International Journal of Research and Review
[Indexed, Peer-Reviewed Journal]
Volume 12; Issue: 6; June 2025
Website: www.ijrrjournal.com
Case Report *E-ISSN: 2349-9788; P-ISSN: 2454-2237*

Outcomes of Inferior Shoulder Dislocation at Prof. Dr. IGNG Ngoerah General Hospital: A Case Series

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DOI: https://doi.org/10.52403/ijrr.20250690

ABSTRACT

Introduction: Inferior shoulder dislocations also known as "luxatio erecta of the humerus" are uncommon injuries that only account for 0.5-1% of all shoulder dislocations. This case series aimed to present the outcomes of inferior shoulder dislocation in two cases.

Case Presentation: We presented two patients with inferior shoulder dislocation. One case was an elderly male who fell from the stairs and another case was a young female who fell from a motorcycle. Both patient's arms were in elevation, full abduction, and external rotation position which is typical for inferior shoulder dislocation. A shoulder x-ray examination was performed to confirm the diagnosis and finding associated injuries. Both patients were managed with closed reduction under general anesthesia and immobilization with collar and cuff.

Discussion: The incidence of inferior shoulder dislocation is more common among the elderly. The clinical signs and symptoms were clear, diagnosis can typically be determined from the exam room doorway. The etiology was usually traumatic, such as falling from motorcycles with shoulders touching the ground, which made the acromion pressed up against the humerus neck. It is crucial to do imaging examinations since inferior shoulder dislocation is commonly accompanied by fractures, soft tissue, or neurovascular injuries. The preferred therapy is closed reduction following immobilization with collar cuff as the prognosis is generally favorable.

Conclusion: Early close reduction is necessary in inferior shoulder dislocation to avoid further complications and reduce pain. The prognosis is generally favorable. However, the healing process can be significantly influenced by age. Both patients in this case series have good clinical and radiological outcomes after closed reduction under general anesthesia and immobilization with collar and cuff.

Keywords: inferior shoulder dislocation, close reduction, collar and cuff, shoulder, case series

INTRODUCTION

The glenohumeral joint of the shoulder is the most frequently dislocated joint in the body, accounting for around half of all dislocations seen in emergency rooms. While anterior dislocations are relatively common, inferior shoulder dislocations are uncommon, only account for approximately 1 case in 200 of all dislocations.[1]

The inferior shoulder dislocations are also known as "*luxatio erecta of the humerus*" which means "*erect dislocation*" in Latin.

This case was first described in 1859. This is an uncommon injury with 0,5-1% of all shoulder dislocations.[1,2] The incidence is more prevalent among the elderly.[3] The clinical signs and symptoms were clear, diagnosis can typically be determined from the exam room doorway. The etiology was usually traumatic, such as falling from motorcycles with shoulders touching the ground, which made the acromion pressed up against the humerus neck. This condition was frequently associated to soft tissue, neurovascular, and bone traumas. Diagnostic imaging with shoulder X-ray is advised to confirm this type of injury. Due to its great outcomes and favorable prognosis, closed reduction is the preferred therapy.[1,4]

This case series aimed to present two cases of inferior shoulder dislocation, one in an elderly male and one case in a young female. Our goal was to report the outcomes of inferior shoulder dislocation management with closed reduction and immobilization using Collar and Cuff

We described two cases of inferior shoulder dislocation at Prof. Dr. IGNG Ngoerah General Hospital, Denpasar, Bali in August 2022. The medical history, physical examination, and imaging of the patients were collected through primary data. The outcomes of the patient were measured with history taking, physical examination, and x-ray examination.

CASE PRESENTATION

Case 1

A 65-year-old male presented with pain in the right shoulder after falling from stairs and the right shoulder hit the floor one day before hospital admission. The pain was felt constantly and getting worse when he moved his right hand. There was no wound in other body parts. The history of lost consciousness, nausea, vomiting, or trauma to the head were denied.

Primary survey was clear and the patient was in stable hemodynamic condition. Physical examination revealed swelling around the shoulder region, bruise, deformity, arm in elevation, abduction and external rotation. Palpation of the shoulder revealed palpable head humerus, tenderness at proximal humerus, palpable radial artery, and no hypoesthesia at badge area. Active range of motion (ROM) of the right shoulder was limited due to pain. Active ROM elbow was 0/120, wrist 80/90, and MCP-IP 0/90. Laboratory examination was within normal limit. Shoulder X-ray examination showed right inferior shoulder dislocation (Figure 1).

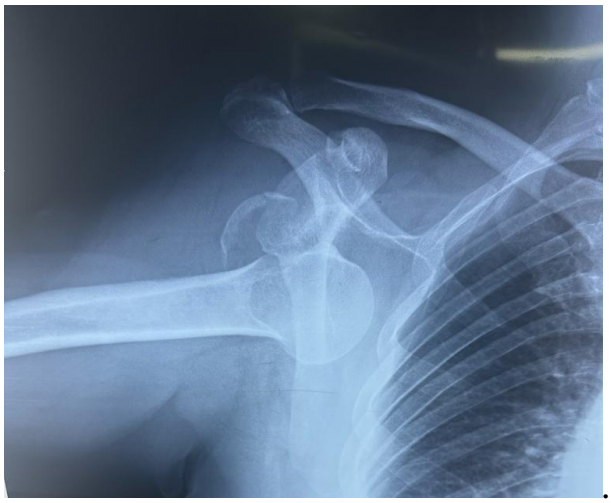

Figure 1. Shoulder X-ray showed inferior shoulder dislocation

The patient was diagnosed with right inferior glenohumeral joint dislocation (Subacoracoid Type). The patient was planned for closed reduction under general anesthesia and immobilization with Collar and Cuff. The management went uneventful

and the shoulder pain has subsided. (Figure 2). Three months after management, there was still no complaint.

Figure 2. Clinical condition of the patient after closed reduction and immobilization with Collar and Cuff

Case 2

A 31-year-old female presented with pain in the right shoulder after falling from a motorcycle to the right side and the right shoulder hit the ground one day before hospital admission. The pain was felt constantly and getting worse when she moved his right hand. History of lost consciousness, nausea, vomiting, or head trauma were denied.

Vital signs of the patients were normal. Physical examination of the right shoulder region revealed swelling, bruise, and deformity. The arm was in elevation, full abduction, and external rotation position (Figure 3). Palpation of the shoulder revealed palpable head humerus, tenderness at proximal humerus, palpable radial artery, and no hypoesthesia at badge area. Active range of motion (ROM) of the right shoulder was limited due to pain. Active ROM elbow was 0/120, wrist 80/90, and MCP-IP 0/90. Laboratory examination was within normal limit. Shoulder X-ray examination showed right inferior shoulder dislocation (Figure 4a).

Figure 3. Clinical examination of the patient

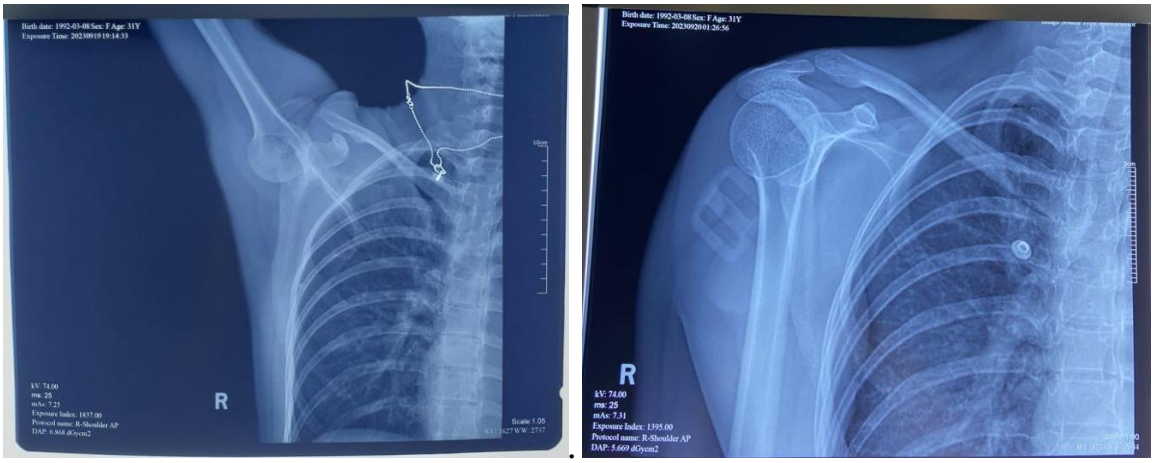

Figure 4. Shoulder X-ray showed inferior shoulder dislocation (a) and post closed reduction X-ray showed normal shoulder

The patient was diagnosed with right inferior glenohumeral joint dislocation. The patient was managed with closed reduction under general anesthesia and immobilization with Collar and Cuff. Clinical and radiological assessment showed that the outcome of treatment was favorable. The pain had been reduced and the X-ray examination showed normal shoulder alignment (Figure 4b). Three months after reposition, there was no complaint.

DISCUSSION

The etiology of inferior shoulder dislocation is usually a high-energy traumatic injury, such as falling from a height or from a motorcycle with the shoulder hitting the ground. The risk factors for this kind of injury are advanced age and individuals with a previous history of shoulder injuries. The mechanism of injury is hyperabduction of the arm brought on by a strong abduction force, which straightens the humerus' neck against the acromion and tears the inferior capsule (middle and inferior glenohumeral ligament), as well as mobilizes the humeral head out of the joint capsule.[3,5,6] The patient in this case was an elderly who fell from stairs and a young female who fell from a motorcycle. The history of previous shoulder injuries was denied in both patients.

The diagnosis of inferior shoulder dislocation was made from medical history, physical examination, and imaging. Inferior shoulder dislocation is distinguished by "erect dislocation", which is the presence of a fully abducted arm that is lifted above the head, a slightly flexed elbow, and a forearm that is pronated. This position is referred to as the "Hands Up" position. In certain instances, it can be seen that the afflicted arm is being held by the hand opposite the lesion to lessen discomfort. Additionally, the humeral head may be shifted downward in the axillary area in thin individuals.[1,3,7] The condition of both patients in this case series was similar to the previous findings.

Associated injuries such as fractures, soft tissue injuries, or neurovascular injuries were found in 80% of inferior shoulder dislocation, therefore imaging such as an X-ray, CT scan, or MRI is advisable to rule out associated injuries.[5] The most commonly associated soft tissue injuries are rotator cuff tear, shoulder capsular avulsion, and disruption of the surrounding muscles. This problem may create long-term consequences including adhesive capsulitis or recurrent dislocation in the future. A neuro-vascular impairment was reported to affect 60% of patients. The axillary or circumflex nerve is the most often injured structure, followed by the brachial plexus, radial, ulnar, and median nerves. The nerve injury may recover in a range of two weeks to one year, depending on how long the patient has suffered from the injury and the patient's aging.[8]

The preferred choice of therapy for inferior shoulder dislocation is generally a closed reduction using the traction-contraction

approach together with sedation, analgesics, and muscle relaxation, followed by shoulder immobilization for three to six weeks and physical therapy. Closed reduction needs to be performed as early as possible to reduce damage to the neurovascular system. After the reduction, it is advisable to use radiography to assess the proper humeral position and rule out any possible related fractures. Surgical treatment is indicated in situations of open dislocation, humeral head fracture, or concomitant lesions that need surgical treatment. After appropriate treatment, this injury has a good long-term prognosis. However, patient aging can affect their capacity for healing and biomechanical performance.[3,4] The patients in this case series were managed with closed reduction under general anesthesia due to no other associated injury aside from inferior shoulder dislocation in the X-ray imaging.

Immobilization in this case series was performed using a collar and cuff. The collar-and-cuff is a conventional, low-cost technique that is simple to use, versatile, and can be customized to each patient. Another option for shoulder immobilization is a sling and swathe or a commercial shoulder immobilizer.[9]

The result of this case was supported by Panduro et al that reported a successful close reduction in a 83-year-old female with inferior shoulder dislocation.[3] Khedr et al reported a bilateral irreducible inferior shoulder dislocation in a 35-year-old male which was successfully managed with open reduction.[10] Panico et al reported a case of inferior shoulder dislocation with a Hill-Sachs lesion that was managed with closed reduction under general anesthesia.[11]

The limitation of this study is the small number of samples due to the rarity of the case and the short follow up time which is only within 3 weeks after reposition.

CONCLUSION

Medical professionals need to be aware of inferior shoulder dislocation in order to administer appropriate treatment. It is crucial to do imaging examinations including X-rays, CT scans, and MRIs since this type of injury is commonly accompanied by fractures, soft tissue, or neurovascular injuries. Early reduction is necessary to avoid further complications and reduce pain. The prognosis is generally favorable. However, the healing process can be significantly influenced by age. Both patients in this case series have good clinical and radiological outcome after closed reduction under general anesthesia and immobilization with collar and cuff.

Declaration by Authors

Acknowledgement: None

Source of Funding: None

Conflict of Interest: The authors declare no conflict of interest.

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How to cite this article: Made Ayu Devi Pitaloka, Cokorda Gde Oka Dharmayuda. Outcomes of inferior shoulder dislocation at Prof. Dr. IGNG Ngoerah General Hospital: A Case Series. *International Journal of Research and Review*. 2025; 12(6): 808-813. DOI: *https://doi.org/10.52403/ijrr.20250690*

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