

## Sports Injuries of the Elbow; Fractures of the Proximal Humerus: Review Questions

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### QUESTIONS

Choose the single best answer for each question.

- Which one of the following nerves is the most commonly injured in elbow dislocations?
  - Radial nerve
  - Median nerve
  - Ulnar nerve
  - Posterior interosseous nerve
- A 14-year-old, left-hand-dominant baseball pitcher presents with left elbow pain during activity and with decreased elbow motion. Physical examination shows a 10-degree loss of extension, tenderness over the lateral aspect of the elbow with crepitation, and “catching” with range of motion. Radiographs show an irregular capitellar surface with osteophyte formation and a mildly narrowed joint space. Which one of the following is the appropriate initial treatment?
  - Arthroscopy and drilling of the lesion
  - Rest, ice, and nonsteroidal anti-inflammatory drugs (NSAIDs)
  - Arthroscopy and chondroplasty
  - Computed tomography scan
- A senior college quarterback presents with pain in his throwing elbow during the cocking stage of the throwing motion. The pain was progressive during the previous season. The patient shows pain and laxity with valgus stress applied to the elbow. The patient does not intend to pursue a professional career in football but does desire pain relief and stability. Which one of the following is the appropriate treatment?
  - Rest, NSAIDs, and physical therapy
  - Direct repair of the ulnar collateral ligament
  - Reconstructive repair using palmaris longus tendon
  - Reconstructive repair using a 5-mm strip of Achilles tendon
- A 70-year-old woman falls and sustains a four-part fracture of the proximal humerus. A cemented humeral head prosthesis is inserted. During the initial 10 weeks after surgery, the woman has progressive pain and dysfunction despite continuing physical therapy. Which one of the following is the most probable result of this early postoperative failure?
  - Rupture of the long head of the biceps
  - Rupture of the short head of the biceps
  - Reflex sympathetic dystrophy
  - Inadequate fixation of the cuff and tuberosities
  - Retained coracoacromial ligament
- The standard “trauma series” (imaging studies) for a proximal humerus fracture evaluation includes which of the following views?
  - Anteroposterior (AP), Y-scapular, axillary lateral
  - AP internal rotation, AP external rotation, Y-scapular
  - AP and computed tomography
  - Axillary lateral and magnetic resonance imaging
  - Acromial outlet and AP
- The two-part anatomic neck fracture has a high rate of avascular necrosis. Which one of the following is the arterial supply to the head fragment that is disrupted in these fractures?
  - The posterior humeral circumflex
  - The coracoacromial artery
  - The anterior humeral circumflex, arcuate branch
  - The arteriole comitans
  - Cuff muscle perforators

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EXPLANATION OF ANSWERS

1. **(C) Ulnar nerve.** The ulnar nerve is the most common nerve injury with elbow dislocations, although median nerve and brachial stretch injuries can occur. The medial collateral ligament is nearly always torn with this injury.
2. **(D) Computed tomography scan.** In the initial evaluation of patients suspected of having osteochondral lesions, physicians should first accurately establish the diagnosis using computed tomography scanning before initiating treatment.
3. **(A) Rest, NSAIDs, and physical therapy.** This patient demonstrates symptoms consistent with chronic medial elbow instability. Most of these lesions can be effectively treated conservatively with rest, NSAIDs, and physical therapy. Rarely, palmaris longus tendon reconstruction may be required for athletes with persistent symptoms whose skills are in great demand.
4. **(D) Inadequate fixation of the cuff and tuberosities.** Given the patient population in which most of the four-part fractures occur (age older than 60 years) osteopenia and vascular compromise may lead to

failure of even a meticulous repair or arthroplasty. Failure of the tuberosity or cuff repair is more likely to occur than failure of a cemented implant at the shaft interface. Loss of the muscle-cuff-bone integrity leads to dysfunction.

5. **(A) Anteroposterior (AP), Y-scapular, axillary lateral.** Although certain fractures may be defined best with the use of computed tomography, many proximal humerus fractures can be accurately classified with simple AP, Y-scapular, and axillary lateral views. These views constitute a basic trauma series.
6. **(C) The anterior humeral circumflex, arcuate branch.** The terminal branch of the anterior humeral circumflex artery, the arcuate, is intraosseous and supplies the entire epiphysis. Small perforators from the rotator cuff are largely inconsequential, so that disruption of the arcuate by an anatomic neck fracture is likely to result in avascular necrosis of the entire head fragment.

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