

1

Upper Limb

QUESTIONS

- 1.1** Which of the following statements best describes the scapula?
- a. It usually overlies the 2nd to 9th ribs.
 - b. The spine continues laterally as the coracoid process.
 - c. The suprascapular notch is found on its spine.
 - d. It provides attachment for both heads of biceps.
 - e. Most fractures involve the body.
- 1.2** Which statement is the best ending for the following sentence? When considering the humerus, it should be noted that the:
- a. Lesser tubercle has three facets.
 - b. Bicipital groove separates the greater and lesser tubercles.
 - c. Surgical neck separates the head from the tubercles.
 - d. Common extensor origin is the medial epicondyle.
 - e. Capitulum articulates with the ulna.
- 1.3** Which of the following statements regarding the radius and ulna is correct?
- a. Both have a styloid process at the proximal end.
 - b. Both articulate with the humerus at the elbow joint.
 - c. Both articulate with the carpal bones at the wrist joint.
 - d. Direct injury usually produces transverse fractures of both bones in the distal third.
 - e. Fracture is most commonly of the Smith's type.

- 1.4** Which of these statements best describes the carpus?
- a. It is markedly concave from side to side anteriorly.
 - b. The most commonly fractured bone is the lunate.
 - c. The scaphoid articulates with the 1st metacarpal.
 - d. Fracture of the hamate may result in damage to the median nerve.
 - e. The pisiform is usually the first bone to begin ossification.
- 1.5** Which statement most appropriately describes the female breast?
- a. It overlies the 3rd to 8th ribs.
 - b. It consists of 2–3 lobules.
 - c. It has suspensory ligaments, which tether the dermis to the fascia of the chest wall.
 - d. The retro-mammary space lies deep to pectoralis major.
 - e. The areolar glands are responsible for lactation.
- 1.6** Which of these statements best describes the pectoral girdle and shoulder?
- a. The clavicle ossifies in the foetus.
 - b. The clavicle most commonly fractures at the junction of the medial and middle third.
 - c. The subscapularis bursa is separate from the capsule of the shoulder joint.
 - d. The capsule of the shoulder joint communicates with the subacromial bursa.
 - e. The short head of biceps lies within the capsule of the shoulder joint.
- 1.7** Which of the following is true of the rotator cuff?
- a. Teres major is one of its four constituent muscles.
 - b. Infraspinatus is innervated by the suprascapular nerve.
 - c. Part of its action is to pull the humeral head superiorly.
 - d. Subscapularis inserts onto the greater tuberosity of the humerus.
 - e. It is deficient anteriorly.

1.8 When considering the axilla, which of the following statements is accurate?

- a. Pectoralis major and minor contribute to the anterior wall.
- b. The long thoracic nerve runs on the posterior wall.
- c. Teres minor forms the lower part of the posterior wall.
- d. The axillary artery lies anterior to the axillary sheath.
- e. The axillary nerve exits through the triangular space.

1.9 Which of these sentences best describes the elbow joint?

- a. The capitulum articulates with the head of the ulna.
- b. The capsule of the joint attaches to the radius.
- c. The annular ligament is attached to the ulna, but not to the radius.
- d. The radial nerve is a posterior relation.
- e. The valgus angle created by the joint is larger in men than in women.

1.10 Which statement correctly describes the cubital fossa?

- a. Its borders are entirely muscular.
- b. A branch of the musculocutaneous nerve is found in its floor.
- c. The median cubital vein traverses its roof.
- d. The median nerve lies lateral to the brachial artery within it.
- e. The radial nerve lies medial to the tendon of biceps within it.

ANSWERS

1.1

d. The long head of biceps takes origin from the supraglenoid tubercle and its tendon runs within the shoulder joint capsule in its own synovial sheath. The short head of biceps arises from the coracoid process via a conjoint tendon with coracobrachialis.

Explanations

- a. The scapula overlies the 2nd to 7th ribs on the posterolateral aspect of the thorax. Its medial border runs lateral, and parallel to, the spinous processes of the thoracic vertebrae.
- b. The spine continues laterally as the acromion process, which articulates with the clavicle. The spine of the scapula divides the posterior surface into a smaller supraspinous, and larger infraspinous, fossa.
- c. The suprascapular notch occurs on the superior border at the junction between its medial 2/3 and lateral 1/3. The superior transverse scapular ligament runs across this notch; the suprascapular artery runs above it and suprascapular nerve runs below.
- e. The body is rarely fractured because the majority of the scapular surface is covered by strong muscles and the bone is protected by its association with the thoracic wall. Fractures of the scapula body are therefore associated with high-energy injury, and most fractures involve the subcutaneous, more vulnerable, acromion.

1.2

b. The bicipital, or intertubercular groove separates the tubercles, and contains the long head of biceps and the attachment of latissimus dorsi.

Explanations

- a. The lesser tubercle has one facet, which provides attachment for subscapularis. The greater tubercle has three facets, which are the attachment sites of supraspinatus, infraspinatus and teres minor.

- c. The anatomical neck is formed by a groove around the head of the humerus, and separates this from the tubercles. The surgical neck lies distal to the tubercles at the proximal end of the humeral shaft, a common site for fractures.
- d. The site of the common extensor origin is the anterior aspect of the lateral epicondyle.
- e. The distal humerus has two articular surfaces: laterally the capitulum for articulation with the head of the radius and medially the trochlea for articulation with the trochlear notch of the ulna.

1.3

- b. The ulna articulates with the trochlea, and the radius with the capitulum.

Explanations

- a. Both the radius and ulna have a styloid process at the distal end. The radial styloid is larger and usually projects 1 cm distal to the ulnar styloid.
- c. The ulna does not articulate with any carpal bone, but does articulate with the triangular cartilage, the distal end of which forms part of the wrist joint.
- d. Fracture of both bones by direct trauma will usually produce transverse fractures at the same level. This would mostly occur in the middle third of the bones as this is the weakest point.
- e. A Colles fracture is the commonest form of forearm fracture and classically occurs when falling on the outstretched hand. This results in a radial fracture 2–3 cm proximal to the wrist joint. The distal fragment displaces posteriorly, radially and proximally (impaction), producing a “dinner fork” deformity. A Smith’s fracture involves volar displacement of the distal fragment and is less common.

1.4

- a. The 8 carpal bones, arranged in 2 rows of 4, form the carpus. The carpus is convex posteriorly and concave anteriorly from side to side. This shape is maintained by the shape of the bones and by the pull of the flexor retinaculum.

Explanations

- b. The most commonly fractured bone is the scaphoid. This occurs most commonly as a result of a fall onto the palm, with the hand extended and abducted. The principal blood supply of the scaphoid enters from its distal end. A fracture may therefore interrupt the blood supply to the proximal fragment, leading to avascular necrosis and consequent degenerative change.
- c. The scaphoid is one of the four proximal bones of the wrist and articulates with the radius proximally. The trapezium is the carpal bone which articulates with the 1st metacarpal.
- d. The deep branch of the ulnar nerve is closely related to the hook of the hamate, and is threatened by a hamate fracture. Decreased grip strength usually ensues.
- e. The pisiform bone is a small, pea-shaped, sesamoid bone in the tendon of the flexor carpi ulnaris. Its ossification centre usually does not appear until the age of 9–12 years. It is the last carpal bone to begin ossification.

1.5

c. The dermis is tethered to the breast ducts and the deep fascia overlying pectoralis major by fibrous strands known as the suspensory ligaments of Cooper. As these atrophy and weaken with age the breast becomes more pendulous.

Explanations

- a. The base of the adult female breast consistently overlies the 2nd to 6th ribs, from the sternal edge to the midaxillary line. The upper outer quadrant extends towards the axilla as the “axillary tail”.
- b. The breast consists of 15–20 lobules of glandular tissue, all individually drained by a corresponding lactiferous duct, which empty at the nipple via the lactiferous sinus.
- d. The retro-mammary space is located between the posterior capsule of the breast and the fascia over pectoralis major. This space is commonly exploited in the placement of implants.
- e. The areolar glands of Montgomery are modified sebaceous glands located beneath the areola and are responsible for