Upper limb injuries II

Traumatology

RHS 231

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Capsulitis

- = inflammatory lesion of the glenohumeral joint capsule leading to:

  - thickening and loss of joint volume
  - painful stiffness of the active and passive range of all shoulder movements

- Commonly known as “frozen shoulder”

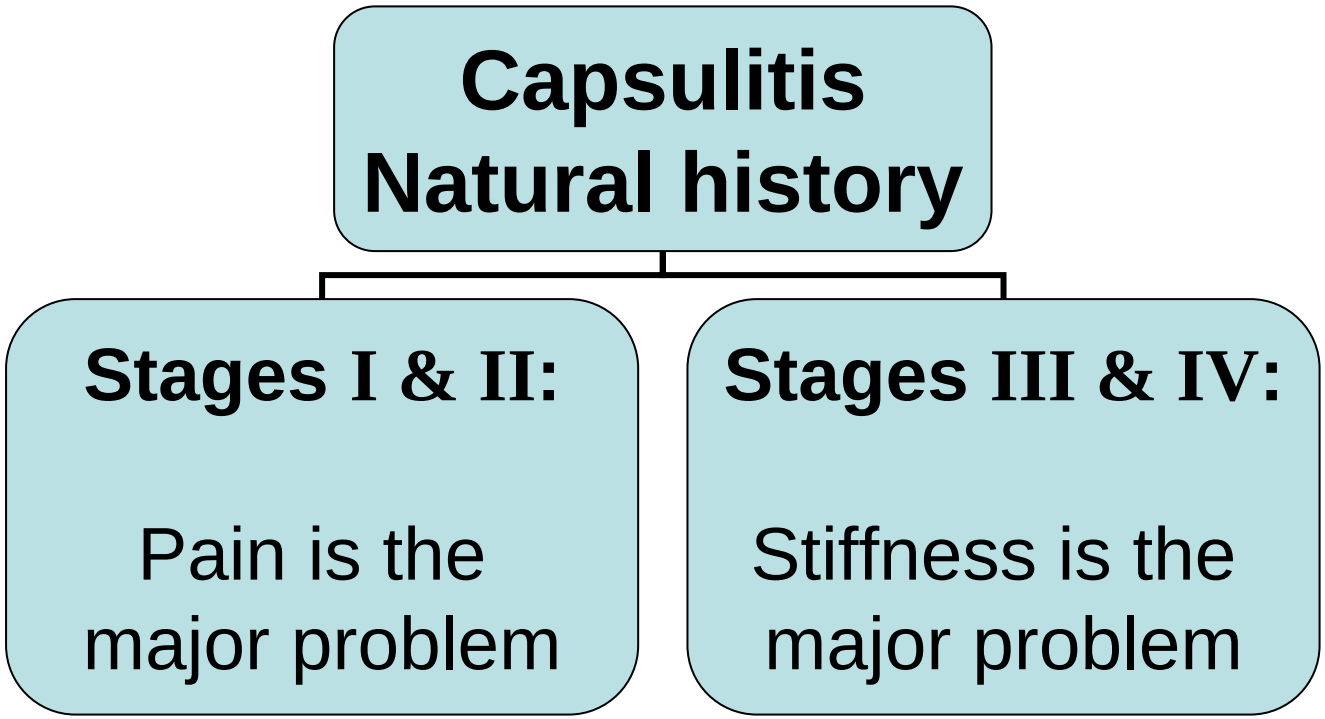
Capsulitis

- Pathology: inflammatory synovitis that progresses to thickening and retraction of the capsule

- Radiographs are normal (but essential to differentiate it from osteoarthritis)

Capsulitis

- Etiology: unknown
- Occurs most commonly in middle-aged females
- Usually, the onset is *gradual* (but may be *sudden* sometimes)


Capsulitis
Natural history
Stages I & II:
Pain is the major problem
Stages III & IV:
Stiffness is the major problem

Capsulitis

- ***Stage one:***
  - Mild synovitis over the entire joint
  - Pain in or around the glenohumeral joint, made worse by shoulder movement (especially rotation)
  - Stiffness in not noticed by the patient

Capsulitis

- ***Stage one (major signs):***

  - *Active and passive movements* are of almost full range, but pain is reproduced at the extremes of all movements
  - *Isometric tests* are strong and do not produce pain
  - *Accessory* shoulder movements at the limit of range are restricted and painful

Capsulitis

- ***Stage two:***

  - Inflamed, thickened, adhesive synovitis grows over the axillary recess onto the humerus

  - Pain becomes more intense and disturbs the patient’s sleep

Capsulitis

- ***Stage two:***

  - Most shoulder movements produce pain
  - Pain is felt deep in the shoulder and may radiate down the arm (not below the elbow)
  - Functional disability

Capsulitis

- ***Stage two (major signs):***
  - *Active and passive movements* become more limited and painful in every plane of movement
  - *Accessory movements* become more restricted (especially lateral & inferior glide)
  - Fully resisted movements remain painless

Capsulitis

- ***Stage three:***

  - Adhesive capsulitis, especially involving the axillary recess, and little synovitis

  - Little pain at rest (although pain may be felt on sudden stretching of the joint)

Capsulitis

- ***Stage three:***

  - Stiffness becomes more pronounced (due to contractures of the thickened shoulder capsule)

  - Frozen shoulder

Capsulitis

- ***Stage three (major signs):***

  - Range of active and passive movement is greatly restricted in all planes

  - Some degree of scapular movement remains so that movement at the shoulder is possible

Capsulitis

- ***Stage four:***

  - Gradual resolution of shoulder stiffness with a gradual return of shoulder mobility in some patients

Capsulitis

- Each of the first 3 stage lasts for a few weeks to 2 months
- Stage 4 starts in 4-5 months and lasts approximately 6-12 months
- The natural tendency is complete resolution (but 20% of patients may be left with some degree of shoulder stiffness)

Management of capsulitis

- Controversial
- Should be considered in relation to the four distinct stages

Management of capsulitis

Stages one & two:

- ***Rest:***
  - Stage I: rest from excessive use of the shoulder (especially at the limit of the range)
  - Stage II: rest is obtained with a sling (because the pain is usually severe)
  - Rest may increase the shoulder stiffness

Management of capsulitis

Stages one & two:

- ***Medication:***
  - analgesics
  - non-steroidal anti-inflammatory drugs
  - oral corticosteroids
  - Injection of intra-articular corticosteroids

Management of capsulitis

Stages one & two:

- ***Physical therapy:***
  - Ice to control the pain
    (but heat is usually of no benefit)
  - Exercises, message, and forcible movements are contraindicated
  - Pain relieving modalities (e.g., TENS)

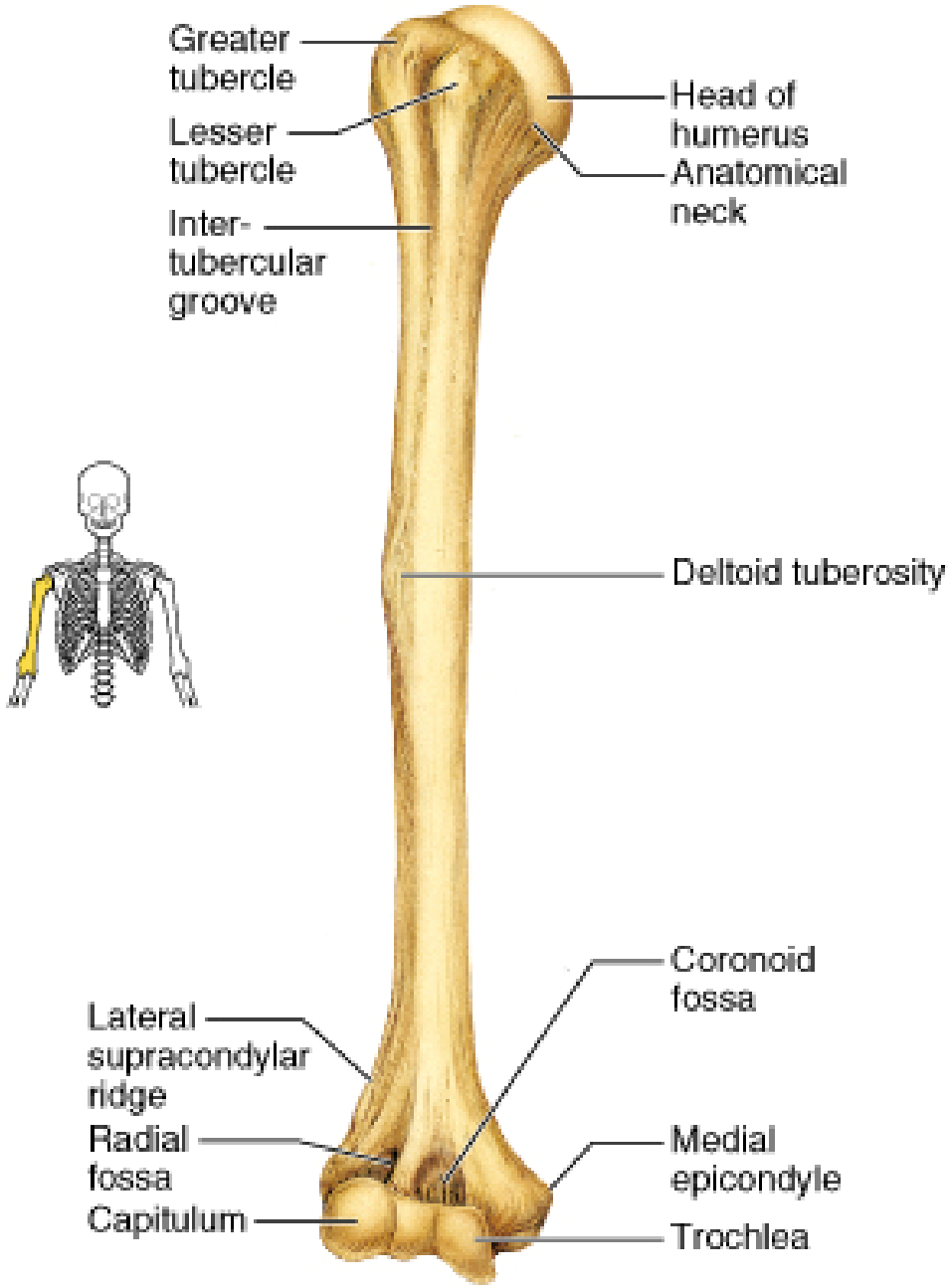
Management of capsulitis

Stages three & four:

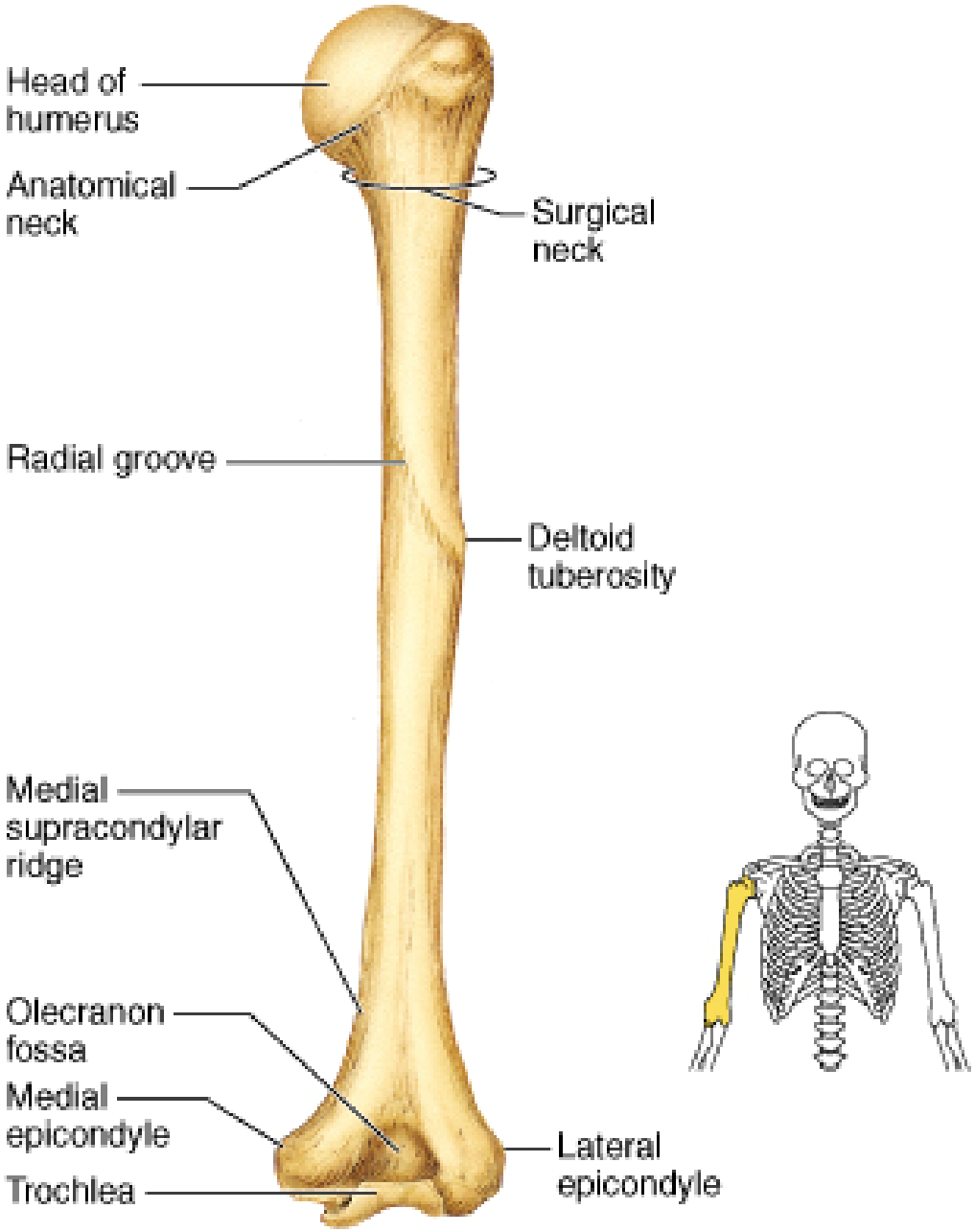
- ***Physical therapy:***
  - Aim: increase the joint range of motion
  - Mobilization techniques using physiological and accessory movement
  - Stretching
  - Isometric exercises, PNF technique, pendular exercises, active assisted exercises

Lateral epicondylitis

- Common in the dominant arm of middle-aged patients whose occupation or sports involve excessive use of the wrist or forearm pronation/supination
- More common in females than males
- Known as “Tennis elbow”



(a) Anterior view



(b) Posterior view

Lateral epicondylitis

- **Onset:**

  - May be gradual with intermittent mild ache in the elbow

  - Or sudden following a direct blow to the epicondylar region, or in tennis players following a mis-hit or change in action

Lateral epicondylitis

- **Pain:**

  - Felt originally over the lateral aspect of the elbow
  - When severe, may radiate down the forearm into the dorsum of the hand
  - Pain is made worse with wrist movements (e.g., gripping & shaking hands)

Lateral epicondylitis

- **Note:** pain in the lateral aspect of the elbow and forearm may also be caused by C7 nerve root irritation

- To differentiate it clinically: C7 nerve root irritation is usually associated with neurological signs (numbness or paresthesia)

Lateral epicondylitis

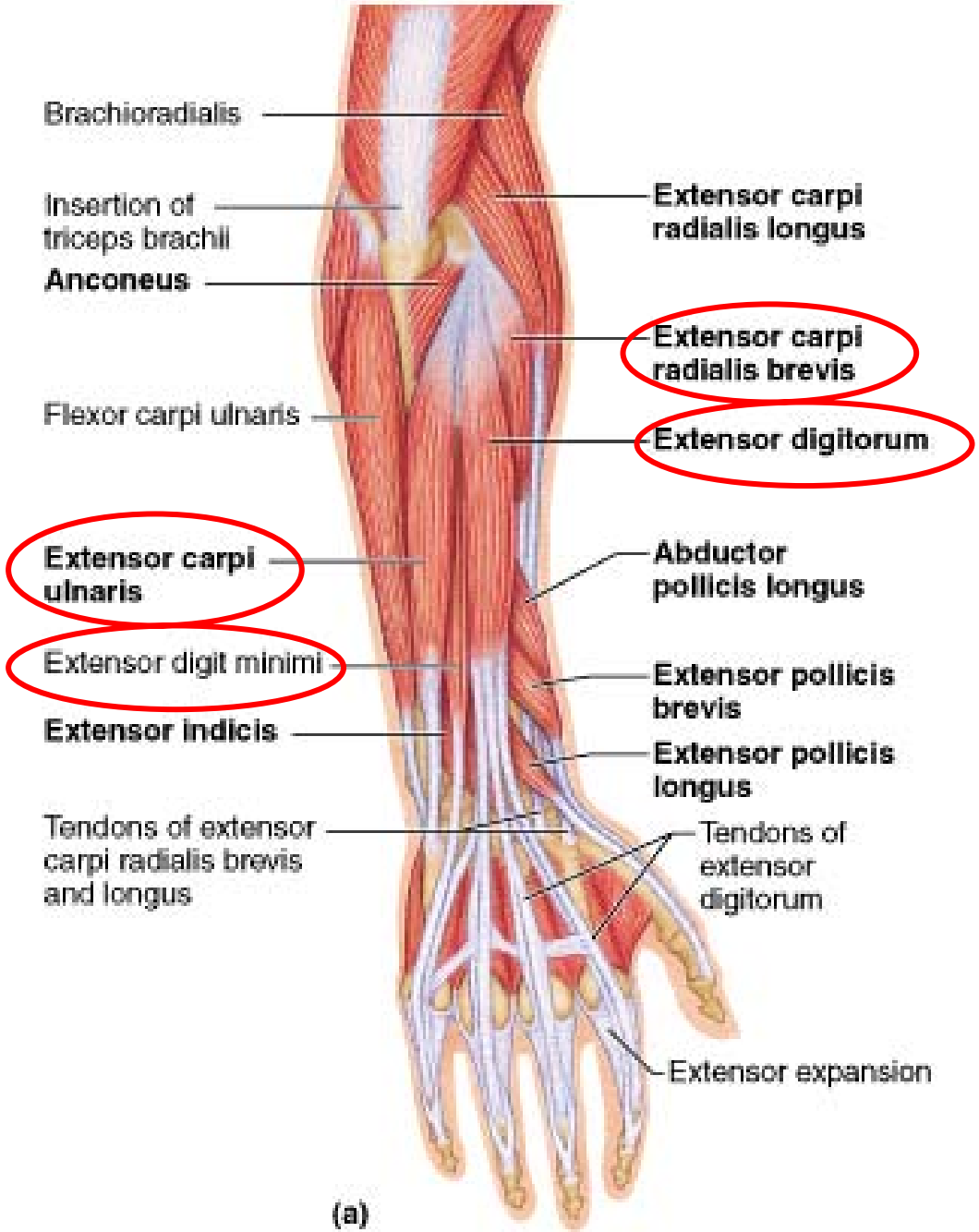
- **Major signs:**
  - Isometric contractions at the wrist produce elbow pain
    (e.g., resisted radial deviation of the wrist)
  - Resisted movements of the elbow joint itself do not reproduce pain
  - Loss of the last few degrees of passive extension (compared with the normal side)

Lateral epicondylitis

- **Major signs:**

  - Palpation localizes the site of tenderness on the lateral epicondyle

  - Elbow radiographs are usually normal for the patient's age
    (calcification may occur at the extensor region)



Medial epicondylitis

- Less common condition
- Occurs at the site of origin of the wrist flexors and the pronator of the forearm
- Known as “golfer’s elbow”
  (but may occur in people who never played golf)

Medial epicondylitis

- Occurs in middle-aged patients who are involved in sports or occupational activities that require a strong hand grip and adduction movement of the elbow

Medial epicondylitis

- **Pain:**

  - Felt felt over the medial compartment of the elbow and may radiate distally

  - Pain is made worse with wrist movements
    (especially gripping or repeated wrist flexion)

Medial epicondylitis

- **Major signs:**

  - Pain is reproduced by an isometric contraction of the wrist flexors

  - Pain can also be reproduced by resisting pronation of the forearm or stretching the flexor muscle group

Medial epicondylitis

- **Major signs:**

  - Tenderness on palpation is usually felt under the medial epicondyle

Pulled elbow

- Common in young children (less than 8 years old) who present with a painful inability to use the arm
- Peak incidence: between 2-3 years old

Pulled elbow

- Caused by sublaxation of the head of radius after traction injury (sudden traction applied to the child’s arm which is in extended and pronated position)

- Completely and rapidly cured by manipulation

Pulled elbow

- When traction is applied → transverse tear in the annular ligament in the distal attachment to the neck of radius

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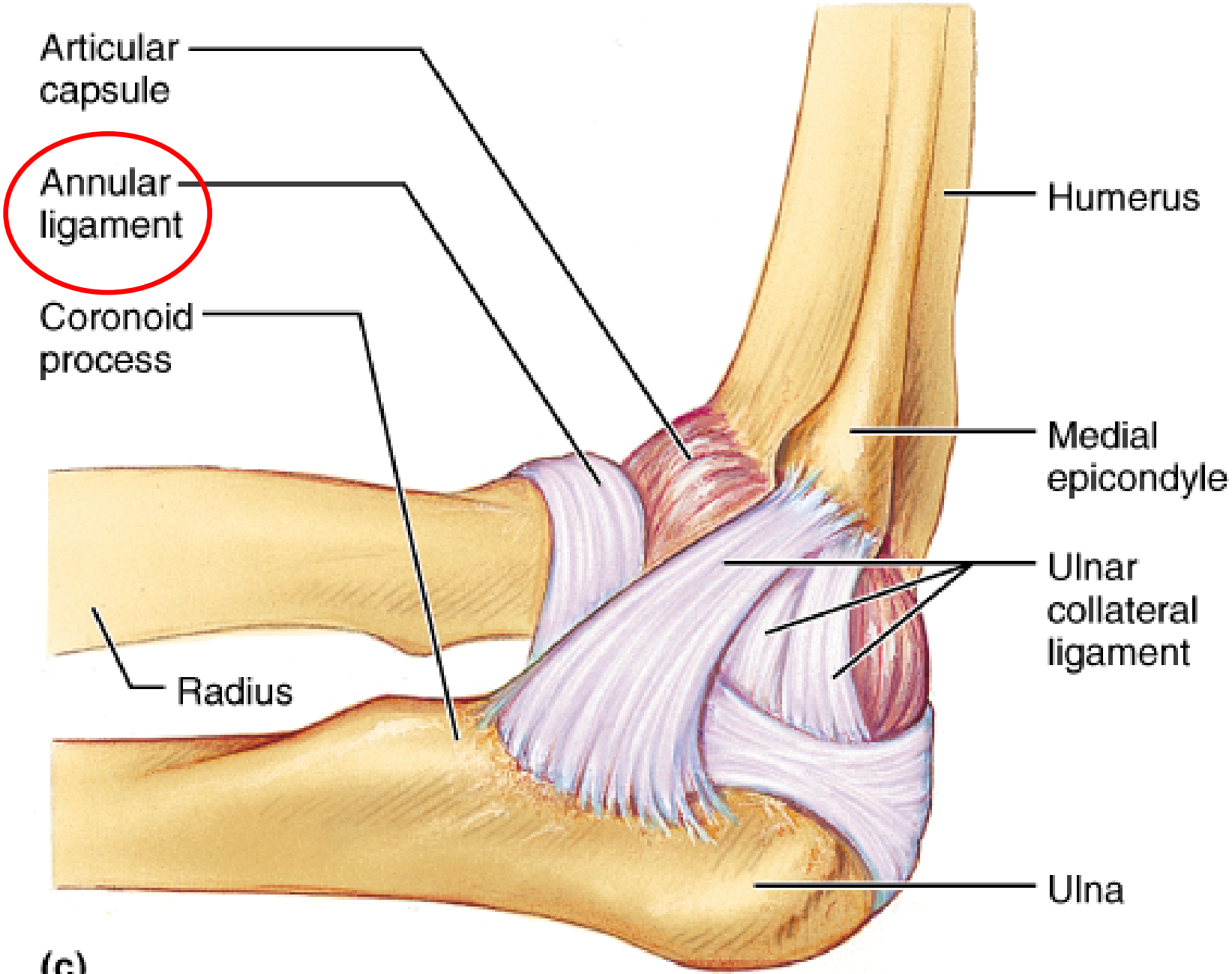
  the head of radius can then easily slip through the tear → the annular ligament becomes detached and interposed between the head of radius and capitulum



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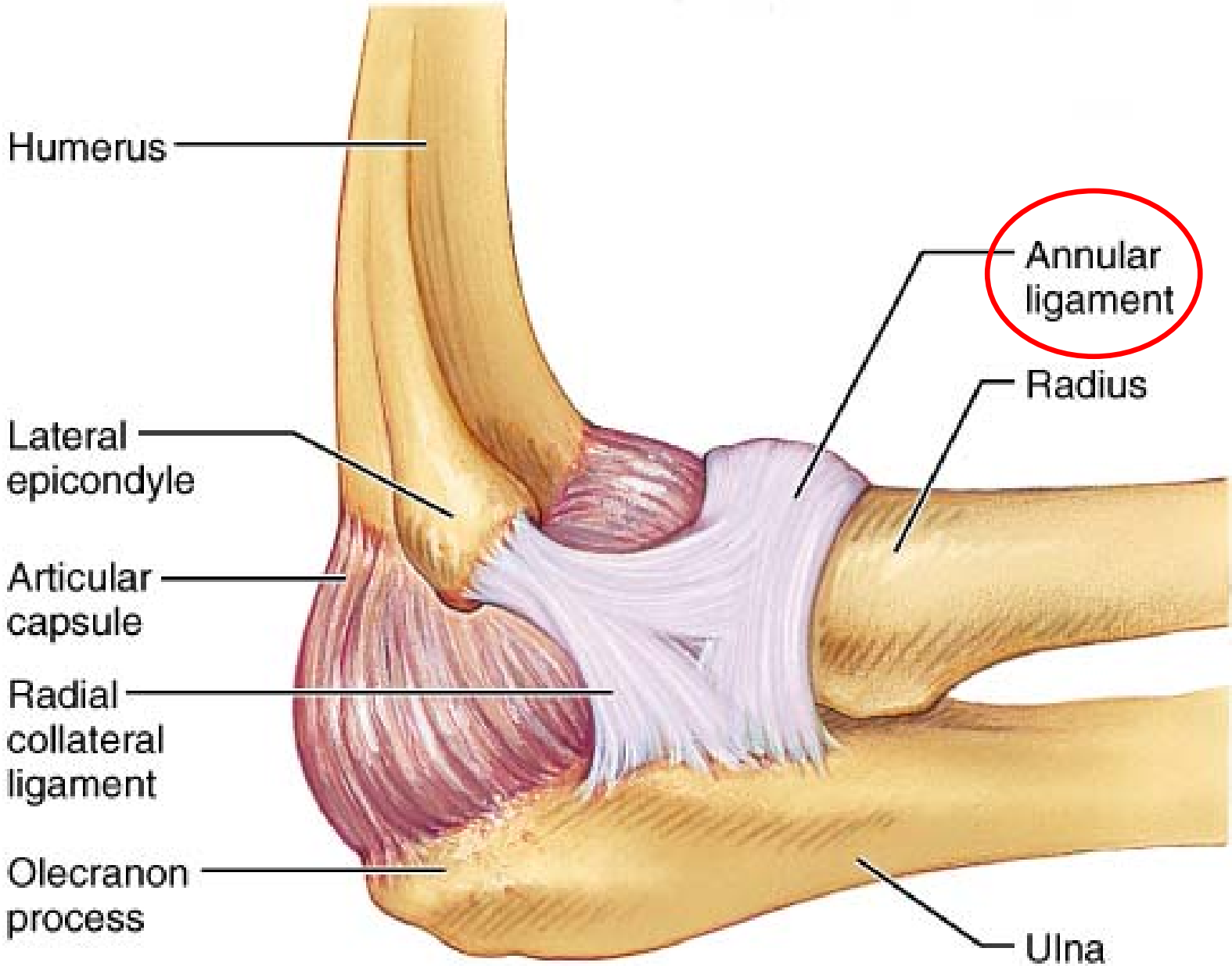

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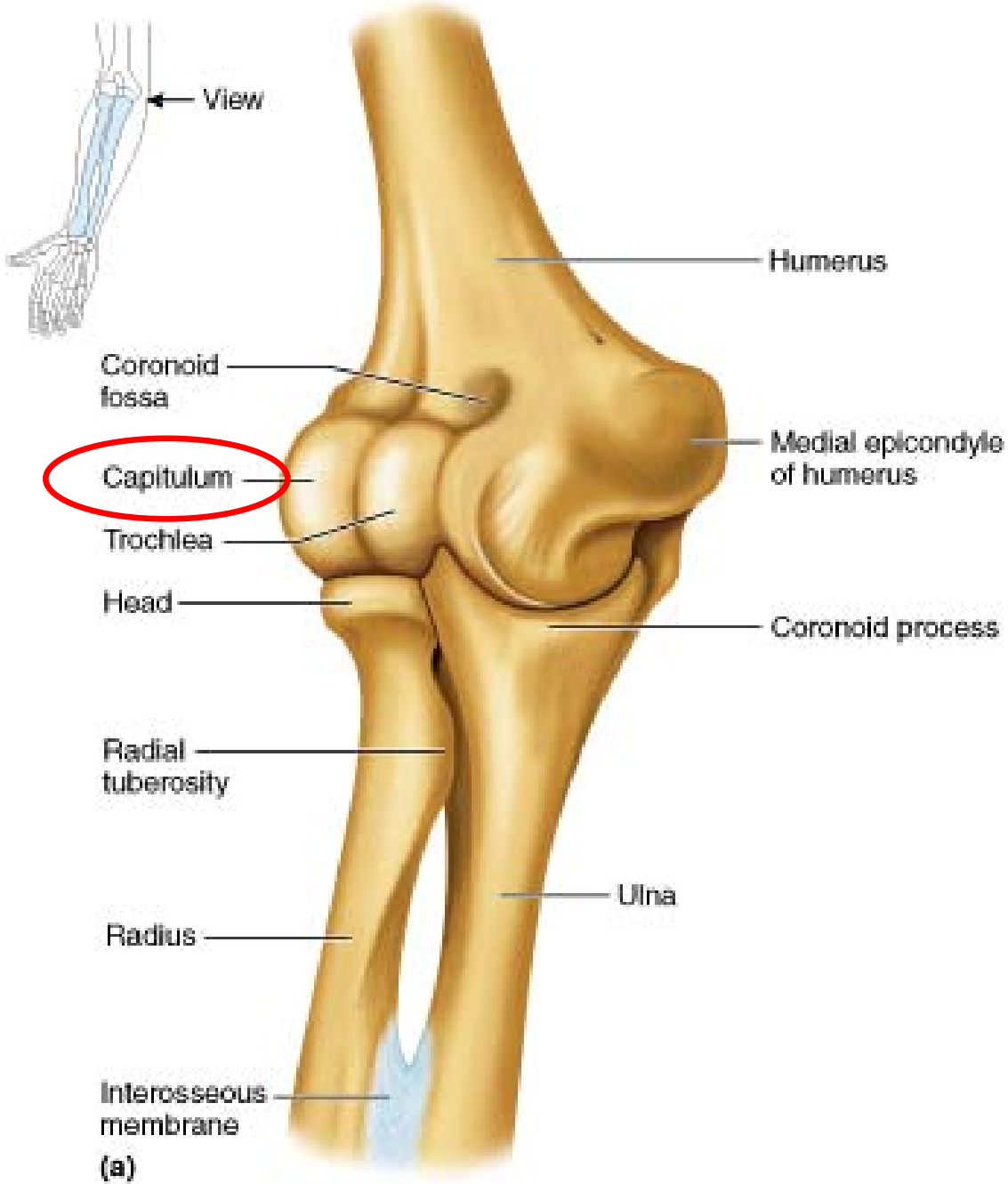

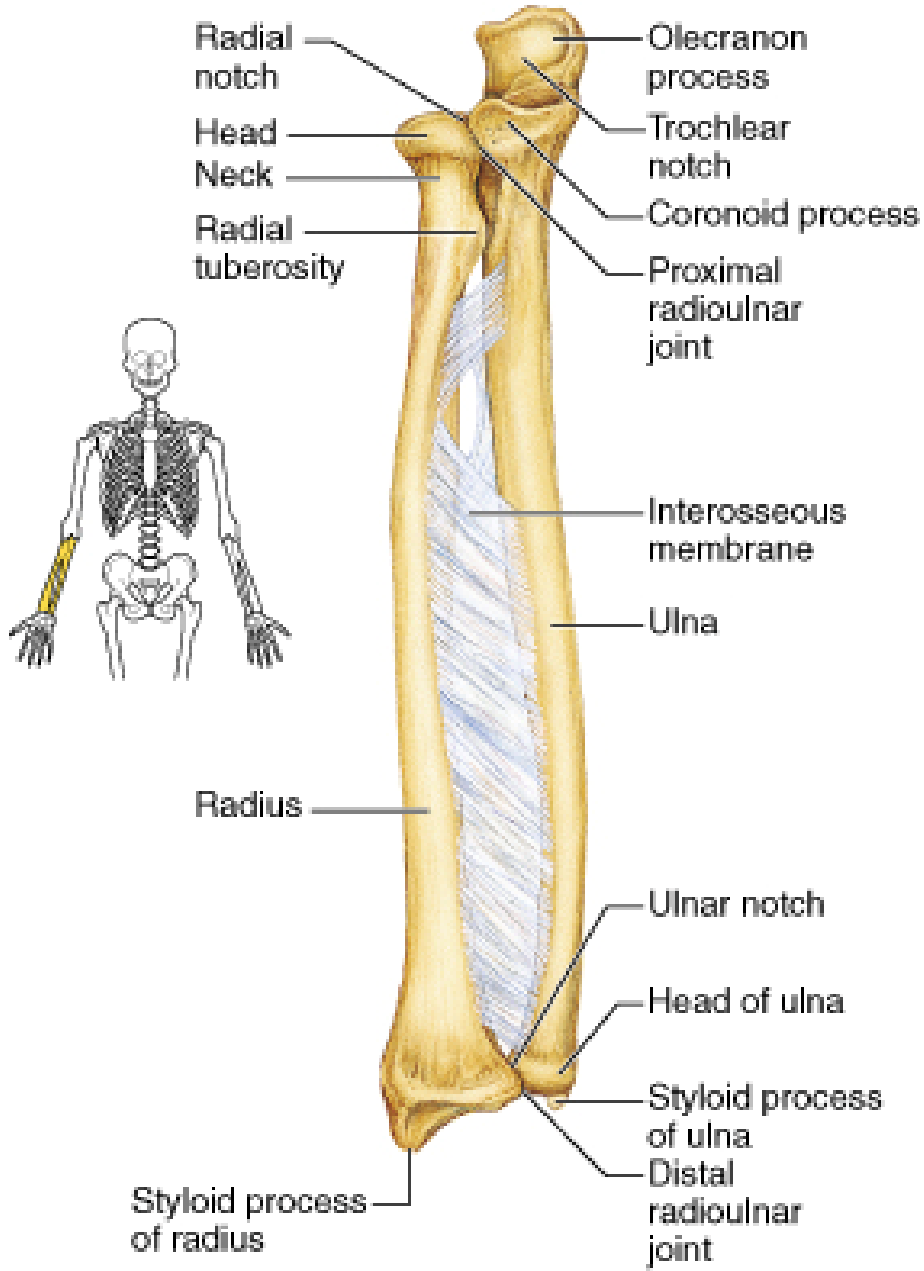

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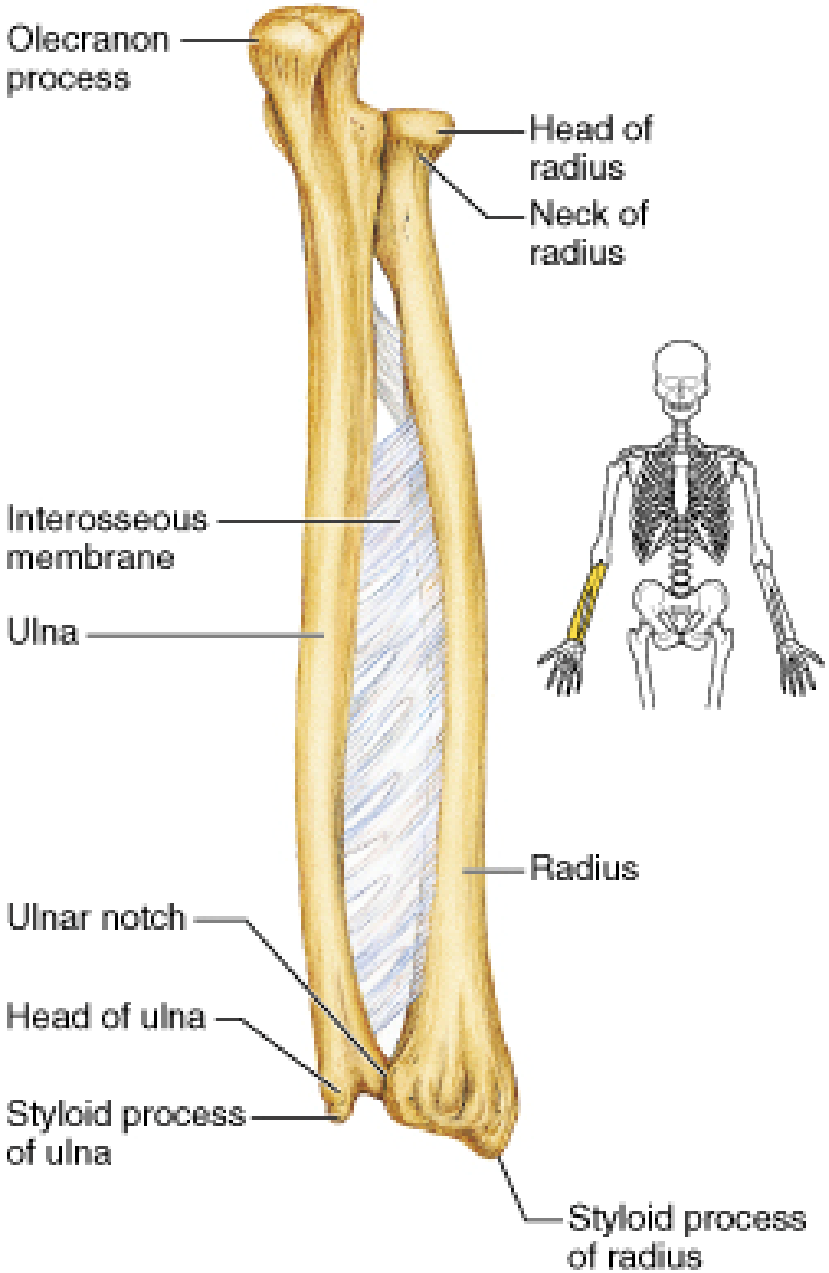

(b) Posterior view

Pulled elbow

- Pain may be poorly localized

- Why is the incidence under the age of 5?
- Under the age of 5, the attachment of the annular ligament is thin and easily disrupted, but the attachment becomes thicker above this age

Elbow stiffness

- A fall onto the outstretched hand may damage the articular cartilage of the radiohumeral joint (e.g., after Colle's fracture) →
  elbow stiffness →
  osteoarthritis →
  myositis ossificans (usually in the brachialis)
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  elbow movement is severely limited