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Case Study

ANTERIOR SHOULDER DISLOCATION WITH ASSOCIATED GREATER TUBEROSITY FRACTURE MANAGED CONSERVATIVELY

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ABSTRACT

Traumatic anterior shoulder dislocation is the most common type of major joint dislocation and is frequently associated with fractures of the greater tuberosity. We report the case of a 35-year-old female who presented with acute left shoulder pain following a fall and was diagnosed with anterior shoulder dislocation with an associated greater tuberosity fracture. Closed reduction was performed using Kocher's method, followed by immobilization and structured rehabilitation. Serial follow-up demonstrated progressive improvement in range of motion and radiological fracture union. At final follow-up, the patient achieved full functional recovery without surgical intervention. This case highlights the effectiveness of early closed reduction, careful radiographic monitoring, and supervised rehabilitation in minimally displaced greater tuberosity fracture–dislocations.

INTRODUCTION

Traumatic anterior shoulder dislocation is the most common form of joint dislocation, with an incidence ranging from 11 to 29 per 100,000 persons per year[1,2]. The glenohumeral joint is particularly prone to instability owing to its wide range of motion and relatively shallow glenoid fossa [3]. Concomitant fractures of the greater tuberosity are observed in approximately 20% of anterior shoulder dislocations and represent a distinct injury pattern with important implications for management and prognosis. [5]

The degree of displacement of the greater tuberosity fragment after reduction is a key prognostic factor. Minimally displaced fractures can be managed conservatively, whereas displacement greater than 3–5 mm may require surgical fixation[6] to prevent subacromial impingement and rotator cuff dysfunction [7].

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Recent studies have emphasized the risk of secondary displacement even after apparently satisfactory closed reduction, underscoring the importance of close radiographic follow-up during the early post-reduction period [10,11].

We report a case of anterior shoulder dislocation with associated greater tuberosity fracture successfully managed with closed reduction and conservative treatment, resulting in excellent functional and radiological outcome.

Patient Information

Primary concerns and symptoms

A 35-year-old female presented to the Shalyatantra outpatient department with severe pain and inability to move the left shoulder following a fall one hour prior to presentation.

Medical, family, and psychosocial history

The patient, Amalya, aged 35 years, works as a cleaning staff in a hotel at Ambalavattom. She is a native of North India. There was no history of previous shoulder injury, epilepsy, connective tissue disorder, or recurrent dislocation. No significant medical comorbidities or relevant family history were reported.

Relevant past interventions

The patient initially consulted a nearby clinic where a radiograph was taken, following which she

was referred to our hospital for further management.

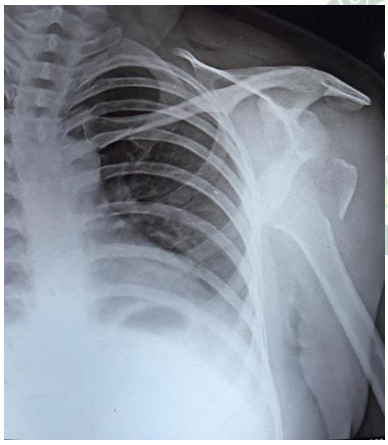
Clinical Findings

On examination, the left shoulder was held in slight abduction and external rotation. There was marked tenderness over the anterior shoulder and greater tuberosity region. The normal contour of the deltoid was lost, and the humeral head was palpable anteriorly. Active movements were absent due to pain. Distal neurovascular status was intact.

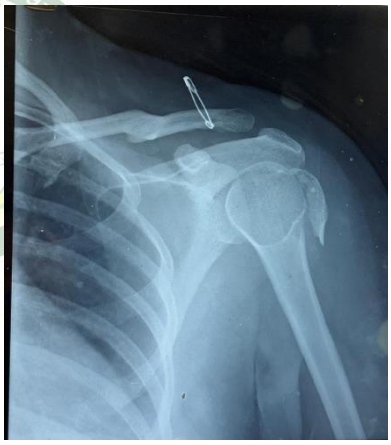
Timeline

Date	Event
19/05/2025	First visit. Diagnosis of anterior dislocation of left shoulder with greater tuberosity fracture. Closed reduction done using Kocher's method. Immobilisation done using kora bandage
26/05/2025	Follow-up. Pain reduced. Immobilization continued.
02/06/2025	Follow-up. Stable reduction maintained.
09/06/2025	Bandage removed. Passive abduction. possible. *Murivenna pichu* advised.
16/06/2025	Passive abduction 90°, flexion 20°.
26/06/2025	Passive abduction and flexion 110°. Active flexion 45°and abduction 50°.
20/01/2026	Final follow-up. Full range of motion. Radiograph showed fracture union

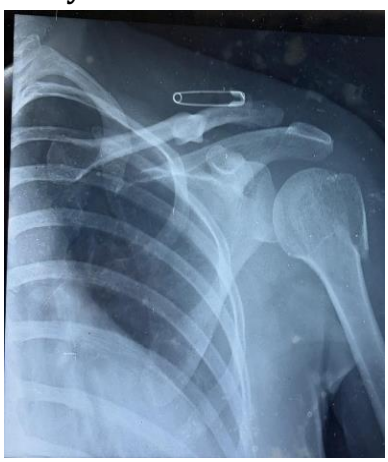
Diagnostic Assessment



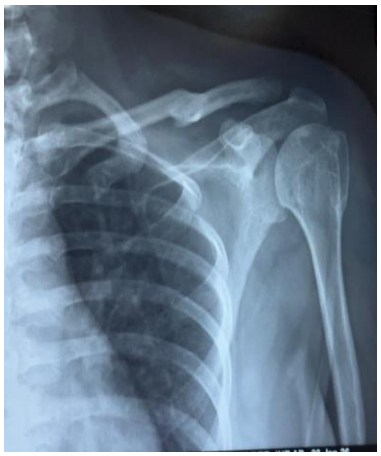
X Ray taken before reduction



Xray taken after reduction



X ray taken after 2 weeks



X ray taken after 6 months

Diagnostic testing

Initial radiographs revealed anterior dislocation of the left shoulder with an associated fracture of the greater tuberosity. Post-reduction radiographs confirmed concentric reduction of the

glenohumeral joint and near-anatomical alignment of the greater tuberosity fragment.

Diagnostic challenges

No significant diagnostic or logistical challenges were encountered. Imaging was readily available.

Diagnosis

Anterior shoulder dislocation with minimal displaced fracture of the greater tuberosity of the humerus.

Differential diagnoses considered included isolated shoulder dislocation, surgical neck fracture of humerus, and rotator cuff tear.

Therapeutic Intervention

Type of intervention

Closed reduction using Kocher's method, followed by immobilization with a Kora bandage and sling.

Administration

Immobilisation was maintained for two weeks. After bandage removal, passive mobilization exercises were initiated. Internal medicines included *Mustadi Marma Kashaya*[12] and *Laksha Guggulu*[13] as supportive therapy.

Follow-up and Outcomes

Gradual progression from immobilization to passive mobilisation, followed by assisted active movements.

Outcomes

Progressive improvement in range of motion was documented. At final follow-up, full range of motion was achieved without pain.

Follow-up investigations

Final radiograph showed complete union of the greater tuberosity fracture with maintained joint congruity.

Adherence and tolerability

The patient was compliant with immobilisation and physiotherapy. No adverse drug reactions were noted.

DISCUSSION

Anterior shoulder dislocation is the most frequent major joint dislocation encountered in clinical practice [1,2]. Associated greater tuberosity fractures significantly influence management strategy due to the risk of secondary displacement and rotator cuff dysfunction.[4] Studies by Dussing et al. and Cirigliano et al. have demonstrated that minimally displaced greater tuberosity fracture–dislocations can achieve reliable outcomes after closed reduction and conservative treatment. [5,13]

However, Nakamura et al. reported that up to 50% of initially well-aligned fractures may develop secondary displacement within two weeks, particularly in cases with broad rotator cuff insertion involvement [10]. This emphasizes the need for close radiographic monitoring, which was strictly followed in our case.

In the present patient, early reduction using Kocher's method, strict immobilization, and structured rehabilitation resulted in excellent functional recovery without surgical intervention. The favourable outcome can be attributed to minimal post-reduction displacement and good patient compliance.

Strengths

- Detailed serial clinical and radiological follow-up
- Demonstration of successful conservative management

Limitations

- Single case
- Lack of advanced imaging such as CT to quantify fragment displacement

CONCLUSION

This case demonstrates that anterior shoulder dislocation with minimally displaced greater tuberosity fracture can be successfully managed with early closed reduction, careful immobilization, and supervised rehabilitation, resulting in excellent functional and radiological outcomes without surgery.

Patient Perspective

The patient reported initial severe pain and fear of permanent disability. She expressed satisfaction with the non-surgical treatment and gradual improvement in shoulder movements, allowing her to return to work without limitations.

Informed Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images.

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