

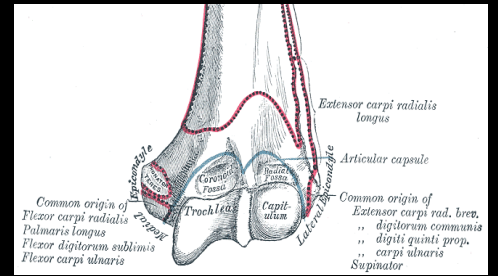
# Imaging of Elbow Tendons: Normal Anatomy and Pathology

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## Osseous Anatomy: Humerus

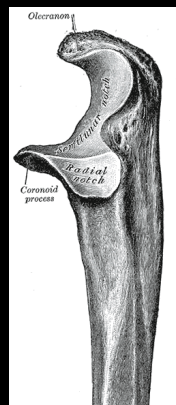
- Medial epicondyle
  - Superficial flexors
  - UCLC
- Lateral epicondyle
  - Superficial extensors
  - RCLC
- Trochlea
- Capitellum



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## Osseous Anatomy: Ulna

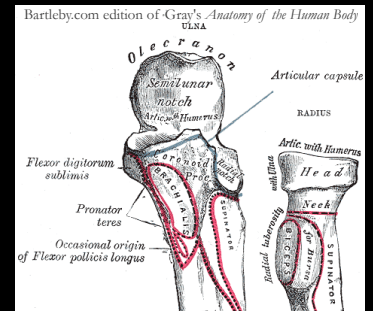
- Trochlear notch
- Coronoid process (anterior)
  - Contains the radial notch
- Olecranon process
  - Triceps insertion



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## Osseous Anatomy: Radius

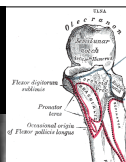
- Articular circumference largest medially at articulation w/ radial notch
- Articulates w/ capitellum & capitolotrochlear groove
- Lacks articular cartilage and subchondral bone plate anterolaterally (weaker part of bone, prone to FX)



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## Articular Anatomy

- Articular cartilage covering trochlear notch divided by trochlear groove and trochlear ridge
- Trochlear groove
  - Junction of coronoid and olecranon processes
  - Contains fat



## Lateral Epicondylitis

- Tennis elbow
- Extensor tendons prone to repetitive microtrauma → tendinosis
- ECRB most severely affected
- Noninflammatory infiltrate of angiofibroblastic hyperplasia
- Microtears, focal neovascularization, mucoid degeneration
- MR useful to evaluate extent of tear

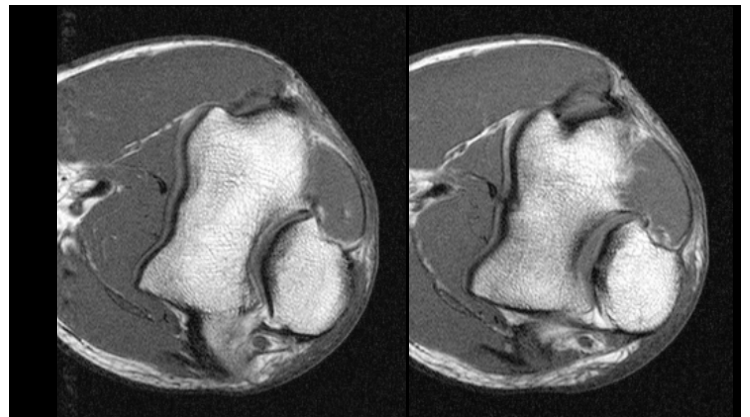
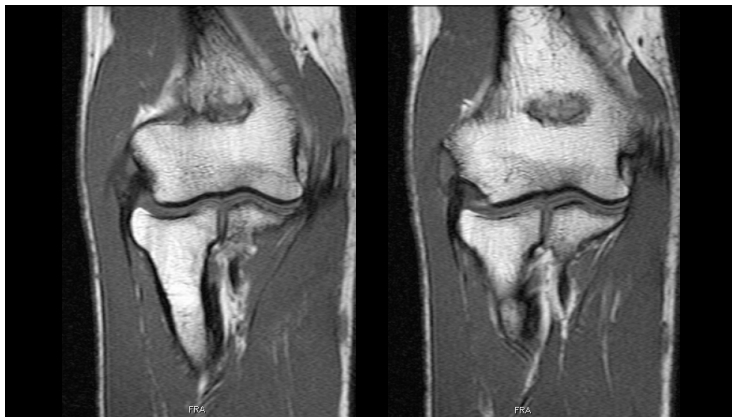
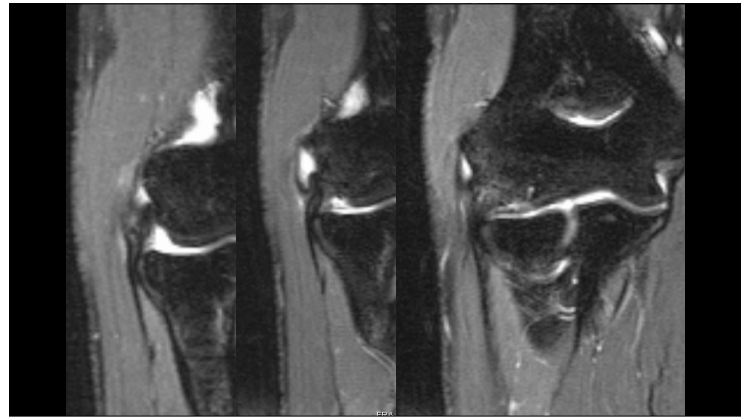


TR: 600  
TE: 14  
3.0T/1.5sp

Courtesy of Garry Gold, MD,  
Palo Alto, CA

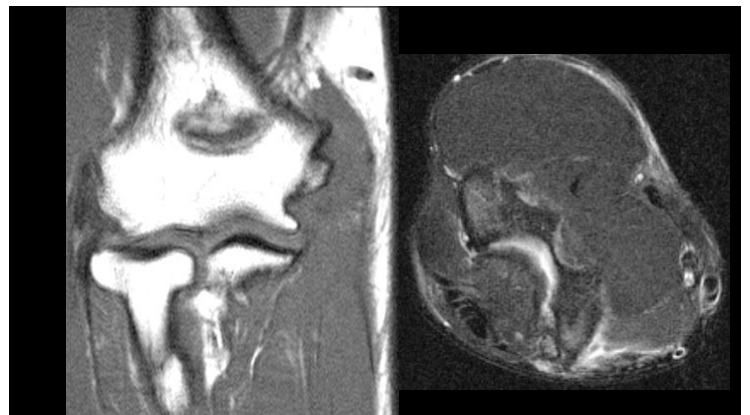
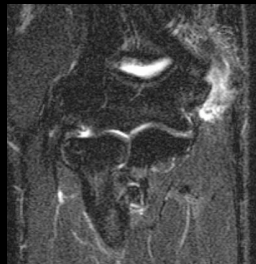
## Lateral Epicondylitis

- Pre-existing attritional tears may lead to rupture
- Attritional tears of RCL or LUCL may occur in association
- Clinically symptoms may mimic entrapment of posterior interosseous nerve



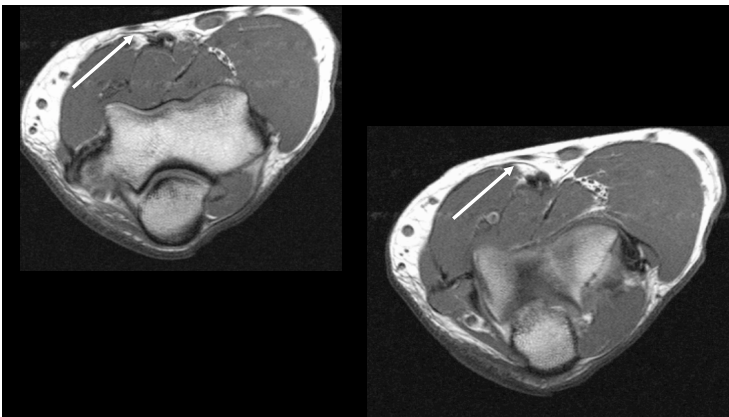
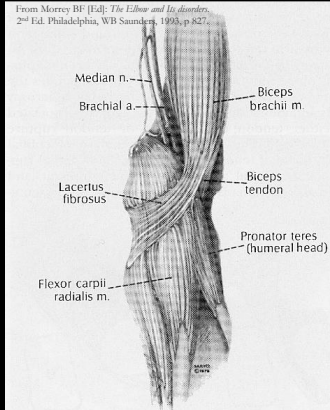
## Medial Epicondylitis

- Pitcher's or golfer's elbow
- Increased signal intensity at common flexor tendon origin (tendinosis)
- Attritional changes and eventual failure due to angular velocity and valgus forces (acceleration phase) exceeding tensile strength of myotendinous and ligamentous structures
- May coexist with lateral epicondylitis



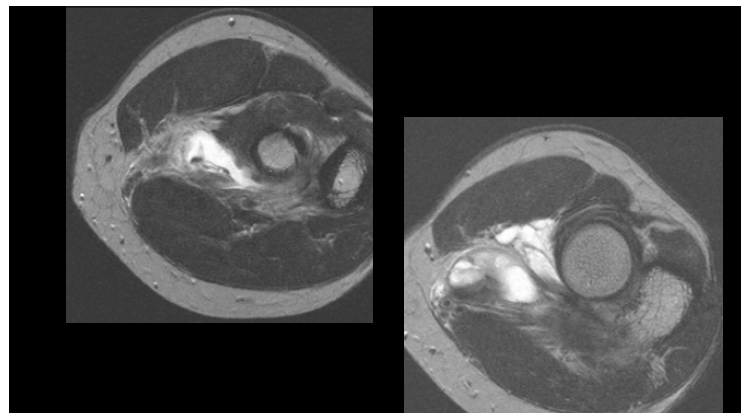
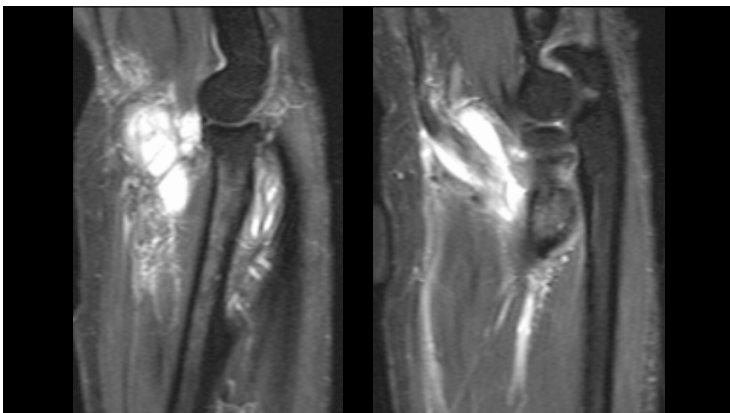
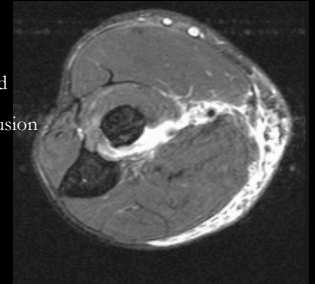
## Biceps Brachii Injury

- Most ruptures occur proximally (96%)
- Distal ruptures account for 3% of injuries
- Complete (distal) tears usually require surgery
  - Best outcome if performed within 6-8 weeks
- Partial (distal) tears are usually treated conservatively
- Lacertus fibrosis: biceps → antebrachial fascia over prox. 1/3 of flexor-pronator group (medial)



## Complete Rupture

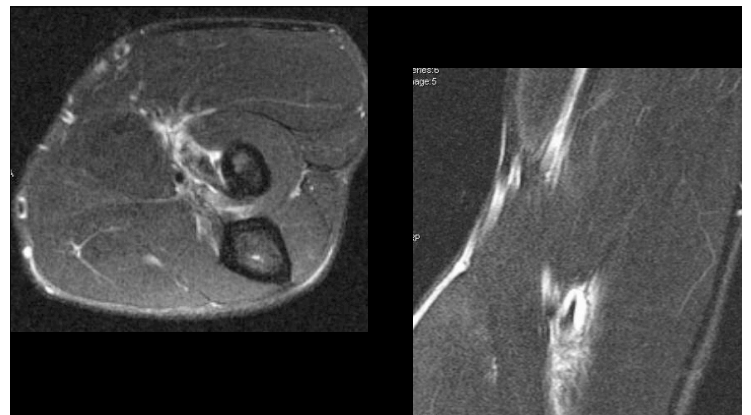
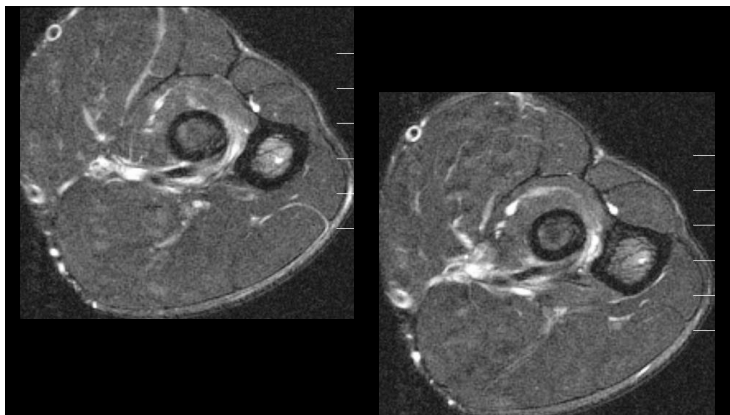
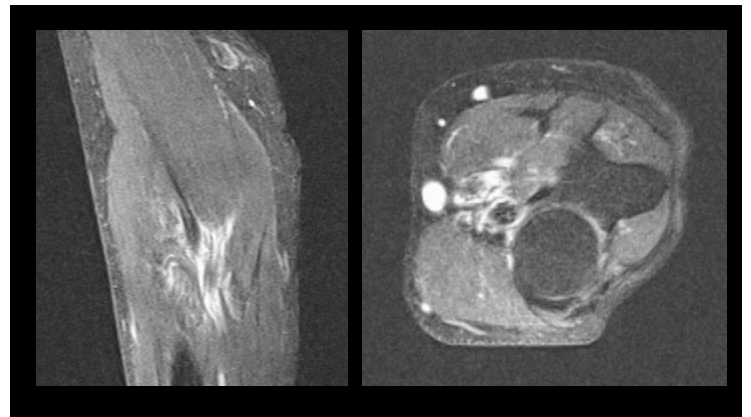
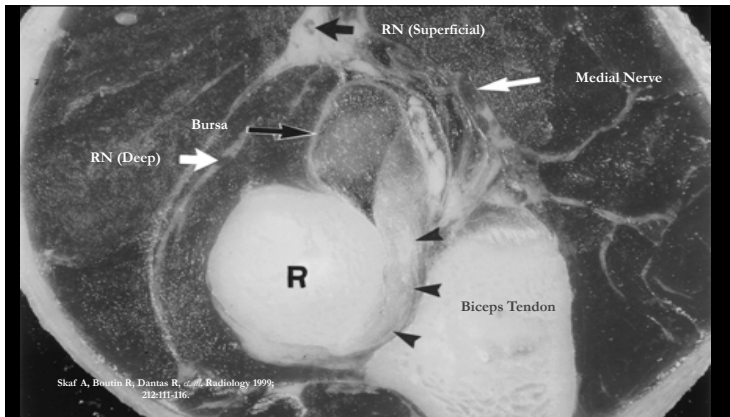
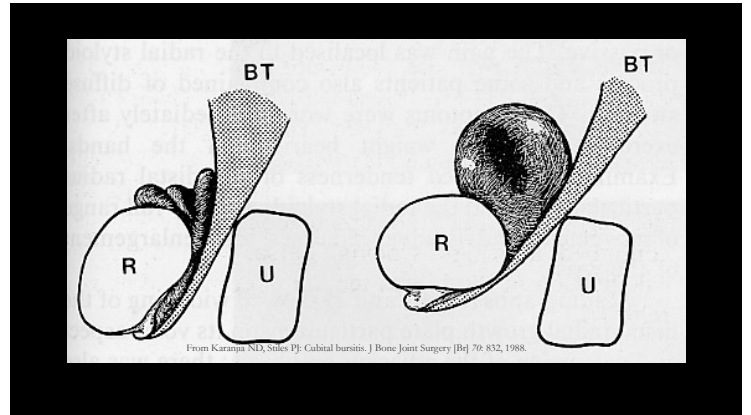
- Men >40 years old
- Complete avulsion from radial tuberosity
- Excessive extension force applied to flexed supinated arm
- Palpable lacertus fibrosus may cause confusion on exam
- MR shows absence/retraction of tendon, peritendinous fluid, and hematoma





## Partial Tear

- Commonly associated with cubital bursitis (55%)
- Bone marrow edema (50%)
- Minor trauma or insidious onset → suggests underlying tendon degeneration
- Hypovascular zone and local impingement may lead to degeneration and tear



## Triceps Tendon

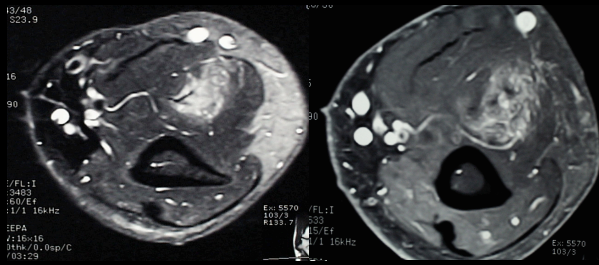
- Infraglenoid tubercle → Long head
- Posterior humerus → Lateral head
- Posterior humerus → Medial head



## Triceps Tendon



## Brachialis Tear



Courtesy of Garry Gold, MD, Palo Alto, CA

Thank You