SAMPLE QUESTION ANSWERS THE ELBOW

1. d. Ulnar Nerve

Additional Explanation

a. Incorrect. Compression of the AIN would cause weakness of the Flexor Pollicus Longus and the lateral half of the Flexor Digitorum Profundus. This would result in an extension deformity of the IP of the thumb and the DIP of the index finger.
b. Incorrect. Compression to the PIN would cause pain in the proximal extensors and pain with resisted supination.
c. Incorrect. Radial nerve compression would cause pain at the proximal extensor muscles at the lateral elbow, but would not result in (+) Wartenberg's and Froment's signs.
d. Correct. Compression of the Ulnar nerve

2. a. Ability to adduct the 5th digit

Additional Explanation

a. Correct. The patient places their hand on a table and the examiner passively spreads the fingers apart. The patient is then asked to bring the fingers together. Inability to adduct the 5th digit is positive for ulnar nerve injury
b. Incorrect. Abductor Pollicus weakness can be assess by Froment's sign
c. Incorrect. This is assessed by Tinel's sign at the Cubital Tunnel
d. Incorrect. Pinch deformity is a sign of Anterior Interosseous nerve injury due to weakness/paralysis of the Flexor Pollicus Longus and Flexor Digitorum Profundus.

3. b. Adductor Pollicus weakness

Additional Explanation

a. Incorrect. This is assessed by Wartenberg's sign.
b. Correct. The patient grasps a piece of paper between their thumb and index finger and the examiner attempts to pull the paper away. (+) for weakness of Adductor Pollicus.
c. Incorrect. This is assessed by Tinel's sign at the Cubital Tunnel
d. Incorrect. Pinch deformity is a sign of Anterior Interosseous nerve injury due to weakness/paralysis of the Flexor Pollicus Longus and Flexor Digitorum Profundus.

4. a. Biceps Brachii

5. d. Pronator Teres syndrome

Additional Explanation

a. Incorrect. This is very similar to Pronator Teres syndrome but the distinguishing feature of AIN entrapment is a lack of sensory loss/symptoms. This patient had paresthesias extending down into his 1st-3rd fingers therefore this is not AIN entrapment. AIN entrapment will have weakness/paralysis of Flexor Pollicus Longus, Flexor Digitorum Profundus (lateral half), and the Pronator Quadratus (often).
b. Incorrect. The patient has motor loss and paresthesias in a Median nerve distribution. MMT of biceps brachii was strong with a reproduction of symptoms. This is caused by the bicepital aponeurosis compressing the median nerve during resisted biceps activity. Patients with bicepital tendonitis would typically present with decreased strength due to pain. This patient's biceps MMT was strong.
c. Incorrect. The PIN comes off of the Radial nerve. This patient did not have any symptoms in a Radial nerve distribution.
d. Correct. The median nerve is compressed between the two heads of the Pronator Teres muscle with weakness of muscles innervated by the median nerve BELOW the Pronator Teres. This was differentiated by assessing resisted pronation with the elbow flexed to 90° (in which the pronator teres has a minimal contribution to pronation) and with the elbow extended (in which pronator teres is the primary force producer). Also, the difference between Pronator Teres syndrome and AIN entrapment is Pronator Teres syndrome has a sensory component (exacerbated by activity) whereas AIN entrapment does not. The patient had reproduction of symptoms with resisted 3d digit PIP flexion because the Flexor Digitorum Superficialis compresses the median nerve during this maneuver).

6. c. Flexor Digitorum Superficialis compresses the median nerve

7. a. Flexor Pollicus Longus, Pronator Quadratus, Flexor Digitorum Profundus (lateral half)

Additional Explanation

b. Incorrect. Flexor Carpi Ulnaris is innervated by the Ulnar nerve
c. Incorrect. Pronator Teres is innervated by the Median nerve
d. Incorrect. Median nerve

8. c. First Dorsal Interrosei

Additional Explanation

a. Incorrect. APB is innervated by median nerve, typically compromised at carpal tunnel
b. Incorrect. EDM is innervated by the posterior interosseus nerve (radial)
c. Correct. The FDI is the last muscle innervated by the ulnar nerve, however it's fibers have a propensity to be most medial as the ulnar nerve crosses the elbow and therefore compressed at the cubital tunnel.
d. Incorrect. Innervated by the median nerve and very difficult to isolate

9. c. Flexor Digitorum Superficialis, Flexor Digitorum Profundus, Flexor Policus Longus tendons; Median nerve

Additional Explanation

a. Incorrect. The FCR tendon lies radial to the carpal tunnel
b. Incorrect. The FCU accompanies the ulnar nerve
c. Correct.
d. Incorrect. The palmaris longus tendon lies superficial to the carpal tunnel.

10. c. Lateral Antebrachial Cutaneus Nerve

Additional Explanation

a. Incorrect. The AIN is a motor-only branch of the median nerve
b. Incorrect. The DUC innervates the dorsal aspect of the ulnar 1/3 of the hand
c. Correct.
d. Incorrect. The superficial sensory branch of the radial nerve innervates the radial 2/3's of the dorsum of the hand

11. A. Mobilization with Movement

Additional Explanation

A. Correct: According Herd & Meserve's systematic review (2008) MWM demonstrates efficacy in the immediate, short term (6 wks) and long term (3 months).
B. Incorrect
C. Incorrect. Vicenzino published in 2003 that demonstrated pain free grip strength but the sample size was small
D. Incorrect.

12. C. 93%

Additional Explanation

A. Incorrect. This is the pre-test probability of success
B. Incorrect. This is the post-test probability of success with 1 of 3 clinical predictors present.
C. Correct. According to Vicenzino (Man Ther 2008) this pt meets 2 of 3 clinical predictors for success with MWM treatment.
D. Incorrect. This is the post-test probability of success with 3 of 3 clinical predictors present.

13. A. Elbow sleeve orthosis at proximal forarm

Additional Explanation

A. Correct. Jafarian (2009) demonstrated this strap to be superior to placebo and a wrist spint, but equal to the Elbow Strap orthosis. . However, Takasaki (2008) demonstrated the optimal placement of a counter-force orthosis was 80% of the length of the forarm, placed proximally.
B. Incorrect. Although Jafarian (2009) demonstrated this orthosis to be equal to

the Elbow Sleeve orthosis, the placement is too low on the forearm according to the works of Takasaki (2008).
C. Incorrect
D. Incorrect