Patients Education of a Self-Reduction Technique for Anterior Glenohumeral Dislocation of Shoulder

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Background: Anterior dislocation of the shoulder (glenohumeral joint) is one of the most prevalent dislocations. Following a first dislocation recurrence rates of up to 80% have been reported. Many patients will seek medical assistance for reduction of the shoulder after each of these recurrent dislocations. We describe the results of reduction of anterior glenohumeral dislocation using a modified self manipulated Milch technique that can be performed by the patients themselves after simple guidance and demonstration. This method is directed to patients who are not willing or cannot have surgical stabilization and may be in a place where medical assistance is not available.

Patients: The patient is placed in a supine position, and begins slowly to actively abduct and externally rotate the dislocated shoulder until the arm is overhead. Once the overhead position has been achieved, the arm is gently lowered back to the side of the body. Simultaneously, the patient has to apply pressure to the front of the shoulder with the other hand to maintain position until the reduction is complete.

Results: Thirty-two dislocated shoulders in 33 consecutive patients suffering from recurrent dislocations were successfully reduced by this technique. Mean reduction time was 10 minutes.

Discussion: The results illustrate the fact that most patients are able to reliably and reproducibly reduce glenohumeral dislocations by themselves. Subsequent dislocations can be reduced promptly decreasing the dislocation time thus avoiding further damage to the shoulder, achieving immediate pain relief, and removing the immediate necessity for medical attendance.

Key Words: Anterior dislocation, Shoulder, Self reduction.

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Anterior dislocation of the shoulder (glenohumeral joint) is among the most prevalent dislocations treated in the emergency room and is one of the most commonly encountered orthopaedic emergencies. Many patients suffer from instability and recurrent dislocations after the first dislocation, with a higher incidence in younger age groups. After experiencing a primary dislocation, most patients recognize the signs and symptoms of further dislocations when they occur. A number of dislocations reduce spontaneously, and some patients, especially those with hypermobility, are able to reduce the dislocation by themselves, but most patients seek immediate medical assistance for reduction.

Numerous reduction methods have been reported in the literature, many are commonly used, among them traction techniques such as the Hippocratic method, the Milch and Eskimo techniques, and levering techniques such as the Kocher maneuver. However, several common complications are associated with these techniques, including additional damage to soft and bony tissues; surgical neck fractures especially in elderly osteoporotic patients and excessive traction or manipulation may cause neurovascular insult. Most of these methods require analgesia and sedation.

Most of these reduction techniques need medical assistance and when the dislocation occurs in the absence of medical assistance, for example in rural areas, the period between the dislocation and reduction may be prolonged potentially increasing the risk of intra-articular damage and tractional neurovascular injury.

We describe the technique and results of self-reduction of dislocated shoulder, using modified Milch technique, which was taught to the patients after the previous dislocation.

PATIENTS AND METHODS

Thirty-three (20 right and 13 left) consecutive recurrent anterior glenohumeral dislocations in 33 patients (24 men and 9 women) had supervised self-reduction attempts of their shoulders (after being taught the current technique). Mean age of the patients was 32 years, range 17 to 72 years. The mean number of previous dislocations was 4.7, ranged between 2 and 10. The average time from the dislocation until reduction was 40 minutes (the dislocation time was estimated by the patients).

The diagnosis was established clinically after physical examination that confirmed no neurovascular deficiency and two routine radiograms (anterior posterior and trans scapular views).

The patient was instructed to lie in a supine position. The dislocated shoulder was slowly abducted and externally rotated by the patient until overhead position of the arm was achieved (Figs. 1–3). The patient could use the contralateral hand for support. When the overhead position was achieved, the position of the arm was such that the glenohumeral joint was reduced (Fig. 4). The arm was then, gently lowered, by the patient, back...
to the side of the body. Simultaneously, the patient was instructed to apply a posteriorly directed reducing force over the anterior humeral head by placing the contralateral hand on the front of the shoulder; this maintained the reduction while the arm was brought to its resting position at the side of the body (Figs. 5–7).

After reduction, the arm was immobilized in a collar and cuff and standard radiographs were taken to confirm position.

No sedation, anesthesia, or intra-articular injections were used.

RESULTS

Of the 33 consecutive shoulder dislocations treated, 32 joints (in 32 patients: 20 men and 9 women) were successfully reduced using this technique. In one patient, a 72-year-old woman who had experienced previous dislocations, reduction could not be achieved and she required relocation under a general anesthetic. The mean reduction time was 10 minutes, range 6 minutes to 17 minutes.

Twenty-five patients were available for telephonic questioning after a year. Twelve had been operated and underwent glenohumeral stabilization. From the 13 non-operated patients, 11 had recurrent dislocations during the year, 8 of them used the current technique of self-reduction, and 7 of them were successfully treated. Two patients used the technique successfully in situations where medical assistance was not available (one on a boat and the other during a trip).

DISCUSSION

When a patient suffers from a recurrent dislocation he or she is usually aware of the diagnosis and seek to reduce the
shoulder quickly to avoid further damage and to relieve their pain. The method described is easily taught and can be performed by the patient themselves; this has the great advantage of decreasing the period of dislocation, achieving more rapid pain relief, and reducing the risk of associated joint or neurovascular injury.

Using this technique removes the necessity for patients to seek immediate emergency medical attendance with each episode of dislocation. The procedure time for this method is comparable (mean reduction time was 10 minutes, range 6–17 minutes) with other reported methods.3,4,7,9,10 No complications were experienced in this study, which might be related to the patient controlled, atraumatic nature of the reduction technique. The results of this study, show a success rate of 97%, in the cases supervised and is comparable and in some cases superior to other reported methods.

The Milch technique was preferred because the technique does not require the use of force or manipulation, which is especially useful when the technique is to be used by the patients themselves.

Milch11 described in 1938 his reduction methods using abduction and external rotation and pushing the head to place by the physician thumb. We chose the Milch methods because its easiness for use and when done actively by the patient. The active external rotation in the scapular plane lowers the tension of the subscapularis muscle, which is the main restrictor to the reduction. Educating patients to use this atraumatic technique (modified Milch) decreases the immediate necessity for professional medical attention and makes self reduction an effective and realistic option. This procedure can significantly decrease the dislocation time, which may potentially be long, especially when the dislocation occurs in rural areas or far from the nearest professional medical attention.

Fig. 4. Overhead position (zero position). Humeral head is reduced.

Fig. 5. Humeral head supported in reduced position by the patient.

Fig. 6. Repositioning of the arm to neutral position while maintaining the humeral had in the reduced position.

Fig. 7. End position.
hospital as was the case in the two patients described in the study who had used the technique on a boat and in a trip in undeveloped country, respectively.

We have to emphasis that this self reduction technique is safe and complications were noticed, it should be used only if medical assistance is not available in reasonable time.

**SUMMARY**

Educating patients in a technique for self-reduction of anterior glenohumeral dislocation is possible and gives good results. The use of the modified Milch technique for anterior shoulder dislocation is described. This technique provides several advantages: No force is required, thus minimizing potential reduction trauma to soft tissues and bone; sedation is not required, reduction can be achieved within reasonable time, and further dislocations do not require hospital attendance allowing more efficient use of resources.

The main advantage is that once the patients are familiar with the method, they can reduce a recurrent dislocation promptly with no assistance where and whenever necessary.

**REFERENCES**