EM CASE OF THE WEEK.

BROWARD HEALTH MEDICAL CENTER
DEPARTMENT OF EMERGENCY MEDICINE

BROWARD HEALTH Care Warriors

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Luxatio Erecta

70-year-old male with no known past medical history sustained a trip and fall while pushing a shopping cart, landing on a an abducted and flexed left arm. He presents to the emergency department complaining of shoulder pain with his arm abducted 160 degrees, and he is unable to lower it secondary to pain. He reports mild tingling and numbness along his fourth and fifth digits.

Upon physical examination the patient is found resting anxiously with his arm overhead and fixed in abduction. Further inspection of the left upper extremity reveals tenderness to palpation of the shoulder girdle and a palpable humeral head in the axilla. Sensation to light touch is intact in the radial and median nerve distribution but diminished along ulnar nerve distribution. Motor strength of median and radial nerves is 5/5. Ulnar nerve motor strength is 4/5. There is a palpable 2+ radial pulse and brisk capillary refill noted distally. Radiographs will most likely reveal that his humeral head has most likely dislocated in which direction?

A. Superior

B. Anterior

C. Posterior

D. Inferior

E. Lateral

Luxatio erecta, is a specific term for inferior dislocation of the glenohumeral joint with the humeral head trapped underneath the coracoid and glenoid[1-3].

The figure above demonstrates the classic presentation[1] of a patient who sustained an inferior glenohumeral joint dislocation (luxatio erecta).

EM Case of the Week is a weekly "pop quiz" for ED staff.

The goal is to educate all ED personnel by sharing common pearls and pitfalls involving the care of ED patients. We intend on providing better patient care through better education for our nurses and staff.

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The correct answer is D. The humeral head will be dislocated inferiorly in a patient who presents with Luxatio Erecta and a fixed arm overhead on examination.

Epidemiology

Luxatio Erecta is a **rare type of shoulder dislocation**, accounting for approximately **0.5% of all shoulder dislocations**[1-9]. It is commonly associated with traumatic injuries caused by flexion and hyperabduction forces that disengage the proximal humeral head from the glenoid fossa trapping the humeral head underneath the coracoid and glenoid.

Approach To The Patient With Luxatio Erecta

Luxatio Erecta is an extremely uncommon type of shoulder dislocation (incidence of 0.5% of all shoulder dislocations[1-9]), however despite its rare occurrence, it is important for an Emergency Physician to be able to recognize its presentation and decide proper management. Most cases can be treated successfully with non-operative management[9], but it is vital to know and understand the potential complications associated with this injury as an assessment of risks and benefits should guide the definitive treatment.

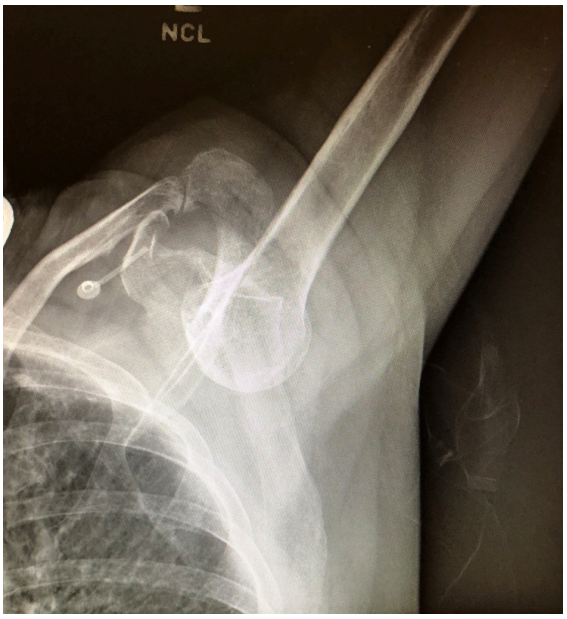
Initially, recognition of the typical presentation should prompt a thorough physical examination. The assessment should rule out any other concomitant injuries as well as include a thorough neurovascular examination. Assessment is important pre and post reduction and should focus on radial pulse, and neurological examination of axillary and distal nerves.

Radiographs are essential studies used to assess the true position of the humeral head in reference to the glenoid fossa and can reveal any associated bony fracture deformities[3].

Radiological Evaluation

Complete shoulder series should be obtained: AP, Axillary, and Scapular Y views

Patient radiographs (as depicted in the figure below) will demonstrate a humeral head that is inferior to the rim of the glenoid and humeral shaft that is parallel to the scapular spine[3].



Management

Closed reduction should be attempted as this treatment carries a high rate of success.

Surgical indications include the following:[1-2,4-7]

- Open injury
- Multiple reduction attempts
- Associated vascular injury
- Concomitant fractures of the acromion, clavicle, inferior glenoid fossa or greater tuberosity
- Young highly active patients

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All are welcome to attend!

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Closed Reduction Techniques:

Adequate sedation and relaxation prior to reduction attempt should always be achieved. Pre-reduction neurovascular exam is essential.

Traction-Counter-traction technique: With an assistant, a sheet wrapped around the affected trunk is used to provide counter traction toward the contralateral hip. The affected arm is then abducted and flexed, accentuating the injury mechanism. The humeral shaft is then pulled axially. An additional force to the humeral head in a cephalad and lateral direction can be applied to aid in the reduction. Once the humeral head is reduced into the glenoid fossa, the arm is slowly adducted toward the body.[1,2,4-9]

Two-step maneuver:
Inferior dislocation→anterior dislocation→reduction
On the affected side, a pushing force is applied to the lateral aspect of the midshaft humerus and pulling force on the medial epicondyle. The push hand manipulates the humeral head from an inferior position to an anterior position relative to the glenoid while the pull hand provides gently superior directed force at the distal humerus. This maneuver will convert the inferior dislocation into an anterior dislocation. The anterior dislocation can then be further reduced using standard techniques.[4]

Complications:

- 80% of Luxatio Erecta are associated with rotator cuff injuries[1-3,9]
- 50-60% are associated with Brachial Plexus Injury[5,6]
    - Axillary nerve palsy- most common
    - Typically resolve within 6 months following shoulder reduction and observation
- Concomitant fracture of the greater tuberosity[8]

Take Home Points

- Luxatio Erecta is an extremely rare dislocation patter comprising 0.5% of all shoulder dislocations[1-9]
- Patient presentation, physical examination, and radiological studies are used for treatment planning[3]
- Complications need to be considered when considering a choice between closed reduction and surgical management
- Closed reduction techniques are commonly successful in up to 80% of cases[9]

This month's case was written by Anna Roman-Pleschko. Anna is a 4th year medical student from NSU-KPCOM. She did her emergency medicine rotation at BHMC in September of 2019. Anna plans on pursuing a career in Orthopedic Surgery after graduation.

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