Visual Journal of Emergency Medicine 16 (2019) 100604

Contents lists available at ScienceDirect

Visual Journal of Emergency Medicine

journal homepage: www.elsevier.com/locate/visj

Visual Case Discussion

Closed reduction of an inferior shoulder dislocation

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ARTICLE INFO

Keywords:
Inferior shoulder dislocation
Luxatio erecta
Shoulder pain

A 43-year-old man presents with right shoulder pain and inability to lower his right arm after falling backwards and hyper-extending his right upper extremity. On examination, his right shoulder is held in a fixed, abducted position above his head, with his elbow flexed. (Fig. 1) He describes significant shoulder pain and cannot adduct his shoulder either actively or passively. Distal pulses and motor strength are intact. Radiographs of the right shoulder reveal an inferior shoulder dislocation with no evidence of fracture. (Fig. 2) Under conscious sedation, his shoulder is reduced and placed in a sling. (Video)

Inferior dislocations of the glenohumeral joint, also known as luxatio erecta humeri, comprise 0.5% of all shoulder dislocations.[1] Most inferior dislocations are caused by hyper-abduction of the arm during trauma, either from sudden, forceful outward traction on the humerus or a direct axial load to the extremity.[1,2] The classic presentation of an inferior shoulder dislocation is a patient with his/her arm fixed in hyper-abduction above his/her head, with his/her elbow flexed and forearm pronated.[2] The arm stays in an erect position, due to impingement of the humeral head under the inferior capsule and pulling of the pectoralis major. The humeral head can often be palpated in the axilla or over the chest wall.[1] Radiographs, obtained to assess for concomitant fractures, show the humeral head below the glenoid fossa and the humeral shaft parallel to the scapular spine.[1,2]

Most inferior dislocations are reduced in the emergency department using a closed, two-step technique, with or without conscious sedation.[1] Open reduction with orthopedic surgery is indicated if closed reduction fails or if there is a humeral neck/shaft fracture or major vessel injury.[1] Following reduction, patients are typically placed in a shoulder immobilizer and referred to outpatient orthopedics and physical therapy.[1] Complications of inferior shoulder dislocations include rotator cuff tears, fractures of the clavicle, glenoid fossa, or greater tuberosity of the humerus, and neurovascular injuries, such as brachial plexus injury or axillary artery/vein thrombosis.[1,2] Up to 60% of patients will have an axillary nerve palsy, resulting in deltoid hypoesthesia and weakness in abduction of the arm.[3] Most nerve palsies resolve spontaneously and patients with inferior dislocations typically have excellent prognoses.[3]

Questions

1 A farmer presents with left shoulder pain after falling from a tree while picking fruit. During the fall, he had grabbed onto a tree branch and was briefly suspended in the air by his left arm. In the emergency department, his left arm is held above his head, with his elbow flexed, and he is unable to lower the arm. What is the most likely injury?
   a Anterior shoulder dislocation
   b Posterior shoulder dislocation
   c **Inferior shoulder dislocation**
   d Acromioclavicular dislocation
2 After undergoing closed reduction of an inferior shoulder dislocation, a patient complains of persistent weakness in shoulder abduction and numbness over his lateral shoulder. Which of the following was most likely injured?
   a Median nerve
   b **Axillary nerve**
   c Suprascapular nerve
   d Radial nerve

Answers

1 Inferior shoulder dislocation. Inferior shoulder dislocation. Inferior shoulder dislocations, the rarest type of shoulder dislocation, are typically caused by forceful outward traction on the humerus or a direct axial load to the extremity. Impingement of the humeral head under the inferior capsule prevents the patient from being able to

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https://doi.org/10.1016/j.visj.2019.100604
Received 23 February 2019; Accepted 12 May 2019

Fig. 1. The patient presents with his arm abducted over his head, with his elbow flexed and arm pronated.
Pillows, propped under his elbow to support the extremity, offer some pain relief.

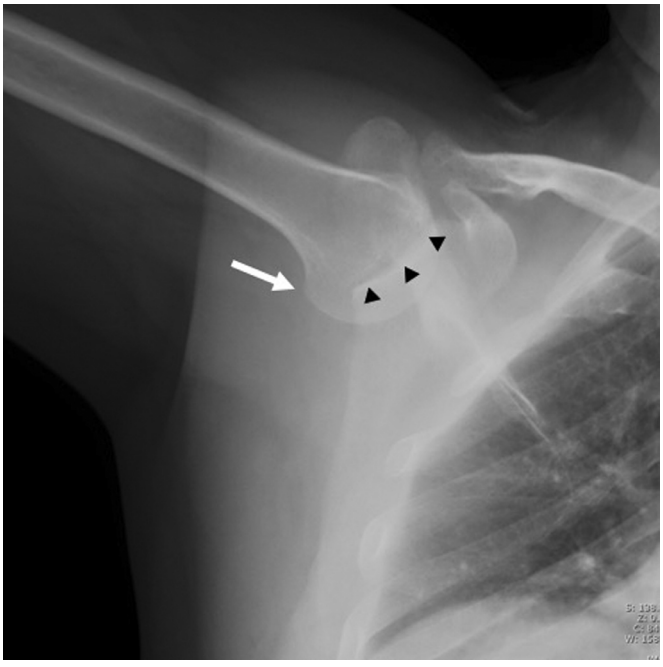

Fig. 2. An anteroposterior radiograph shows the humeral head (white arrow) located inferior to the glenoid fossa (black triangles).

lower his/her arm.

2 Axillary nerve. Axillary nerve. Approximately 60% of patients with inferior shoulder dislocations will have an axillary nerve palsy, which may persist following closed reduction. In contrast to a suprascapular nerve palsy, which presents with isolated weakness in iniation of shoulder abduction (i.e. purely motor deficits), an axillary nerve palsy will also cause deltoid hypoesthesia (i.e. motor and sensory deficits). Most neurologic injuries associated with inferior shoulder dislocations resolve spontaneously.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.visj.2019.100604.

References

1. Imerci A, Golcuk Y, Ugur SG, et al. Inferior glenohumeral dislocation (luxation erecta humeri): report of six cases and review of the literature. *Ulus Travma Acil Cerrahi Derg.* 2013;19(1):41–44.
2. Petty K, Price J, Kharasch M, et al. Bilateral luxatio erecta: a case report. *J Emerg Med.* 2014;46(2):176–179.
3. Mallon WJ, Bassett 3rd FH, Goldner RD. Luxatio erecta: the inferior glenohumeral dislocation. *J Orthop Trauma.* 1990;4(1):19–24.