

CASE SCENARIO: ELBOW

A 25-year-old male dislocated his elbow during at a skateboarding park 14 days ago. He states that originally his elbow felt “stuck” and he was unable to fully straighten his arm for several days. At his friend’s insistence, he finally went to the emergency room and had his elbow “adjusted” two days ago. Radiographs were taken, though no fracture was seen. Currently, he denies numbness and tingling, yet admits that his elbow feels “sore.”

1. Considering his history, which of the following would you expect on his physical examination?
 - a. inadequate active range of motion into elbow extension.
 - b. normal ligamentous stability throughout the elbow.
 - c. neurovascular compromise.
 - d. upper extremity strength of 5/5.

2. In designing his plan of care, you are considering a forearm splint. Which of the following is true when deciding on use of a splint?
 - a. best practice would be to splint in 45° of elbow flexion and neutral forearm rotation.
 - b. a splint is contraindicated in this patient case and functional training should commence.
 - c. strong evidence exists for immobilization greater than 14 days postinjury to improve stability of the joint.
 - d. the longer the immobilization period, the greater risk for elbow stiffness as a postinjury impairment.

3. The patient has been seen regularly for 4 sessions in the last 2 weeks. While you did not detect any notable deformity, you have been concerned with the lack of improvement in range of motion. A reassessment is planned for today. In consideration of the original diagnosis of an elbow dislocation, which of the following of the following would be the most unlikely concomitant injury?
 - a. heterotopic ossificans.
 - b. ligamentous instability of the lateral collateral ligament.
 - c. median nerve impingement.
 - d. radial head fracture.

4. Which of the following may result in a poorer prognosis for a patient status-post elbow dislocation?
 - a. open reduction internal fixation procedures.
 - b. greater than 10 days between injury and reduction.
 - c. limited elbow extension at 14 days.
 - d. lack of neural symptoms.

ANSWERS

1. The most likely impairment is **a. inadequate active range of motion into extension.** Following a simple dislocation, the patient will often report restrictions into extension ROM and upper extremity weakness. Neurovascular compromise is unlikely. Ligamentous stability may or may not be present; the symptoms of which may become more pronounced as the acute symptoms resolve.
2. The correct answer is **d. the longer the immobilization period, the greater risk for elbow stiffness as a postinjury impairment.** If the elbow is unstable at 45° of elbow flexion, then surgery is recommended. Splinting is not contraindicated and may or may not be used. Long-term immobilization is not recommended with the intention of resolving ligamentous instability due to the development of both intrinsic and extrinsic stiffness and decrease in healing of the articular cartilage.
3. The correct answer is **a. heterotopic ossificans.** Common concomitant injuries include ligamentous instability and ulnar or median nerve injury in association with a simple dislocation. Radial head fractures are frequently missed on radiographs thus changing the original diagnosis from a simple dislocation to a complex. Heterotopic ossificans can occur with elbow injuries; however, this patient does not exhibit any of the risk factors for its development and no deformity was noted.
4. The correct answer is **c. greater than 10 days between injury and reduction.** With a simple dislocation, neural symptoms and inadequate extension are expected but do not bode negatively towards the prognosis. Upon appearance in the emergency room, the patient should have been assigned to an orthopedist to conduct an open procedure reduction.