

# Analysis of no Traction, No Anaesthesia L Prakash Method of Reduction in Anterior Shoulder Dislocation

Vijaysing Chandele<sup>1</sup>, Pravin Jadhav<sup>2</sup>

## ABSTRACT

**Introduction:** Glenohumeral dislocation are one of the most common joint dislocation affecting young and active patients. There are many method described by many authors in literature with many modifications. But no single method is gives 100% reduction rate and many methods are to be used for the reduction. The gold standard method should be simple, effective, with no complication, reproducible and with no use of anaesthesia. In this study we verified this new method of reduction which claimed to be the ideal method of reduction of shoulder dislocation.

**Material and Methods:** In this prospective study conducted at two tertiary care centre by two orthopaedic surgeons presented with acute shoulder dislocation. The reduction was performed by two orthopaedic surgeon in two centres using L Prakash method. For reduction no traction was without any anaesthesia. Only single attempt was done of this manoeuvre. The time taken for reduction, pain during reduction and complication if any were recorded.

**Results:** There were 50 patients including 36 (72%) males and 14(28%) females with a mean age of was  $42.7 \pm 10.5$  Years. The L Prakash method was effective in reducing anterior shoulder dislocation in 47 patients out of 50 (94%) in single attempt. No anaesthesia or traction was used. Mean reduction time was  $183 \pm 40$  seconds. No complication were recorded after this procedure.

**Conclusion:** Prakash method of shoulder dislocation reduction is simple, relatively painless and safe method of shoulder reduction with no complication.

**Keywords:** Analysis of no Traction, No Anaesthesia, L Prakash Method, Reduction in Anterior Shoulder Dislocation

## INTRODUCTION

The Glenohumeral joint is the most common major joint to dislocate at a rate of 11.2 per 100,000 per year and more than 90% of traumatic shoulder dislocations are anterior.<sup>1,2</sup> 90% of shoulder dislocation are seen in young and active patients. The distribution is bimodal and seen in second and sixth decade of life.<sup>3</sup> There are several methods of reduction of an anterior glenohumeral dislocation, including Hippocrates, Kocher, Milch and Stimpson. Several other techniques are mentioned as to provide an easier method.<sup>4,5</sup> Forcible traction or manipulation to overcome muscle spasm is unphysiological, brutal and dangerous and may results in fractures of surgical neck of humerus. The elderly osteoporotic are most vulnerable for such adverse outcome. Among the different method described the ideal method can be described that which requires minimal assistance, reproducible, highly effective, quick with minimal

discomfort to patients and no complication.<sup>6</sup>

In 2018 in paper published by L Prakash<sup>7</sup> described this method which is described as painless and effortless both for the surgeon and patients with zero failure rate. The method is essentially a modification of Kocher method.<sup>6</sup>

This study was aimed at to evaluate the effectiveness and safety of L Prakash method of anterior shoulder reduction (modified Kocher's method).

## MATERIAL AND METHODS

This prospective study was conducted at two different institute by two different orthopaedic surgeons after clearance ethics committee from January 2019 to December 2020. Patients were informed about the method and written consent was taken. Only patients willing are included in the study. Patients' age, sex, mode of injury, side of the shoulder dislocation, presence of a history of previous shoulder dislocation noted. The patients with all acute anterior shoulder dislocation cases willing patients were included in study. The diagnosis of anterior shoulder dislocation was confirmed on clinical and AP radiography. A thorough neurovascular evaluation was carried out. Also other concomitant injury were ruled out. Patients with other concomitant injuries were excluded from the study which prevent patients to allow to sit or stand as described in method. Injection Diclofenac 50 mg and injection Myoril 8 mg (Thiocolchicoside) was given 20 min prior to reduction. Only Single reduction attempt were tried. If unsuccessful traction-counter traction method was used under anaesthesia. Intraoperative VAS was used to analyse the pain. Reduction was confirmed with anteroposterior radiographs and physical examination. While the reduction is achieved with this method complications, if any, success rate, and reduction time were recorded.

## Reduction method

The principle described by author in this there is no role of traction in reduction of shoulder dislocations as there is purely rotational and lateral translation injury so managed

<sup>1</sup>Senior Resident, Department of Orthopaedics, <sup>2</sup>Assistant Professor, Department of Orthopaedics, Indira Gandhi Government Medical College & Mayo Hospital, Nagpur, Maharashtra

**Corresponding author:** Dr Pravin Jadhav, Sukhakarta G Wing Flat No 2301, Near Curry, Road Railway Station, Curry Road Mumbai 400012, India

**How to cite this article:** Chandele V, Jadhav P. Analysis of no traction, no anaesthesia L Prakash method of reduction in anterior shoulder dislocation. International Journal of Contemporary Medical Research 2021;8(4):D6-D8.

DOI: <http://dx.doi.org/10.21276/ijcmr.2021.8.4.22>



with same mechanism. The patient made to sit on chair or stand with back support to stabilize scapula. The procedure should not performed in supine or prone position as described by the author. No assistant is required.

The forearm of patient is held at elbow and wrist by the surgeon the following sequence movements are done

- A. After proper holding elbow in 90 degree flexion the affected shoulder is externally rotated until full external rotation is achieved by side of body and no attempt of adduction or abduction is done. Slow and gentle performance of this step over period of 1 min is important. (Figure 1 A)
- B. This position is kept in same position for next 2-3 minute. Patients is engaged in conversation to distract to reduce pain and apprehension. This step is critical for successful outcome (Figure 1 B)
- C. Next step is to adduct the limb in same position till the elbow comes over the body. (Figure 1 C)
- D. Then the limb is internally rotated such that finger touched the opposite shoulder. (Figure 1 D)

## RESULTS

In this prospective study 50 patients were included in the study. The mean age was  $42.7 \pm 10.5$  years. Which include 36 males (72%) and 14 female (28%). Right side dislocation was seen in 34 patients (68%) While dislocation occurred on the left shoulder in 16(32%) of the patients. 3 patients had associated greater tuberosity fracture. 41 patients (82%) presented with first time shoulder dislocation. success rate of the method was 94% (n=47). Reduction could not be

performed in 3 patients on single attempt. These patients were given short GA and traction counter traction method is used. Mean reduction time was  $183 \pm 40$  seconds. The pain experienced during the reduction manoeuvre VAS scale ranged from 0 to 5 with a mean of 2.25. No complication are recorded in all patients. No difference in success rate found between orthopaedic surgeons with difference in experience.

## DISCUSSION

Shoulder dislocation is most common joint dislocation seen emergency worldwide with more than 50% of all dislocations with anterior dislocation being the commonest. A number of reduction techniques are described with varying degree of results and reproducibility. Most of these techniques require some sort of premedication, sedation or anaesthesia.<sup>8</sup>

L praksash in his article presented a novel method of shoulder reduction claimed to be painless, quick and can be performed by single surgeon without need premedication or any anaesthesia. They published results of 147 patients with 100% success rate. The original author believed no role of traction in management of shoulder reduction as the injury mechanism is purely rotational and translational. The original author published the results of 147 shoulder dislocations reduced by this new technique, over a period of eleven years, achieving a success rate of 100%.<sup>7</sup> The exact mechanism of reduction is not fully understood. The original author believed shoulder dislocations to be rotational and translational injuries with little role of traction for reduction. Even though claimed to be novel method we found it similar to Kocher method which that can be performed



Figure-1: Sequence of movements in L Prakash method of reduction.

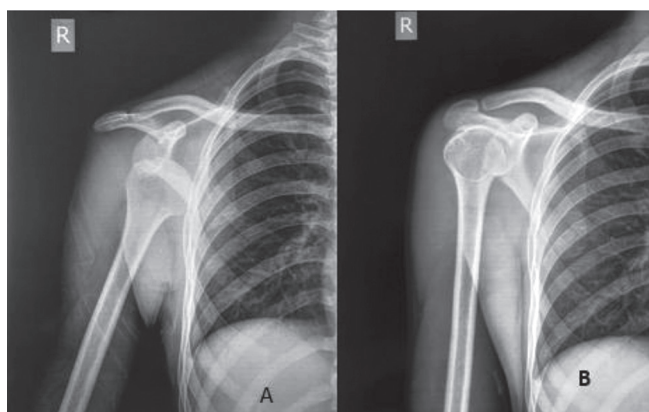


Figure-2: A. Pre reduction radiograph B. Post reduction radiograph



Figure-3: A. Pre reduction radiograph B. Post reduction radiograph

single handily without sedation or anaesthesia.<sup>6,9</sup> Similar to Kocher method external rotation, adduction and internal rotation movements are performed. The difference that can be pointed out that Prakash method give sequential step with time limit to be followed, to be done in sitting or standing position with scapular stabilization and 100% success rate. Using similar Prakash method Kuru et al<sup>10</sup> got reduction in 94.7% success rate with no complication and Rashid Anjum et al<sup>8</sup> reported 100% reduction rate but out of 61 patient's 3 required second attempt to reduce. They also did not report any intraoperative complication. There are many described methods. The success rate was ranged from 70% to 90%. Kocher and Hippocratic method were described as worst in terms of complication and also painful.<sup>11</sup> The selection of reduction should be on the basis of simplicity of method, easy reproducibility, no requirement of anaesthesia. In our study we found the L Prakash method is on single attempt give 94% success rate. It is a simple method with no anaesthesia, no traction, no assistance required and give high success rate with no complications. Even though high success rate this manoeuvre cannot be performed in polytrauma, unconscious and uncooperative patients as method is performed only in standing or sitting. The results of this method are promising though more clinical trial with large sample size and with comparing other methods should be performed. This study included acute dislocation into consideration. While the author has claimed reduction of even 89 days dislocation which should also be verified with further study.

## CONCLUSION

Prakash method of shoulder dislocation reduction is simple and less discomforting with regards to pain during manoeuvre. The method is also effective in achieving higher reduction rate. The safety of this method adds to its advantage with no complication recorded in this study also in other studies using this method. However, more study with large number of patients are required to study the results and potential drawbacks.

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**Source of Support:** Nil; **Conflict of Interest:** None

**Submitted:** 18-02-2021; **Accepted:** 15-03-2021; **Published:** 30-04-2021