

STRUCTURAL BASIS OF MEDICAL PRACTICE
EXAM #5 & 6
OCTOBER 8, 2004

PART 1. Select the BEST response. (Place answer in the space provided.)
(2 points each)

- _____ 1. Compression of or within the carpal tunnel will produce which of the following?
- A. numbness or loss of sensation on the palmar aspect of the little finger
 - B. numbness or loss of sensation on the dorsum of the radial side of the hand
 - C. reduced power in adduction of the thumb
 - D. reduced sensation over the palmar aspect of the radial three digits and reduced power of thumb flexion and thumb opposition
- _____ 2. In the palm (ventral side of hand):
- A. The distal synovial tendon sheath normally communicates with the mid palmar space.
 - B. The mid palmar and thenar spaces are separated by a connective tissue septum attached to third metacarpal.
 - C. The lumbrical muscles attach to the metacarpals and the radial side of the 2-5th digits.
 - D. The long flexor digits of the fingers 1 and 2 pass dorsal to the body of the adductor pollicis muscles.
- _____ 3. Damage to the radial nerve along the spiral groove of the humerus could result in:
- A. wrist drop
 - B. the inability to extend the arm
 - C. an inability to adduct the thumb
 - D. an inability to abduct the thumb
 - E. loss of sensation in the skin over the thenar eminence
- _____ 4. Damage to the median nerve at the wrist could result in:
- A. loss of abduction of the four fingers
 - B. paralysis of the hypothenar muscles
 - C. loss of sensation of the thumb
 - D. loss of thumb opposition
 - E. all of the above

- _____ 5. Which of the following muscles is not innervated by the median nerve or its branches?
- A. pronator teres
 - B. flexor carpi radialis
 - C. flexor carpi ulnaris
 - D. flexor pollicis longus
 - E. pronator quadratus
- _____ 6. Significant damage to the C5 and C6 roots of the brachial plexus produces Erb-Duchenne paralysis, and destroys most of the fibers of the following muscles except:
- A. deltoid
 - B. biceps brachii
 - C. supraspinatus
 - D. triceps brachii
 - E. infraspinatus
- _____ 7. If the ulnar nerve is transected (i.e., cut clean through) at the elbow, a person will be unable to:
- A. grasp an object with the thumb and index fingers
 - B. feel objects with the tip of the index finger
 - C. flex the wrist
 - D. hold a piece of paper between the extended little and ring fingers
 - E. all of the above
- _____ 8. In shoulder dislocations, the head of the humerus is commonly displaced
- A. anteriorly
 - B. posteriorly
 - C. laterally
 - D. inferiorly
 - E. superiorly
- _____ 9. Which of the following joints represent the only point of bony connection between the trunk and the upper limb?
- A. sternoclavicular
 - B. acromioclavicular
 - C. scapulohumeral
 - D. costocervical
 - E. sternocostal

- _____ 10. The carpal tunnel is formed by the concave anterior surface of the carpal bones and the _____.
- A. palmar aponeurosis
 - B. tendon of palmaris longus
 - C. flexor retinaculum
 - D. medial collateral ligament of the wrist joint
 - E. extensor retinaculum
- _____ 11. Which ligament is damaged in very severe 'shoulder separations?'
- A. acromioclavicular
 - B. costoclavicular ligament
 - C. coracoclavicular ligament
 - D. sternoclavicular ligament
 - E. triangular ligament
- _____ 12. Damage to the nerve fibers of the posterior cord of the brachial plexus could result in:
- A. paralysis of the interossei muscles of the hand
 - B. paralysis of biceps brachii
 - C. paralysis of brachialis
 - D. paralysis of deltoid
 - E. none of the above
- _____ 13. All the following statements concerning the axillary artery are correct except:
- A. The second part of the axillary artery lies anterior to the pectoralis minor.
 - B. The thoracoacromial trunk and the lateral thoracic artery are branches of the second part of the axillary artery.
 - C. The axillary begins at the lateral border of the first rib.
 - D. A branch of the third part of the axillary artery runs through the quadrangular space.
 - E. The axillary artery ends at the lower border of teres major.
- _____ 14. Injury to the posterior cord of the brachial plexus involves weakness or inability to produce the following except:
- A. elbow extension
 - B. wrist extension
 - C. shoulder abduction and flexion
 - D. forearm pronation
 - E. thumb extension

- _____ 15. An elderly lady falls on her left hand and comes to see the physician because of pain in the left wrist. Physical examination reveals pain upon deep palpation of the anatomical snuffbox. Which carpal bone is likely to be fractured?
- A. lunate
 - B. trapezium
 - C. scaphoid
 - D. trapezoid
 - E. hamate
- _____ 16. All of the following statements concerning the brachial plexus are true except:
- A. The cords originate from divisions.
 - B. The C5 and C6 roots join to form the upper trunk
 - C. The cords of the plexus have a relationship to the second part of the axillary artery that is indicated by their names.
 - D. The roots, trunks, and divisions are located in the axillary.
 - E. Injury to the lower trunk can produce "winged scapula."
- _____ 17. The radial artery is described correctly as:
- A. arising as the median terminal of the brachial artery.
 - B. giving rise to the common interosseous artery.
 - C. giving rise to all four common digital arteries.
 - D. giving rise to the superficial palmar artery.
 - E. providing the major components of the superficial palmar arch.
- _____ 18. Which of the following statements correctly describes the arteries of the hand?
- A. The princep pollicis artery arises from the ulnar artery.
 - B. The deep palmar arch branches do not connect with common digital arteries.
 - C. Proper digital arteries run along the radial side of the fingers.
 - D. The ulnar artery is the source of the superficial palmar arch.
 - E. Palmar metacarpal arteries arise from superficial palmar arch.
- _____ 19. All of the following statements are true of the wrist joint except :
- A. the radius articulates with the scaphoid, lunate, and triquetrum.
 - B. the articular disk of the distal ulna articulates with the proximal row of carpals.
 - C. the radiocarpal joint is a ball and socket type of synovial joint.
 - D. an articular disk is present between the radius and ulna.
 - E. Articular nerves are derived from the anterior interosseous nerve.

- _____ 20. All the following statements concerning the serratus anterior are true except it:
- A. is attached to the lateral border of the scapula.
 - B. protracts the scapula.
 - C. may be paralyzed by pressure on the rib cage in the axilla.
 - D. is supplied from the roots of the brachial plexus.
 - E. is involved in shoulder abduction beyond about 90°.
- _____ 21. Statements concerning the hand are true except:
- A. The radial nerve supplies the dorsal skin over the first dorsal interosseous muscle.
 - B. The radial nerve supplies the first dorsal interosseous muscle.
 - C. The dermatome over the thumb is usually C6.
 - D. The first metacarpal articulates with the trapezium.
- _____ 22. The following statements concerning the hand are true except:
- A. A dislocated lunate may damage the median nerve.
 - B. Lumbricals flex the metacarpal phalangeal joints.
 - C. The deep palmar arch is accompanied by the deep branch of the ulnar nerve.
 - D. The pisiform bone is palpable on the lateral (radial) side of the wrist.
- _____ 23. The following statements are true concerning the lumbricals except they:
- A. are attached to the tendons of flexor digitorum profundus.
 - B. are supplied by both median and ulnar nerves.
 - C. flex the metacarpophalangeal joints.
 - D. extend the interphalangeal joints.
- _____ 24. The most lateral tendon passing deep to the extensor retinaculum at the wrist is:
- A. extensor carpi radialis longus
 - B. abductor pollicis longus
 - C. extensor pollicis longus
 - D. extensor digitorum
 - E. extensor indicis
- _____ 25. The axillary artery begins at the _____ and is a continuation of the _____ artery.
- A. first rib, brachiocephalic artery
 - B. acromion process, brachiocephalic artery
 - C. scapula, brachial artery
 - D. clavicle, subclavian artery
 - E. first rib, subclavian artery

- _____ 26. A complete lesion of the upper trunk of the brachial plexus results in damage to nerve fibers found in all of the following except the:
- A. radial nerve
 - B. lateral pectoral nerve
 - C. recurrent branch of the median nerve
 - D. musculocutaneous nerve
 - E. axillary nerve
- _____ 27. A penetrating knife wound to the posterior shoulder in the quadrangular space would damage the axillary nerve and the _____.
- A. lateral thoracic artery
 - B. subscapular artery
 - C. posterior humeral circumflex artery
 - D. superior thoracic artery
 - E. anterior humeral circumflex artery
- _____ 28. Which of the carpal bones is not really in the "wrist?"
- A. capitate
 - B. hamate
 - C. lunate
 - D. triquetrum
 - E. pisiform

PART II.

1. Define the boundaries and contents of the cubital fossa. (6 Points)

Base:

Lateral Border:

Medial Border:

Floor:

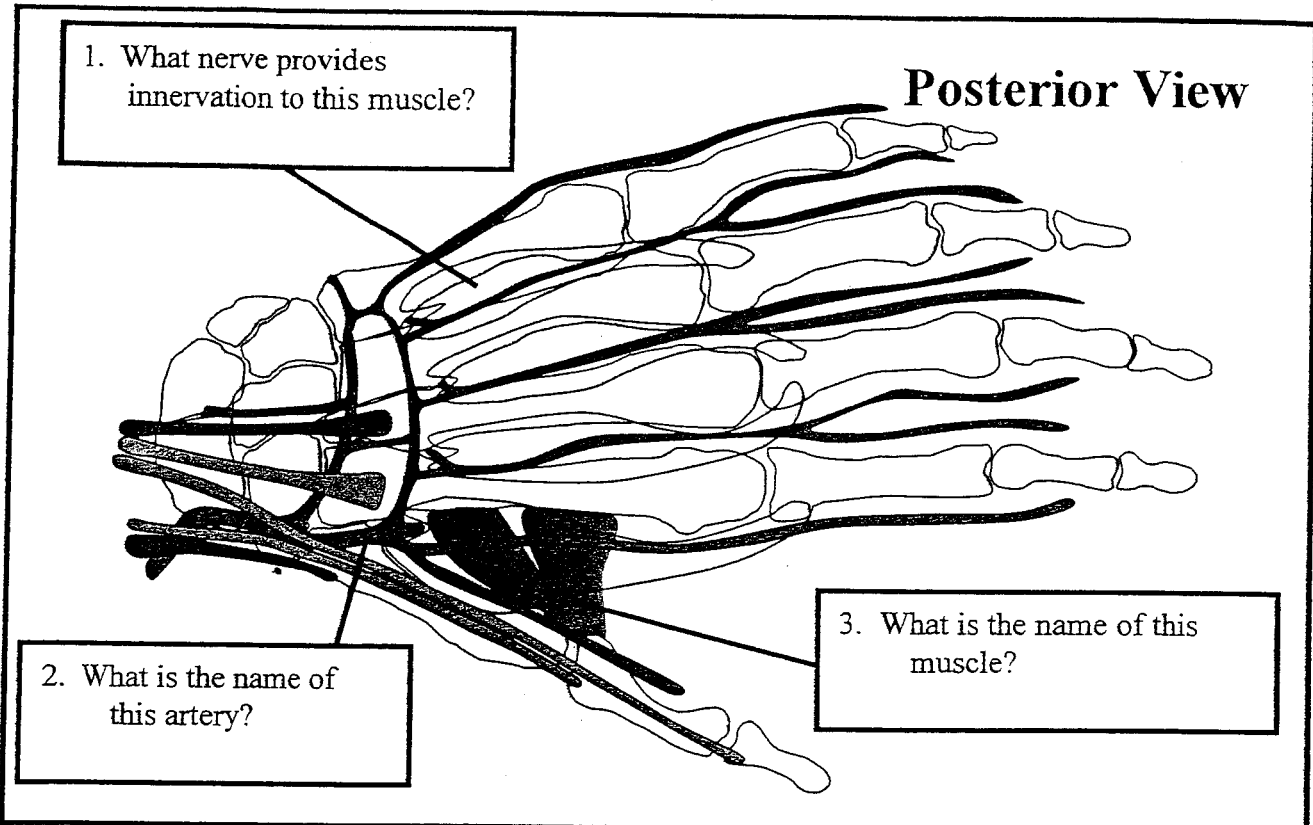
Roof:

Contents:

2. Compose a list of at least 14 muscles that attach (insert or originate) to the scapula. (7 Points)

3. Name three arteries that feed into the dorsal carpal rete (1.5 Points)

4. What structures are contained within the carpal tunnel (4 Points)



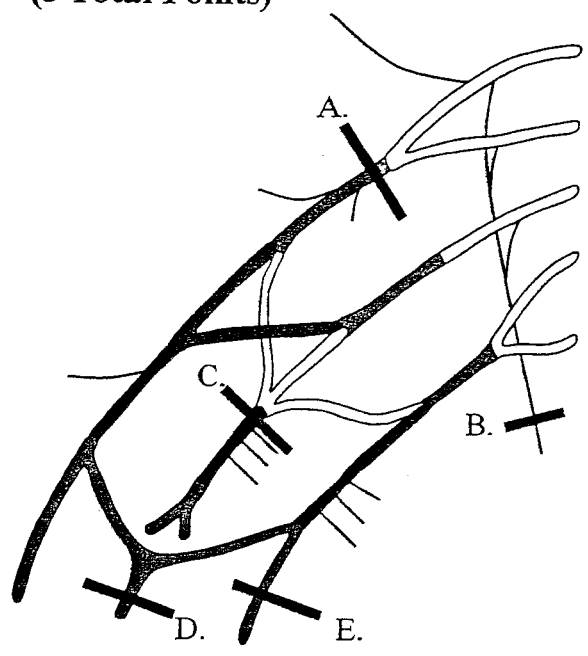
1. What nerve provides innervation to this muscle?

Posterior View

2. What is the name of this artery?

3. What is the name of this muscle?

Place the corresponding letter on the line using the drawing (5 Total Points)



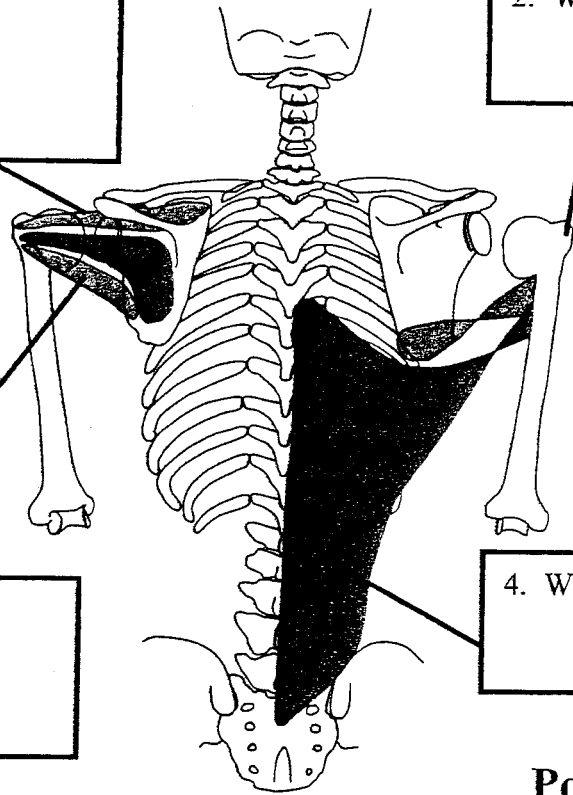
1. _____ Injury here results in results in an arm which is found in a medially rotated position along with a characteristic “waiter’s tip” hand
2. _____ Injury to this area may be caused by excessive use of crutches. Results in loss of the extensors of the arm, forearm and hand and also produces wrist drop.
3. _____ Injury to this area results in “winging of the scapula”
4. _____ Injury to this area results in loss of abduction and adduction of the fingers, flexion of the MP joints and loss of adduction of the thumb. Can be described as “claw hand”
5. _____ Injury here would result in deficits of forearm pronation loss of thenar muscle functioning

Labeling and Short Answer (10 total points)

Exam Number: _____

1. Innervation to this muscle is by what nerve?

2. What is the name of this bony landmark?



3. What is the action of this muscle?

4. What is the innervation to this muscle?

Posterior View

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

**Anterior View
of the Elbow**

