

SAMPLE QUESTION ANSWERS THE WRIST & HAND

1. b. Pisiform

ADDITIONAL EXPLANATION

b. Correct. The Flexor Carpi Ulnaris attaches at the Pisiform.

2. b. 25%

ADDITIONAL EXPLANATION

3. b. A2 & A4

4. d. Extensor Pollicis Longus, Extensor Digitorum

ADDITIONAL EXPLANATION

a. Incorrect. These tendons are in the first compartment of the wrist and as such are too far radial. They are superficial to the Scaphoid.

b. Incorrect. These tendons are in the 6th and 5th compartments and are to ulnar. They are superficial to the Triquetrium

c. Incorrect. These tendons are in the 5th and 4th compartments

d. Correct. Dorsal ganglion cysts typically occur at the scapholunate interval. Therefore, they would compress into the tendons running through the 3rd and 4th compartments

5. a. CT scan

ADDITIONAL EXPLANATION

a. Correct. CT scan is the imaging technique of choice for verifying scaphoid fracture union. This is typically done at 8 weeks post-op.

6. b. Hook of Hamate fracture

ADDITIONAL EXPLANATION

a. Incorrect. Ganglion cysts typically occur at the scapholunate interspace. This patient has tenderness to palpation distal to this region. Also, Ganglion cysts are of an insidious nature, whereas this patient had a definite mechanism of injury

b. Correct. The hook of the Hamate is located 1-2cm distal and radial to the pisiform bone and is commonly injured during indirect trauma involving holding a racket or a club. Pain with gripping (riding a bike, steering his car) is a common exacerbating symptom. Pain with resisted 4th and 5th digit DIP flexion occurs because the Flexor Digitorum Profundus tendon lies superficial to the Hamate. Pain with ulnar deviation occurs because the Flexor Carpi Ulnaris muscle attaches to the hook of the Hamate (as well as the pisiform and the base of the 5th metacarpal). Traumatic fractures to his area have a high non-union rate

c. Incorrect. The Trapezium is located on the radial aspect of the wrist.

d. Incorrect. A sprain of the 5th CMC joint would not cause pain with resisted 4th digit DIP flexion.

7. b. Hook of Hamate fractures are unlikely to show up on AP and lateral radiographs

ADDITIONAL EXPLANATION

a. Incorrect. Radiographs will reveal ganglion cysts

b. Correct. AP and lateral radiographs have very poor diagnostic value for detecting hook of Hamate fractures. Radiographs taken with a carpal tunnel view have higher specificity, however, CT scans are the gold standard for this pathology

c. Incorrect. Fractures to the Trapezium will show up on AP and lateral radiographs

d. Incorrect. While it is true that injuries to ligaments are not revealed on radiographs, this patient did not have a 5th CMC sprain

8. d. Triangular Fibrocartilage Complex (TFCC) tear

ADDITIONAL EXPLANATION

- a. Incorrect. The mechanism of injury (forced radial deviation) is consistent with this injury. However, the patient had tests positive for TFCC pathology.
- b. Incorrect. Lunotriquetral shearing was negative. However, the examiner must always rule out Lunotriquetral pathology with trauma to the ulnar side of the wrist.
- c. Incorrect. The scaphoid is located on the radial side of the wrist.
- d. Correct. TFCC tears commonly occur with FOOSH, repetitive axial loading, and with distraction forces at the ulnar wrist (forced radial deviation). Exacerbating factors include gripping (holding screwdriver and wrench), forearm rotation (using a screwdriver or wrench) and ulnar deviation (hand-tightening a bolt or screw). The patient's ability to reproduce his pain and a click with wrist flexion and extension while maintaining the wrist in ulnar deviation is synonymous with the TFCC Grind test. The Press Test is also diagnostic of TFCC pathology. Patients will also have tenderness in the area of the TFCC (distal Ulnocarpal joint)

9. c. Patient sits in a chair and grasps the sides of the seat with each hand and pushes themselves up off the chair. Ulnar sided wrist pain is a positive sign

ADDITIONAL EXPLANATION

- a. Incorrect. This is Phalen's test
- b. Incorrect. This is a test for ECU subluxation instability
- c. Correct.
- d. Incorrect. This is the Catch Up Clunk test for CIND (carpal instability non-dissociative)

10. a. Extra-articular distal radius fracture with dorsal angulation, displacement, and shortening of the fracture

- a. Correct.
- b. Incorrect. This is a Smith's fracture – also known as a Reverse Colles' fracture
- c. Incorrect. This is a Barton's fracture
- d. Incorrect. This is also a Barton's fracture. They can be displaced either dorsally or volarly

11. b. Boxer's fracture

ADDITIONAL EXPLANATION

- a. Incorrect. The patient would have tenderness over the base of the 4th phalanx, not the metacarpal. Also, there would be no decrease in 4th metacarpal height
- b. Correct. Boxer's fractures are common "punching" injuries that involved dorsal swelling of the hand over the fracture site, loss of PIP and MCP extension, and diminished grip strength (this is because the majority of grip strength comes from the ulnar side of the hand). Decreased metacarpal height is also a common finding. Prognosis for conservative treatment is >90% success rate.
- c. Incorrect. There would be no decreased metacarpal height and ROM and grip strength would be near normal. This is an important differential diagnosis for a Boxer's fracture
- d. Incorrect. The tenderness would not be over the distal shaft of the 4th metacarpal and there would be a loss of motion at the MCP in both flexion and extension.

12. b. Distal aspect of the digit was pointed away from the scaphoid

ADDITIONAL EXPLANATION

- a. Incorrect. This is the normal orientation of the digits
- b. Correct. This is indicative of a rotational misalignment. This is even more severe if the distal digit overlaps with the adjacent finger. Every 1.5cm of overlap equals 5° of rotational deformity. Rotational misalignments require immediate orthopedic consultation.
- c. Incorrect.
- d. Incorrect.

13. a. Carpal tunnel syndrome

ADDITIONAL EXPLANATION

- a. Correct. Carpal tunnel syndrome is the most common peripheral neuropathy, affecting 1% of the general population. 83% of patients are >40 years old (as this patient is) and it is twice as common in females as it is in males. Common clinical presentations include hand and finger pain, numbness, and/or paresthesias in a median nerve distribution that is often relieved by “shaking” or massaging the hand. Symptoms often occur at night. Phalen’s test and Tinel’s signs are not diagnostic. Furthermore, this patient recently (one month prior to symptoms onset) began using a laptop computer at home instead of her desktop model at work. Changes in ergonomics typically go hand in hand (pardon the pun) with carpal tunnel syndrome. Most notable is she is positive on 5 of 5 clinical predictors for carpal tunnel syndrome (Wainner) which increased her pre-test probability from 34% to 90%.
- b. Incorrect. This patient has 0 of 4 predictors present for the CPR for CR.
- c. Incorrect. This would present with pain in the proximal forearm near the common extensor tendon
- d. Incorrect. Patient had a negative Roos test and would have presented with symptoms proximal to the wrist as well.

14. b. No

ADDITIONAL EXPLANATION

- a. Incorrect. EMG studies are typically not required for carpal tunnel syndrome unless the patient’s clinical presentation is ambiguous or the examiner suspects other neuropathies. In this case, the presence of other neuropathies is not suspect as the patient reported she did not have diabetes, hypothyroidism, and is not an alcoholic (Patients with these co-morbidities are more predisposed to peripheral neuropathies)
- b. Correct. The patient’s clinical presentation is straightforward so no EMG would be required.

15. a. First dorsal interossei (ulnar)

ADDITIONAL EXPLANATION

- a. Correct. The FDI abducts the 2nd metacarpal
- b. Incorrect. The lumbricals flex the MCP and extend the PIP joints
- c. Incorrect. The flexor pollicis longus will be used to compensate for ulnar nerve injury involving the FDI and adductor pollicis
- d. Incorrect. The FDP flexes the DIP. It is assessed with the tip-to-tip test between the 2nd and 1st digits to assess AIN pathology

16. a. Abductor Pollicis Brevis & 1st Lumbrical

ADDITIONAL EXPLANATION

- a. Correct
- b. Incorrect. Adductor pollicis (ulnar) & 2nd lumbricals (median)
- c. Incorrect. FPB (half ulnar, half median) & 1st dorsal interossei (ulnar)
- d. Incorrect. Opponens Pollicis (median) & 2nd dorsal interossei (ulnar)

17. a. Boutonniere deformity & splinting/exercise

ADDITIONAL EXPLANATION

- a. Correct. This deformity typically respond well to splinting and exercise
- b. Incorrect. Boutonniere deformities rarely require surgical intervention
- c. Incorrect. Swan-neck deformities present with the DIP flexed, PIP hyperextended. These do not typically respond well to splinting and exercise.
- d. Incorrect.

18. A. Correct. Dorsal angulation, dorsal displacement, extra-articular

ADDITIONAL EXPLANATION

- B. Incorrect. This is a Smith’s (reverse Colles’) fracture – note the volar angulation/displacement. It is also extra-articular.
- C. Incorrect. This is a Barton’s fracture. It is intra-articular and can be either volarly or dorsally displaced.