort and tissue damage³. Failure to reduce a dislocated shoulder successfully within the first 24 hours carries the risk that it will be impossible to achieve a stable closed reduction [4]. Because relaxation is a key factor for successful reduction, all dislocated joints should ideally be reduced under general anesthesia with adequate analgesia and muscle relaxation [11]. In practice, most departments attempt initial reduction in the emergency room without sedation [5, 14]. A variety of techniques to reduce shoulder dislocation has been described [7, 8, 15]. The key to a successful relocation is a thorough understanding of the anatomy of both the allocated and the dislocated shoulder joint [6]. Commonly used reposition or relocation techniques often involve traction and/or leverage. These techniques have high success rates but may be painful and time-consuming. They may also cause complications [2, 3, 16]. Ideal reduction methods should be quick, effective, and as painless as possible for patients; and they should not cause iatrogenic complication [9, 11, 13].

The Prakash new method of reducing anterior shoulder dislocation which requires minimum assistance, has a high success rate, requires no anesthesia, and is not time-consuming, has less pain, is safe, or has minimal complications [9, 10]. Accordingly, this

study aims to evaluate reduction success, pain intensity while reducing shoulder, the timing of the procedure, and complications of the maneuver while reducing shoulder dislocation by Prakash's method.

3. Method

This descriptive study was carried out at Rahman medical and surgical center district Buner from June 2017 to December 2019. All patients with signs symptoms of shoulder dislocation by clinical examination were subjected to anterior/ posterior shoulder radiograph. And those diagnosed with anterior shoulder dislocations were initially enrolled in the study. The demographic data including age, gender, history of previous dislocation, time since dislocation, and associated fracture were noted in the patient's case sheet. All those patients with a history of previous dislocation, polytrauma, unconscious patients, those presenting more than a week after dislocation, fracture dislocations of the shoulder were excluded from the study. After explaining the procedure consent was taken from all patients. The patients were counselled about the procedure and the visual analogue scale for pain documentation. A total of 36 patients were initially enrolled in the study 6 patients were excluded from the study not meeting the inclusion criteria. No anesthesia or sedation was given to the patients. After the procedure reduction success, pain during the procedure, time taken by the procedure, and complications were noted on the patient case sheet. Pain was recorded by a 10 points visual analogue scale (Table 1) The results were analyzed in terms of reduction success, pain during the procedure, and time taken by the procedure. A single attempt was allowed if more than one attempt or anesthesia was needed that was considered as treatment failure. The results were analyzed using SPSS version 20.

Table 1: Visual analogue scale.

SCALE	PAIN INTENSITY
0	NO PAIN
1-3	MILD PAIN
4-6	MODERATE PAIN
7-10	SEVERVE PAIN

4. Reduction Technique

The patients are made to sit on a chair with the back supported to fix the scapula against the chair. The surgeon holds the patient's wrist with one hand and elbow with the other. Gradual external rotation of the shoulder is done in the position of deformity until its parallel to the coronal plane without any abduction or adduction of the shoulder. The external rotation force is maintained for more than a minute and try to engage the patient in some talk to reduce apprehension. While sustaining external rotation the arm is gradually adducted until the elbow comes over the body then internally rotate the arm so that the hand touches the opposite shoulder. The shoulder reduces without any clunk or sound.

5. Results

This study was performed based on the data of 30 patients. The mean age of the patients was 36.46 ± 11.58 years. Among them, 83.3% (n=25) were male and 16.7% (n = 5) were female. While dislocation occurred on the right shoulder in 63.3% (n=19) and in 36.7% (n=11) on the left side. All the patients have dislocation for the first time. Those patients who had a fracture, polytrauma, or unconsciousness for more than 1 week were excluded from the study. Reduction was performed using Prakash's method. the success rate was 90.0% (n=27). In 10.0% (n=3) the reductions who failed were then reduced under anesthesia using the Hippocratic method. 50.0% (n=15) patients has mild pain, 36.7% (n=11) has moderate pain, and 13.3% (n=4) has severe pain during the procedure. All patients having mild and moderate pain were reduced successfully in the first attempt. 4 patients who has severe pain out of which 1 patient was reduced successfully and 3 patients were reduced by the Hippocratic method using anesthesia. The reduction time was ranging from 180-300 seconds with a mean of 216 ± 85 seconds. no complication occurred during the procedure (Table 2).

Table 2: Demographic, and reduction-related data.

Age (years)	Mean \pm SS	36.46 \pm 11.58
Gender	N (%)	
Male		25 (83.3)
Female		5 (16.7)
Lesion side	N (%)	
Right		19 (63.3)
Left		11 (36.7)
Reduction success rate	N (%)	27 (90.0)
Reduction failure rate	N (%)	3 (10.0)
Pain intensity	N (%)	
Mild		15 (50.0)
Moderate		11 (36.7)
Severe		4 (13.3)
Reduction time (seconds)	Mean \pm SS	216 \pm 85

6. Discussion

Glen humeral dislocations commonly present to the Emergency Department (ED) and are generally due to sports-related trauma, falls, motor vehicle accidents, and, rarely, seizures [18]. The commonly used anterior glen humeral dislocation repositioning techniques using traction and/ or leverage inflict pain, are time-consuming, and are not always effective [3]. Many methods have been advocated for reduction with varying success rates and complications. In general, success rates of about 70-90% have been reported regardless of the technique. Some dislocations may require the use of more than one method. Uncooperative patients and first-time dislocates can make closed reduction quite difficult [5]. The

choice of reduction maneuver depends upon the surgeon or treating physicians and the environment or place of work. However, in general, a relatively painless maneuver does not require sedation or anesthesia, without the need of an assistant, with no or minimal complications that can be easily reproducible is preferred [11]. In 2016 Prakash's method of shoulder dislocation was introduced for the reduction of ant shoulder dislocation and later published in 2018 [10]. because of its high success rate, minimal complication, no assistant requirements, no anesthesia requirements, minimal pain during the procedure, and minimal time requirements, different researchers have worked on it with different success rates.

In 2018 of original Prakash's study, who managed 147 patients with anterior shoulder dislocation. He mentioned that out of 147 patients there was no pain in 116 patients, 30 patients had mild to moderate pain while one patient has severe pain during the procedure. The reason that majority of patients has no pain during the procedure was that all the patients were prisoners with a high threshold for pain. The reduction was successful in all patients without any complications [10]. In 2019 a study by R. Anjum et al. using Prakash's maneuver of shoulder dislocation for ant shoulder dislocation reported a success rate of 95.08% the study was done on 61 patients out of which 58 patients were reduced with the first attempt having a success rate of 95.08%. the remaining 3 patients were relocated by the same maneuver in the second attempt. Pain

scoring during the procedure was that 60 patients has mild to moderate pain while one patient has severe pain. Pain scoring was done using the visual analogue scale system for pain scoring. The reduction time was ranging from 90 seconds to 200 seconds with a mean of 130.5 ± 25.8 seconds. They reported no complications related to the procedure [11]. T. kuru et al. in 2020 using Prakash's method of shoulder dislocation reduced 18 shoulders out of 19 with a success rate of 94.7% without any complication. only one patient was then reduced using the Hippocratic method. The mean reduction time was 243 ± 38 seconds. In our study, we included 30 patients with shoulder dislocation using Prakash's method. Out of which 27 patients were reduced successfully having a success rate of 90.0% only 3 patients were unable to reduce which were reduced by the Hippocratic method leading to a failure rate of 10.0% no complication was reported related to the procedure. pain scoring during the procedure was that 15 patients has mild pain, 11 has moderate pain and 4 has severe pain. The reduction time was ranging between 180 seconds to 300 seconds with a mean of 216 ± 85 seconds. (Table 2)

The limitation of the study was the limited no of patients. Large-scale studies are required to study the various parameters of Prakash's method including success, pain intensity, reduction timing, and complication. Because of its easy use, Prakash's method is a novel method and should be adopted by all orthopedics and trauma surgeons in the ER for ant shoulder dislocation. (Table 3)

Table 3.

Authors references	Prakash et al.	R. Anjum et al.	T. kuru et al.	Present study
Year of publication	2018	2019	2020	2020
No of patients	147	61	19	30
Success rate no/%	147/100	58/95.08	18/94.7	27/90.0
Pain scoring no/%				
No pain	116/78.91	0	-	0
Mild to Mod pain	30/20.40	60/98.36	-	26/86.66
Severe pain	1/68	1/1.63	-	4/13.33
Reduction time				
Mean (seconds)	-	130.5 ± 25.8	243 ± 38	216 ± 85

Reference

1. Chung CH. Closed reduction techniques for acute anterior shoulder dislocation: from Egyptians to Australians. Hong Kong Journal of Emergency Medicine. 2004; 11: 178-88.
2. Marinelli M, de Palma L. The external rotation method for reduction of acute anterior shoulder dislocations. Journal of Orthopaedics and Traumatology. 2009; 10: 17-20.
3. Baden DN, Roetman MH, Boeije T, Roodheuvell F, Mullaart-Jansen N, Peeters S, et al., Biomechanical reposition techniques in anterior shoulder dislocation: a randomised multicentre clinical trial—the BRASD-trial protocol. BMJ Open. 2017; 7: e013676.
4. Cutts S, Premph M, Drew S. Anterior shoulder dislocation. The Annals of the Royal College of Surgeons of England. 2009; 91: 2-7.
5. Orbach H, Rozen N, Rubin G. New technique for reduction of irreducible anterior glenohumeral shoulder dislocation. Journal of International Medical Research. 2020; 48: 300060518811270.
6. Cunningham NJ. Techniques for reduction of anteroinferior shoulder dislocation. Emergency Medicine Australasia. 2005; 17: 463-71.
7. Westin CD, Gill EA, Noyes ME, Hubbard M. Anterior shoulder dislocation: a simple and rapid method for reduction. The American Journal of Sports Medicine. 1995; 23: 369-71.
8. Yuen MC, Yap PG, Chan YT, Tung WK. An easy method to reduce

- anterior shoulder dislocation: The Spaso technique. *Emergency medicine journal*. 2001; 18: 370-2.
9. Kuru T, Olcar HA, Bilge A, Nusran G, Ozkilib R, Akman C, et al., No Sedation, No Traction, and No Need for Assistance: Analysis of New Prakash's Method of Shoulder Reduction. *Emergency Medicine International*. 2020; 2020: 4379016.
 10. Prakash L. A new method for reduction of shoulder dislocations. *Ortho Surg Ortho Care Int J*. 2018; 1: 1-5.
 11. Anjum R, Pathak S, Sharma AR, Aggarwal J, Sharma A, Pruthi V, et al., Reducing shoulder dislocation without anesthesia or assistant: Validation of a new reduction manoeuvre. *Chinese Journal of Traumatology*. 2019; 22: 274-7.
 12. Theivendran K, Thakrar RR, Deshmukh SC, Dwan K. Closed reduction methods for acute anterior shoulder dislocation. *The Cochrane Database of Systematic Reviews*. 2019; 2019: CD011051.
 13. Stafylakis D, Abrassart S, Hoffmeyer P. Reducing a shoulder dislocation without sweating. The Devos technique and its results. Evaluation of a nontraumatic, safe, and simple Technique for reducing anterior shoulder dislocations. *The Journal of emergency medicine*. 2016; 50: 656-9.
 14. Adhikari S, Koirala P, Kaffle D. Comparison of scapular manipulation with external rotation method of reduction of acute anterior shoulder dislocation for sedation requirements and success rates. *Journal of Special Operations Medicine*. 2018; 18: 34-7.
 15. Akcimen M, Bedel C. Comparison between new modified external rotation method and external rotation method for reduction of ASD. *The American journal of emergency medicine*. 2020; 38: 874-78.
 16. Dala-Ali B, Penna M, McConnell J, Vanhegan I, Cobiella C. Management of acute anterior shoulder dislocation. *Br J Sports Med*. 2014; 48: 1209-15.
 17. Lo H, Shen PY, Shen PC, Chou PH, Lu CC. The elbow technique: a novel reduction technique for anterior shoulder dislocations. *The Journal of emergency medicine*. 2019; 56: 201-4.
 18. Tas M, Canbora MK, Kose O, Egerci OF, Gem M. Demographic and clinical characteristics of traumatic shoulder dislocations in an urban city of Turkey: a retrospective analysis of 208 cases. *Acta Orthop Traumatol Turc*. 2013; 47: 147-52.