

# Acute Joint Dislocations

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# Objectives

- To know mechanisms of joint dislocations
- To be able to make the diagnosis
- To know and interpret the appropriate x-rays
- To be able to describe principles of treatment
- To know the common complications and how to avoid them

# Acute Joint Dislocation

- Definition
  - An acute complete separation contact of the Joint articular surface
- It described according to position of distal fragment :
  - Anterior, Posterior, Inferior, Superior, medial, lateral
- Results from significant trauma:
  - Sport injuries
  - RTA

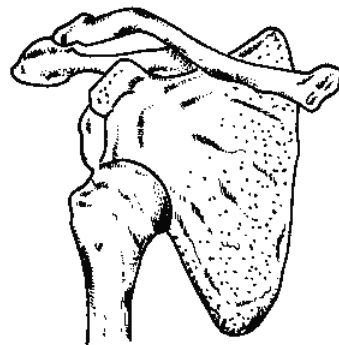
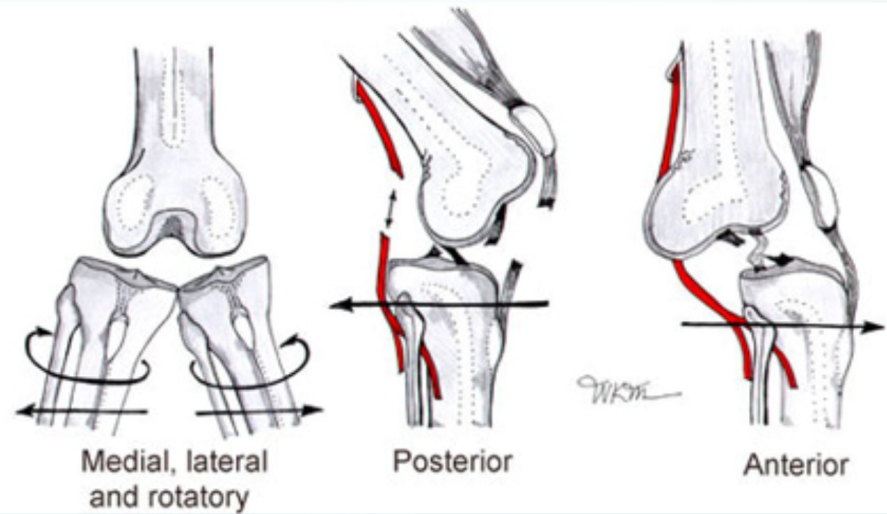


Fig. 7 Dislocation of the shoulder



# Clinical Features

- Pain
- Abnormal shape of the joint
- Careful NV exam
- Inability to move the limb
- The limb is held in a characteristic position



# Imaging

- X-rays:
  - Adequate views – AP,(?lateral/others painful)
  - Confirm the diagnosis
  - Rule-out fractures (i.e. a fracture-dislocation)
  - Reduce before X-rays in **Knee, Ankle**, why?
- CT scan
  - Needed in associated fractures (e.g. hip)

# Complications

- Avascular necrosis of bone: Hip (10%), 40% If reduction is delayed by >12 hours
- Heterotopic ossification
- Nerve injury;
  - Axillary neuropraxia in shoulder.
  - Common peroneal nerve injury in knee (20 %)
  - Sciatic nerve injury in hip (10%).
- Recurrent dislocation: Shoulder
- Tendon tear: Rotator cuff in shoulder (more in elderly)
- Vascular injury: Popliteal artery injury in Knee

# Treatment

- Urgent reduction
  - Adequate analgesic, sedation, muscle relaxant or if failed GA
  - Closed (or if failed: Open surgical)
  - Check stability
- Immobilization
  - By splint (e.g. Knee), or traction (e.g. Hip)
- Imaging after reduction
  - Confirms reduction
  - Rules out fractures
- Physiotherapy (later)



# Acromio-clavicular Dislocation

- Direct fall on shoulder tip
  - More seen in cyclists



<http://www.shouldersurgery.com.au/>



<https://www.forbes.com>

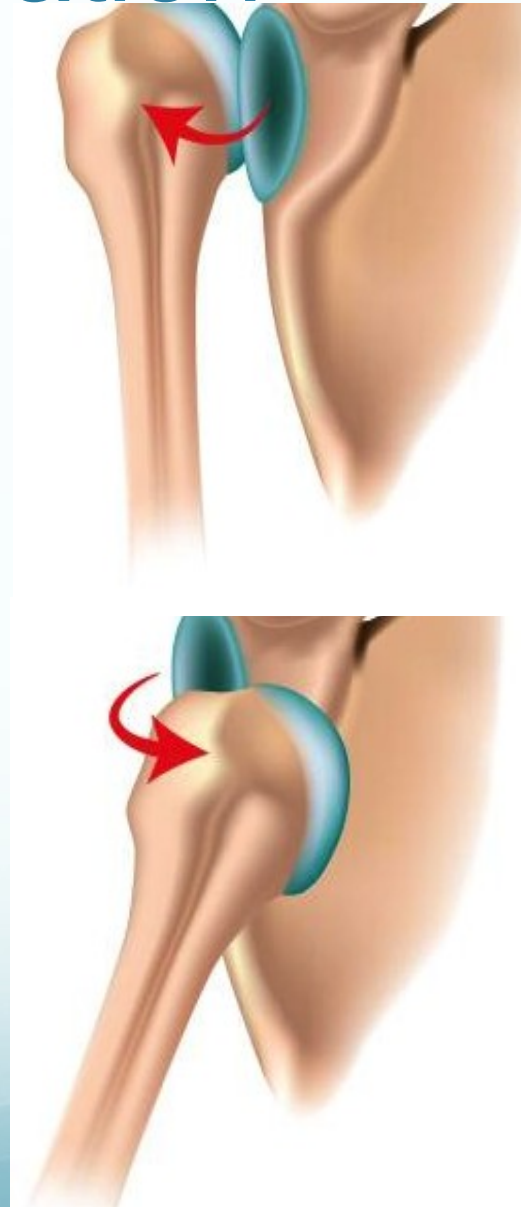
# Acromio-clavicular Dislocation

- Treatment:
  - Usually conservative: Sling
  - Surgery:
    - in unstable
    - Completely displaced



# Acute Shoulder Dislocation

- The commonly dislocated joint
- Factors:
  - Shallow glenoid socket
  - Wide range of motion
- Types:
  - Anterior: (the commonest)
  - Posterior: (rare; less than 2%)



# Anterior Shoulder Dislocation

- The humeral head lies anterior to the glenoid



<http://www.methodistorthopedics.com/>



<http://www.howardluksmd.com/>

# Anterior Shoulder Dislocation

- Mechanism of injury:
  - Forced abduction, external rotation
    - Throwing catching a ball
    - Hitting ball with racket
    - Forced in weight-lifting
  - A fall on the backward stretching hand



<http://drdanrae.com/injuries>



<http://www.crazyfunnystupid.c>



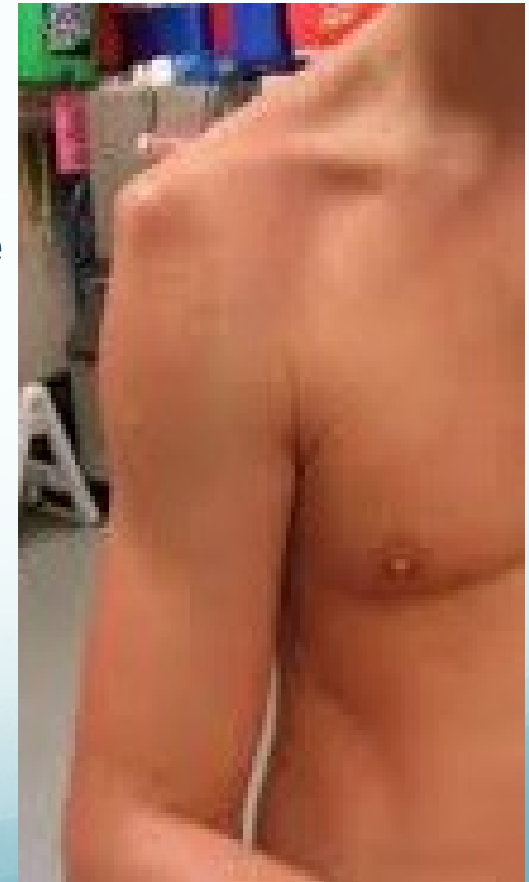
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<http://blogs.menshealth.es/>

# Anterior Shoulder Dislocation

- Clinical picture:
  - Patient holding the affected arm in adduction
  - The lateral outline of the shoulder is flattened
  - Bulge seen and felt below the clavicle



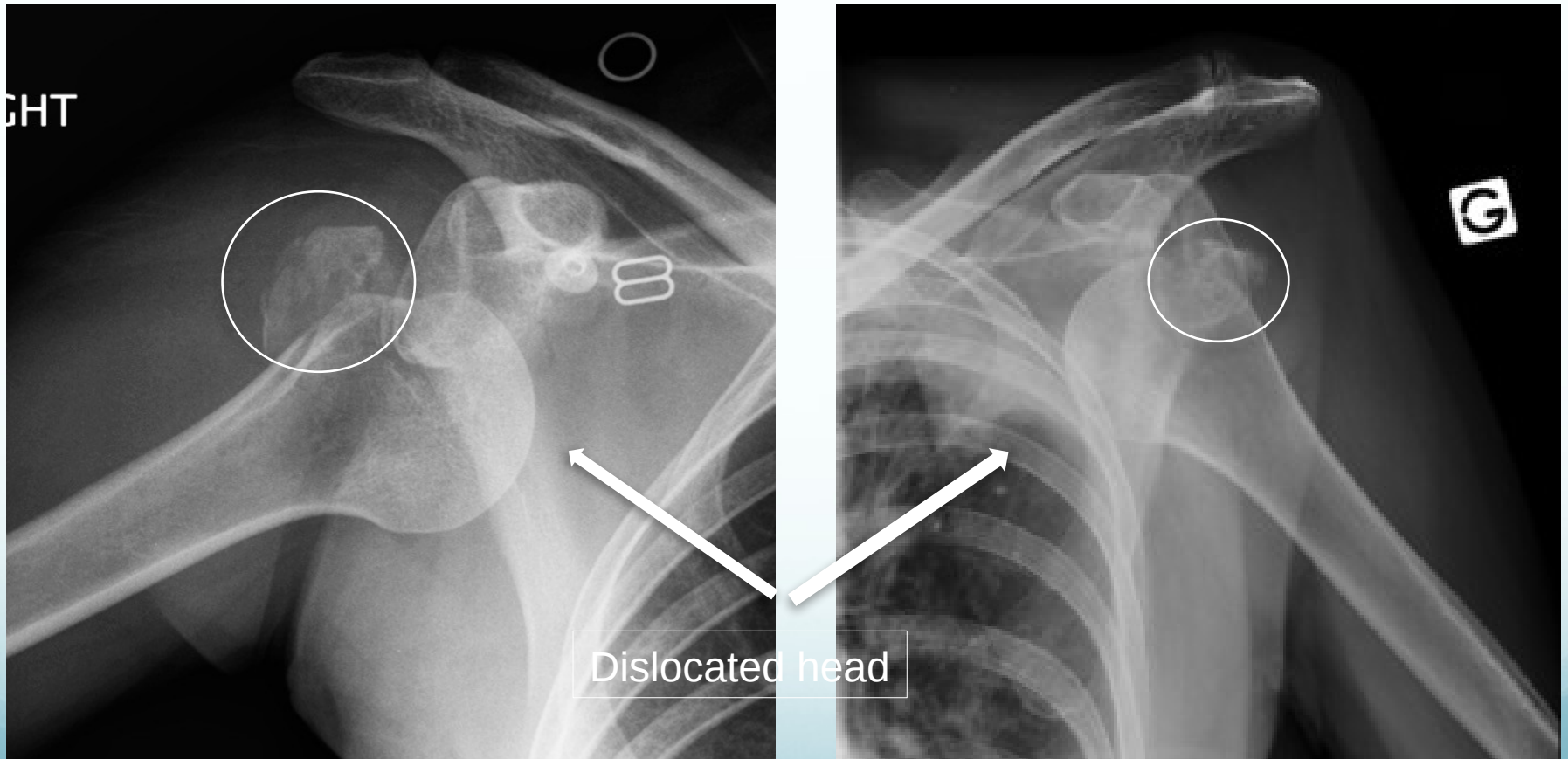
# Anterior Shoulder Dislocation

- X-rays:
  - AP(& lateral scapular ) views
  - Overlapping shadows of humeral head and glenoid
  - Humeral head lies below and medial to glenoid



# Anterior Shoulder Dislocation

- Rule-out greater tuberosity fracture

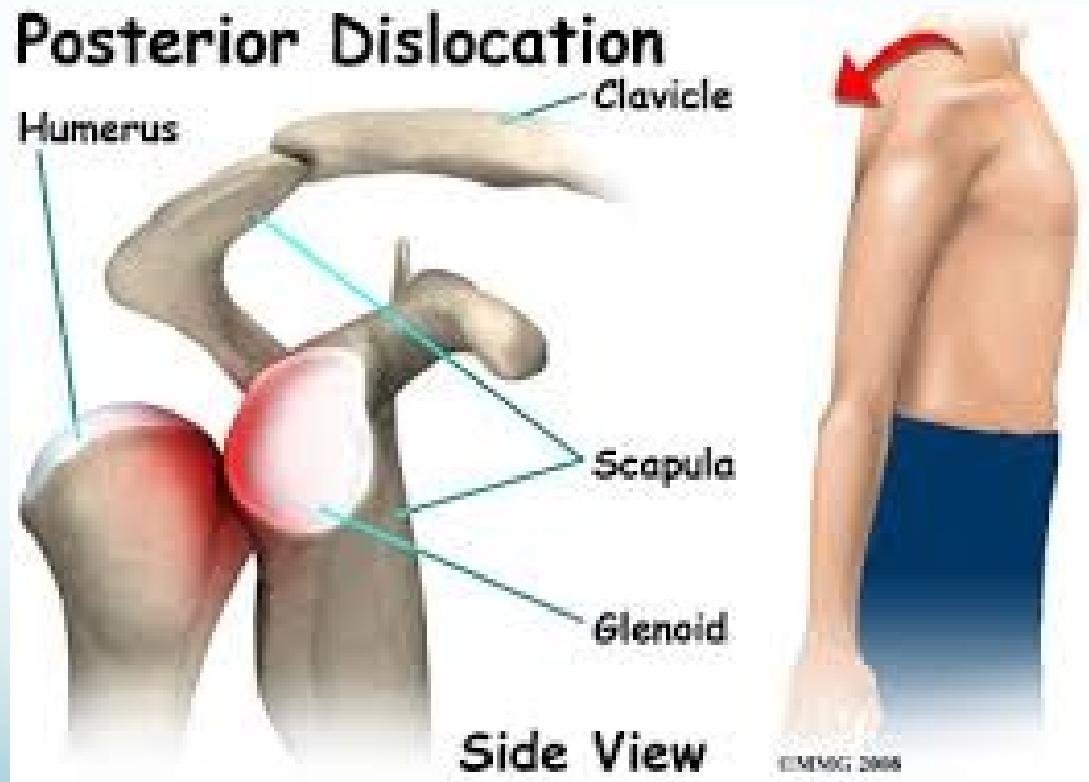


<http://shoulderdislocation.net/>

<http://en.wikipedia.org/>

# Posterior Shoulder Dislocation

- The humeral head lies behind the glenoid
- Rare



# Posterior Shoulder Dislocation

- Mechanism of injury:
  - Indirect force producing marked internal rotation & adduction
    - Convulsion, with an electric shock
  - Direct fall on elbow
    - with shoulder internally rotated



# Posterior Shoulder Dislocation

- Clinical picture
  - The diagnosis is frequently missed (>50%)
  - The arm is held & locked in internal rotation
  - The front of the shoulder looks flat with a prominent coracoid

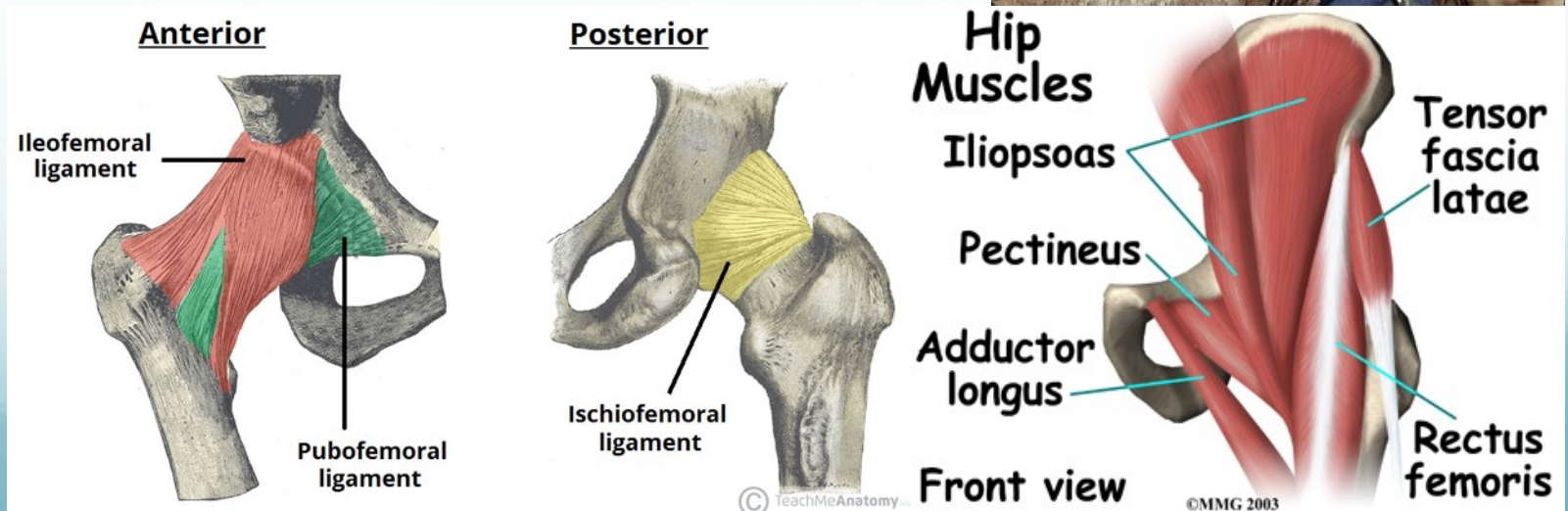
# Posterior Shoulder Dislocation

- X-ray
  - AP:
    - The humeral head is medially rotated:  
Electric light bulb
    - The empty glenoid sign
    - Posterior displacement
  - Axillary & Scapular view are essential
  - Rule-out fractures:
    - neck, lesser tuberosity, glenoid
- CT Scan
  - Shows dislocation



# Hip Dislocation

- The hip joint is stable because of
  - Shape of head and acetabulum
  - Acetabular Labrum
    - Strong fibrous ring
    - ↑↑ femoral head coverage
  - strong ligaments and muscles



# Hip Dislocation

- Caused by a high energy trauma
  - Road Traffic accident:
    - knee striking against dashboard (unrestrained in car)
    - Position at impact determines type of dislocation
- Types:
  - Posterior: (the commonest)
  - Anterior: rare



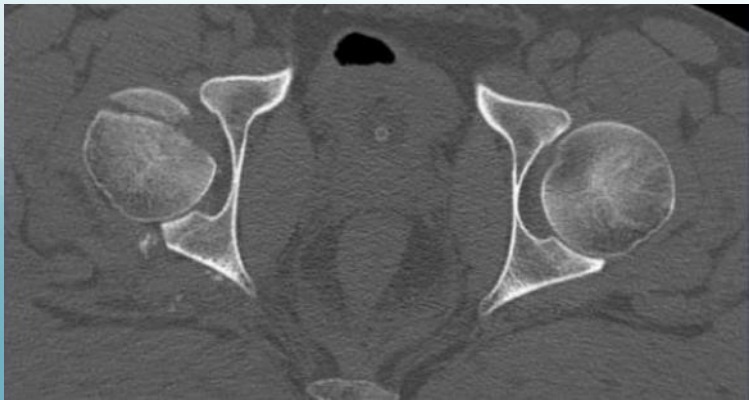
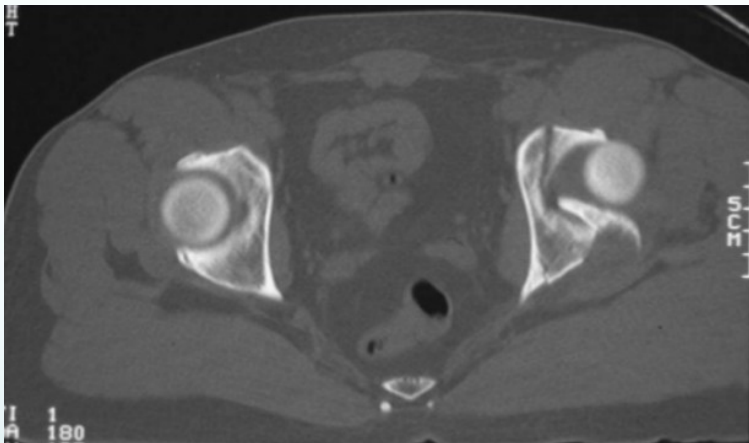
# Posterior Hip Dislocation

- Clinical picture:
  - Pain, Inability to move hip
  - On examination: Limb is short, adducted, internally rotated & slightly flexed.
  - Must rule-out:
    - Sciatic nerve injury
    - Associated fractures:
      - Femur or acetabulum
      - Patella



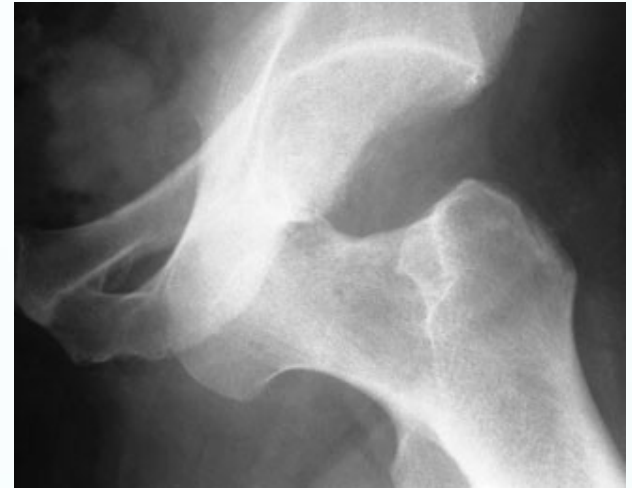
# Posterior Hip Dislocation

- XR & CT scan :
  - R/O an acetabular fracture (or intraarticular bony fragment)



# Anterior Hip Dislocation

- Rare
- The leg lies externally rotated, abducted & slightly flexed
- Palpable head in the groin



# Patellar Dislocation

- More in adolescent females
- genu valgus results in pulling patella laterally
- Sudden Quadriceps pull in sports
  - May spontaneously reduce



# Dislocation of Patella

- X-rays



<http://pedemmorsels.com/>



<https://www.physio-pedia.com>

# Dislocation of Patella

- Treatment:
  - Reduction easy
  - Surgery if recurrent
- Factors for recurrence:
  - Ligament laxity
  - ↑genu valgus
  - High patella



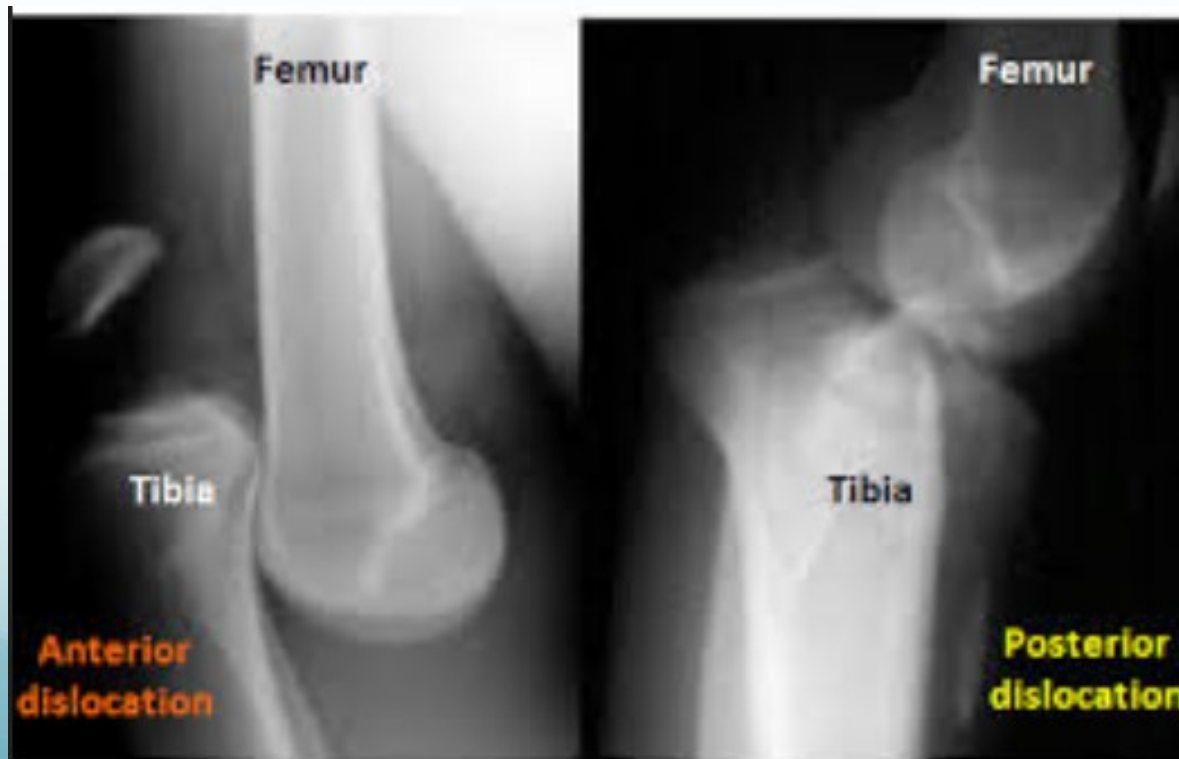
# Knee Dislocation

- High energy: usually RTA
- Gross deformity – must examine NV



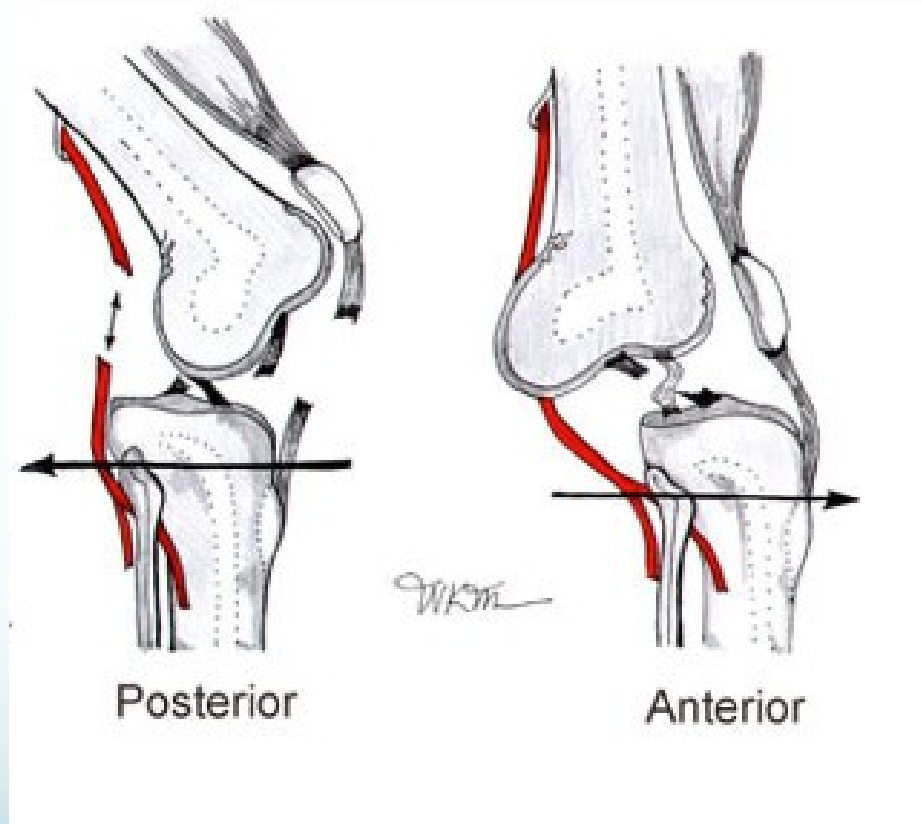
# Knee Dislocation

- X-ray:
  - Dislocation
  - Fractured tibial spine (cruciate ligament avulsion)
  - Avulsion fibular styloid (collateral ligament avulsion)



# Knee Dislocation

- Angiography if distal pulses not felt



# Knee Dislocation

- Management
  - Urgent reduction & vascular intervention if needed
  - Reconstruction of ligaments (acute or delayed)



# Fingers / Toes Dislocations

- Sports, ball games, falls
- Reduction by traction & counter traction
- Immobilization by finger splint or buddy taping (with next finger/toe)



<http://radiologymasterclass.co.uk/>



<http://www.eorif.com/>

# Fingers / Toes Dislocations

- Sports, ball games, falls
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# Summary

- Dislocation is an orthopedic emergency and needs urgent reduction
- Anterior shoulder dislocation is the commonest
- Obtain adequate imaging to rule out posterior shoulder dislocation & fracture with Posterior hip dislocation
- Always suspect vascular injuries with dislocated knee