Legg Reduction Maneuver for Patients With Anterior Shoulder Dislocation

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Few manual techniques for reducing anterior shoulder dislocations are easy to perform in the clinical setting, and many of these techniques require sedation. The authors describe a technique, the Legg reduction maneuver, that is easy to perform on site and requires no premedication. Clinical experience indicates that proper use of this maneuver can successfully relocate a patient’s anterior shoulder dislocation. The relocated arm can then be placed in an immobilizer and receive further medical management as appropriate. The Legg reduction maneuver allows the physician to work with the natural tendencies of muscle groups in the patient, rather than against them. Thus, the technique can be performed without sedation. In addition, because no traction is placed on the injured shoulder, the potential for neurovascular injury is decreased.

Recognizing Anterior Shoulder Dislocation
A patient who has an anterior shoulder dislocation typically presents to the family physician with an obvious deformity. Physical examination of the patient reveals a prominent acromion process and an anteriorly displaced humeral head, resulting in a loss of the natural contour of the shoulder. There will also often be marked swelling of the shoulder, and the patient will usually complain of pain, especially associated with motion. Classically, the patient will support the injured arm with the unaffected limb, keeping the arm in external rotation and slight abduction.

The physician should conduct a neurovascular examination before and after any reduction of an anterior shoulder dislocation. If the reduction is successful, the patient should experience immediate relief of pain, and the natural contour of the shoulder should be restored. If the patient is able to place the hand of the affected limb on the opposite shoulder comfortably, it is quite likely that the reduction maneuver was effective.

Legg Reduction Maneuver
The reduction maneuver described in the present report is named for William J. Legg, DO. Dr Legg developed this technique in the mid-1980s and used it successfully to treat athletes on sports field sidelines and patients in the emergency department throughout his lengthy career as an osteopathic physician in family practice.

Dr Legg is currently retired from active practice but continues to instruct medical students at the Kansas City University of Medicine and Biosciences in Mo.

Maneuver Methods
Two practitioners are required to apply the Legg technique with a patient—one osteopathic physician to perform the reduction and one assistant to stabilize the unaffected shoulder. The application of the technique involves the following steps:

1. The patient is seated in a straight-backed chair to minimize movement of the upper body.
2. The assistant stabilizes the patient’s uninjured shoulder by applying slight downward pressure. This stabilization must be maintained throughout the procedure.
3. The patient is instructed to abduct the injured arm to an angle of 90° to the body, if he or she is able to do so (Figure 1).
If the patient is unable to perform this movement, the physician may provide assistance.

4. The physician rotates the arm externally, such that the patient’s palm is facing forward.

5. The physician flexes the patient’s elbow to a 90° angle (Figure 2).

6. The physician ascertains that the abducted elbow and forearm are maintained behind a coronal plane passing through the patient’s occiput (Figure 3).

7. The arm is adducted toward the patient’s side, fully flexing the elbow (Figure 4).

8. The patient is asked to actively internally rotate the arm across the chest (Figure 5).

Comment
After the Legg technique is performed properly, the patient’s dislocated shoulder should relocate. If the procedure is unsuccessful, it can be attempted again, making sure that the unaffected shoulder is firmly stabilized. The relocated arm can then be placed in an immobilizer and additional medical management can be provided as appropriate.

The Legg reduction maneuver is effective because it involves motions specifically designed to neutralize the various muscle groups that tend to resist shoulder relocation. By abducting the arm, tension on the supraspinatus and deltoid muscles is relaxed. External rotation reduces tension on the chief external rotators of the rotator cuff—the infraspinatus and teres minor. Flexion of the elbow acts to reduce tension on the coracobrachialis and bicep muscles.

The actual reduction occurs with adduction and internal rotation of the arm, using the subscapularis and latissimus dorsi muscles to assist in the relocation.

Conclusion
In performing the Legg reduction maneuver, the physician works with the natural tendencies of muscle groups in the patient, as opposed to working against them. This is the aspect of the technique that allows it to be performed without patient sedation. In addition, the technique requires no traction to be placed on the injured shoulder, decreasing the potential for neurovascular injury.

The Legg reduction maneuver is a clinically useful technique for treating patients who have anterior shoulder dislocation.

References


Figure 3. In the next step of the Legg reduction maneuver, the abducted elbow and forearm are maintained in a position that is posterior to the occiput.

Figure 4. In the next step of the Legg reduction maneuver, the arm is adducted toward the patient’s side while fully flexing the elbow.

Figure 5. In the final step of the Legg reduction maneuver, active internal rotation of the arm and adduction of the arm effect reduction of the dislocated shoulder.