



# Locked Neglected Posterior Shoulder Dislocation-Outcome



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## Introduction

Posterior dislocation of the shoulder joint is a rare entity accounting for less than 2% of all shoulder<sup>1,2</sup> dislocations. The injury is misdiagnosed in 50% to 79% of patients, most commonly due to lack of critical physical examination and inadequate radiographic examination or insufficient radiograph reading skills of the attending physician. The main causes of dislocations are trauma, seizures, or electric shock<sup>[1-7]</sup>. The diagnosis is suspected in patients with a palpable prominence of the coracoid, increased palpable prominence of the humeral head in the posterior aspect of the shoulder, and a complete loss of external rotation <sup>[8]</sup>.

An anteroposterior view and axillary view (if tolerated by patient) is helpful to reach the diagnosis<sup>[9]</sup>. Computed tomography can identify the involvement of the articular surface of the humeral head and fractures of the tuberosity, surgical neck, and glenoid. Magnetic resonance imaging is useful rare cases to reveal cuff tears and posterior labrum lesions. Treatment modalities vary and depend on the size of the humeral head defect, the duration of dislocation, and the degree of instability. Numerous surgical techniques have been described for the management of this injury, including disimpaction with elevation and bone grafting of the defect, transposition of the subscapularis tendon or the lesser tuberosity into the defect, rotational osteotomy of the proximal humerus, and hemi- or total shoulder arthroplasty for large defects and neglected dislocations<sup>[3-6]</sup>.

## Materials and Methods

Between January 2014 and December 2016, we performed retrospective analysis of four patients (5 shoulders) with locked neglected posterior shoulder dislocation treated by a single orthopedic surgeon in a private setting. Causes of posterior shoulder dislocation in our study were trauma in two cases while other two had electric shock. One case with electric shock was bilateral. The patients' average age was 43 years (range 25-58 years), while the mean follow up was 11 months (range 6-18 months). All the patients in our series were males and

the dominant shoulder was affected in 3 cases. All the patients were evaluated by plain radiographs pre and postoperatively. Each patient underwent open reduction and capsular shift with subsequent immobilization and physical therapy.

## Surgical Technique

We performed an open reduction of the shoulder joint using deltopectoral approach with the patient in beach chair position under general anesthesia. The lower edge of the subscapularis tendon was identified and tagged with proline suture. To expose the humeral head and glenoid the subscapularis tendon and capsule were elevated. Reduction was done carefully using an elevator to prevent further damage to the head and glenoid. Stability of the shoulder joint was evaluated preoperatively clinically and through fluoroscopy to see the entire range of motion. Temporary stabilization of shoulder joint with Kirschner wires was unnecessary. One patient required filling of the bone defect by lesser tuberosity. The wound was closed in layers using a suction drain. The shoulder was immobilized using a brace for a period of 6 weeks. We restricted Internal rotation of the shoulders during this time period. Physical therapy was initiated, including passive, active-assisted, and progressively active range of motion and rotator cuff strengthening exercises. Full activity was allowed at 12 weeks postoperatively.

## Results

We use UCLA scoring system. Mean follow-up was 11 months (range, 6-18 months). Mean range of shoulder motion was 162° of flexion (range, 150°-175°), 69° of external rotation (range, 55°-80°), 48° of internal rotation (range, 40°-55°), and 140° of abduction (range, 130°-155°). At last follow-up, all patients were asymptomatic with painless and stable shoulder joints without sign of instability. Mean Constant score used to evaluate patient satisfaction was 84% (range, 77%-90%). All patients were very satisfied with their level of function with no restrictions. In all cases, radiographs showed the humeral head to be satisfactory reduced in relation to the glenoid (Figures 1&2) and (Tables 1&2).



**Figure 1:** Clinical photographs of patient at 18-month follow-up showing abduction (135°) (A), flexion (175°) (B), and external rotation (80°) (C).

**UCLA Shoulder rating scale**

Clinician's Name: \_\_\_\_\_ Patient's Name \_\_\_\_\_

**Section 1 - Pain**

- Present always and unbearable; strong medication frequently
- Present always but bearable; strong medication occasionally
- None or little at rest; present during light activities; salicylates used frequently
- Present during heavy or particular activities only; salicylates used occasionally
- Occasional and slight
- None

**Section 2 - Function**

- Unable to use limb
- Only light activities possible
- Able to do light housework or most activities of daily living
- Most housework, shopping, and driving possible; able to do hair and to dress and undress, including fastening bra
- Slight restriction only; able to work above shoulder level
- Normal activities

**Section 3 - Active forward flexion**

- 150°
- 120°-150°
- 90°-120°
- 45°-90°
- 30°-45°
- <30°

**Section 4 - Strength of forward flexion (manual muscle testing)**

- Grade 5 (normal)
- Grade 4 (good)
- Grade 3 (fair)
- Grade 2 (poor)
- Grade 1 (muscle concentration)
- Grade 0 (nothing)

**Section 5 - Satisfaction of patient**

- Satisfied and better
- Not satisfied and worse

Total UCLA Shoulder score is: \_\_\_\_\_

**Figure 2**

**Table 1:** Details of Patients with Neglected Locked Posterior Dislocation of the Shoulder.

Patient No./Sex/Age, y	Shoulder	Mechanism of Injury	Time from Injury to Surgery, wk.	Follow up months
1/M/37	R	Trauma	4	12
2/M/52	R	Trauma	4	8
3/M/58	R	Electric shock	8	6
4/M/25	R	Electric shock	16	18
	L	Electric shock	12	18
Mean 43			12	11

Table 2

Patient No./Sex/Age, y	UCLA Score	Flexion	Abduction	External rotation	Internal rotation
1/M/37	29	165	130	65	55
2/M/52	25	160	140	70	40
3/M/58	28	150	155	55	50
4/M/25	29	175	140	80	50
	30	160	135	75	45
Mean	28.2	162	140	69	48

### Discussion

Posterior shoulder dislocation is a rare entity. Once it is diagnosed, the management depends on the amount of the defect of the humeral head and the time from injury. The size of the humeral head impaction fracture is key to the decision process[10]. Defects of the articular surface of the humeral head up 50% of the articular surface should be treated with shoulder arthroplasty[11,12]. The management of defects between 25% and 50% are more challenging. Our study has some shortcomings. There were small number of cases. We have short follow up and there was no comparative group[13-23].

### Conclusion

Management of neglected, locked posterior shoulder dislocation is difficult and diagnosis is often delayed, making treatment even more challenging. Traditional techniques have had limited success with closed reduction in the chronic situation. Open reduction is the mainstay of treatment in neglected locked posterior shoulder dislocation.

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