

## PATIENT DEMOGRAPHICS

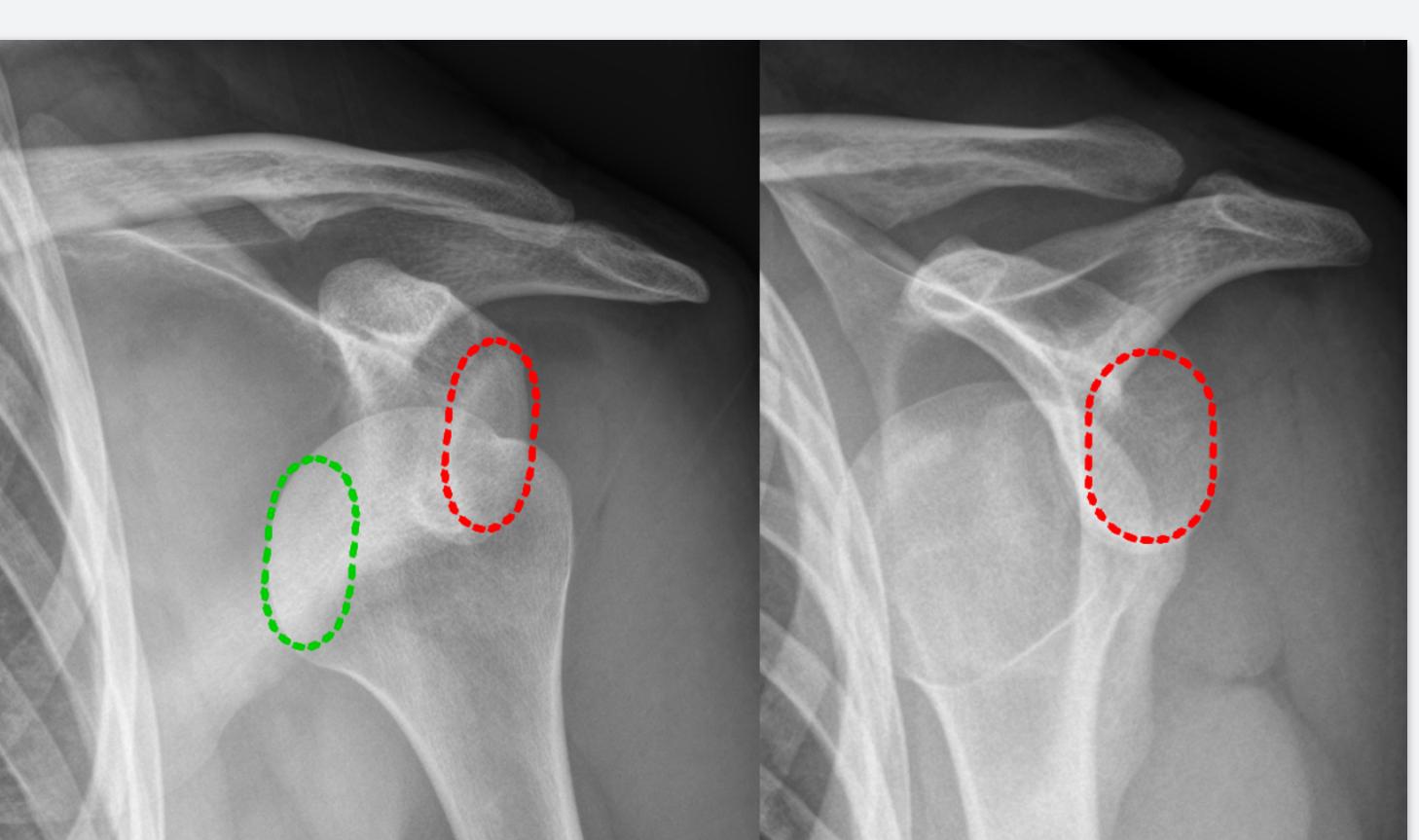
- Patient name
- DOB
- Sex
- Hospital / NHS number

## RADIOGRAPH DETAILS

- Date and Time
- Adequacy:
  - Correct side (Left or Right)
  - X-ray(s) covers full area(s) of clinical concern
    - Including above and below area of clinical concern
  - At least 2 views i.e. AP and Lateral
  - Adequate exposure
  - Rotation - ideally none but avoid excessive rotation

Area of Clinical Concern	X-ray Views To Request
Cervical Spine	<ul style="list-style-type: none"><li>• Lateral</li><li>• AP</li><li>• Odontoid view (through mouth)</li></ul>
Thoracic / Lumbar Spine	<ul style="list-style-type: none"><li>• Lateral</li><li>• AP</li><li>• Oblique (Lumbar) if suspected pars fracture</li></ul>
Coccyx	<ul style="list-style-type: none"><li>• No X-ray imaging recommended</li></ul>
Clavicle	<ul style="list-style-type: none"><li>• AP Clavicle</li><li>• AP Shoulder</li></ul>
Shoulder	<ul style="list-style-type: none"><li>• AP</li><li>• Lateral or Axial</li></ul>
Midshaft Humerus	<ul style="list-style-type: none"><li>• Full length Humerus AP / Lateral</li><li>• Shoulder AP / Lateral</li><li>• Elbow AP / Lateral</li></ul>
Elbow	<ul style="list-style-type: none"><li>• AP</li><li>• Lateral</li></ul>
Midshaft Forearm	<ul style="list-style-type: none"><li>• Full length Forearm AP / Lateral</li><li>• Elbow AP / Lateral</li><li>• Wrist AP / Lateral</li></ul>
Wrist	<ul style="list-style-type: none"><li>• AP</li><li>• Lateral</li><li>• Scaphoid views (suspected Scaphoid injury)</li></ul>
Hand	<ul style="list-style-type: none"><li>• PA</li><li>• Lateral</li><li>• Scaphoid views (suspected Scaphoid injury)</li></ul>
Pelvis	<ul style="list-style-type: none"><li>• AP Pelvis</li></ul>
Hip	<ul style="list-style-type: none"><li>• AP Pelvis</li><li>• Lateral hip (side of concern)</li></ul>
Midshaft Femur	<ul style="list-style-type: none"><li>• Full length Femur AP / Lateral</li><li>• Pelvis AP / Hip Lateral</li><li>• Knee AP / Lateral</li></ul>
Knee	<ul style="list-style-type: none"><li>• AP</li><li>• Lateral</li><li>• Weight bearing if OA / NWB if trauma</li></ul>
Midshaft Lower Leg	<ul style="list-style-type: none"><li>• Full length Tibia &amp; Fibula AP / Lateral</li><li>• Knee AP / Lateral</li><li>• Ankle AP / Lateral</li></ul>
Ankle	<ul style="list-style-type: none"><li>• AP</li><li>• Lateral</li><li>• Mortise view or above views while Weight Bearing if suspecting syndesmosis injury</li><li>• Knee AP if syndesmosis injury and no distal fibula fracture</li></ul>
Foot	<ul style="list-style-type: none"><li>• AP</li><li>• Lateral</li><li>• Oblique</li><li>• Weight bearing if suspecting Lisfranc injury</li></ul>

## RADIOGRAPH INTERPRETATION



### Alignment

- **Bones:**
  - Bone deformity:
    - Suggest fracture, previous injury or disease
- **Joints:**
  - Dislocations or subluxations

### Bone

- **Cortical outline:**
  - Check the cortical outline of each bone.
  - Disruption of the cortical outline suggests fracture
- **Bone texture:**
  - Check the trabeculae of each bone
  - Disruption can be sign of fracture or bone disease
  - Decreased trabeculae can be sign of osteopenia / osteoporosis

### Cartilage

- **Joint space:**
  - Cartilage cannot be viewed on X-ray
  - However amount of joint space will give an indirect review of amount of cartilage
  - Reduced joint space is linked to loss cartilage loss i.e. OA, RA
- **Calcification:**
  - Calcifications within the cartilage area is a sign of Chondrocalcinosis (Psuedogout)

### Extra

- **Artifacts:**
  - Evidence of previous surgery i.e. screws / plates
  - Jewellery:
    - Remove if limiting your evaluation of the area
    - Always remove rings in hand injuries (risk of tourniquet in event of finger swelling)

### Soft Tissue

- **Joint effusion:**
  - Suggest intra-articular injury (fracture or soft tissue)
  - Lipohaemarthrosis:
    - Fluid line of different densities (fat and blood) within joint
    - Suggest intra-articular fracture
- **Foreign bodies:**
  - Note any foreign bodies
  - Use 2 views to gain 3D picture of location
  - Note not all foreign bodies are radiopaque
- **Free Air:**
  - Check for free air (gas) within soft tissues:
    - Suggest open injury or infection

### Final Points

- **Comparison:**
  - If available compare with other side i.e. pelvis
  - If available compare to previous X-ray of same area
- **Focus:**
  - Examine whole X-ray, don't focus on obvious abnormality
- **Patient:**
  - Always interpret X-ray with clinical picture in mind

## SPECIFIC AREAS

### Cervical Spine: Lateral View

- Review each vertebral body looking for fracture
- Review the alignment of cervical spine by looking at 4 lines looking for evidence of 'steps' suggesting displacement:
  - Anterior vertebral line (Anterior vertebral bodies)
  - Posterior vertebral line (Posterior vertebral bodies)
  - Spinolaminar line (Base of spinous processes)
  - Posterior Spinous Line (Posterior spinous processes)



### Cervical Spine: Odontoid View

- Review the odontoid peg (green line) looking for evidence of fracture: None seen
- Review alignment of odontoid peg to facet joints of C1/2 by comparing space either side, should be equal:
  - Note widened space on right side compared to left
  - Potential subluxation (red lines)



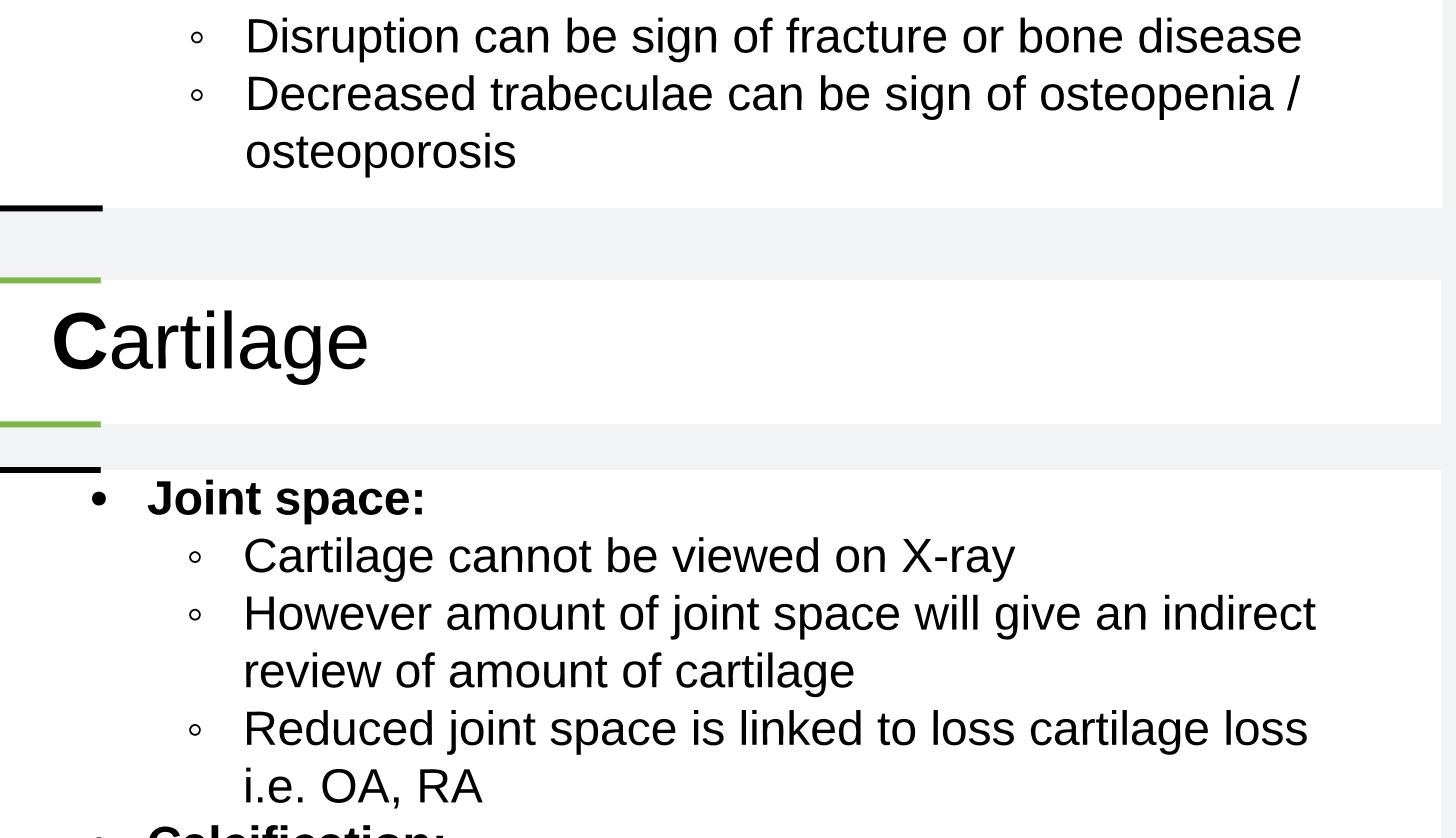
### Shoulder - Anterior Dislocation:

- AP view position of humeral head (articular area green border) to Glenoid (red border) are not in contact:
  - Dislocation
- Lateral view humeral head is anterior to glenoid (red border):
  - Anterior dislocation



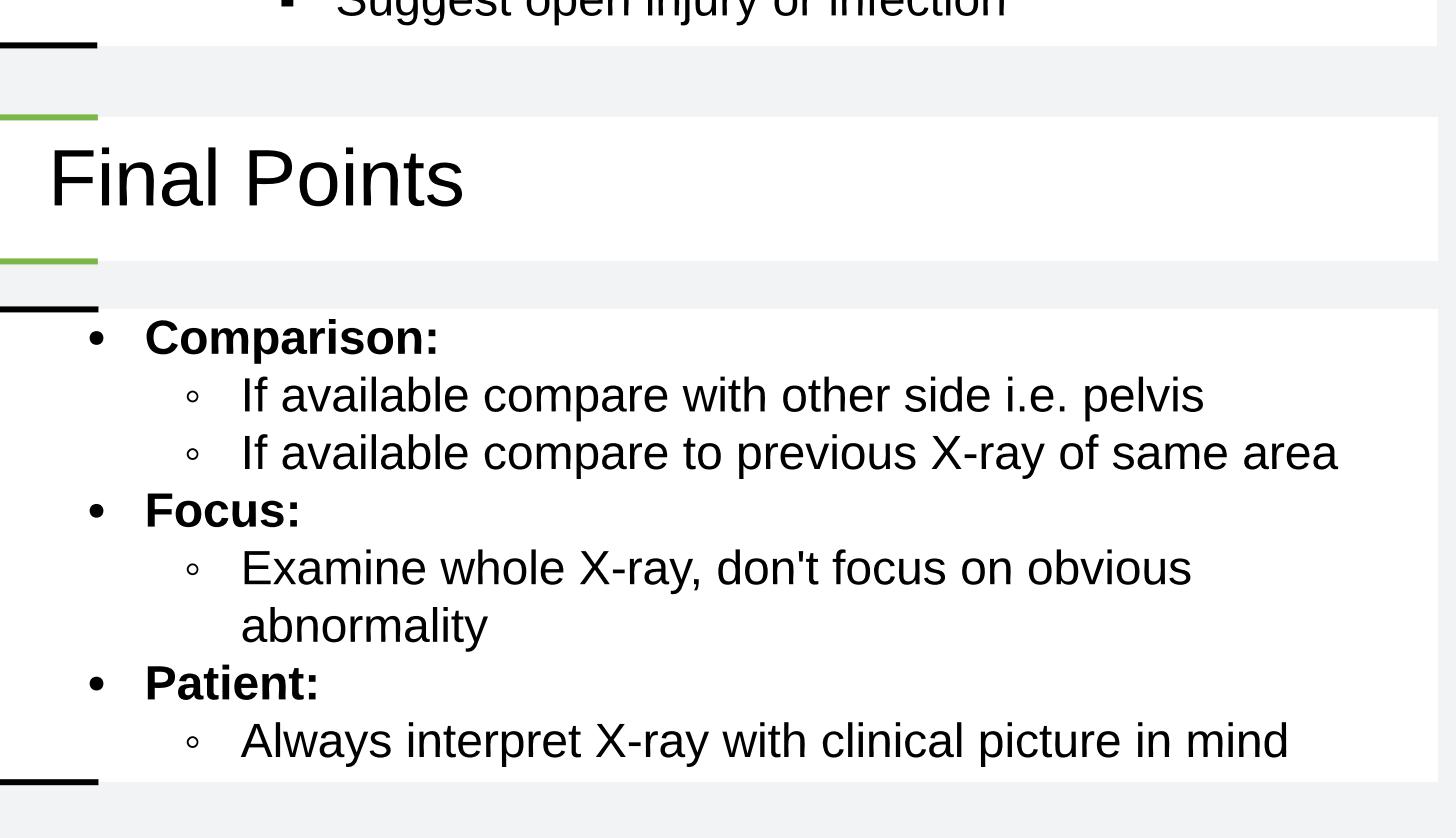
### Wrist - Distal Radial 'Colles' Fracture:

- Distal radial fracture (red border AP)
- Dorsal angulation of fragment (red line Lateral)



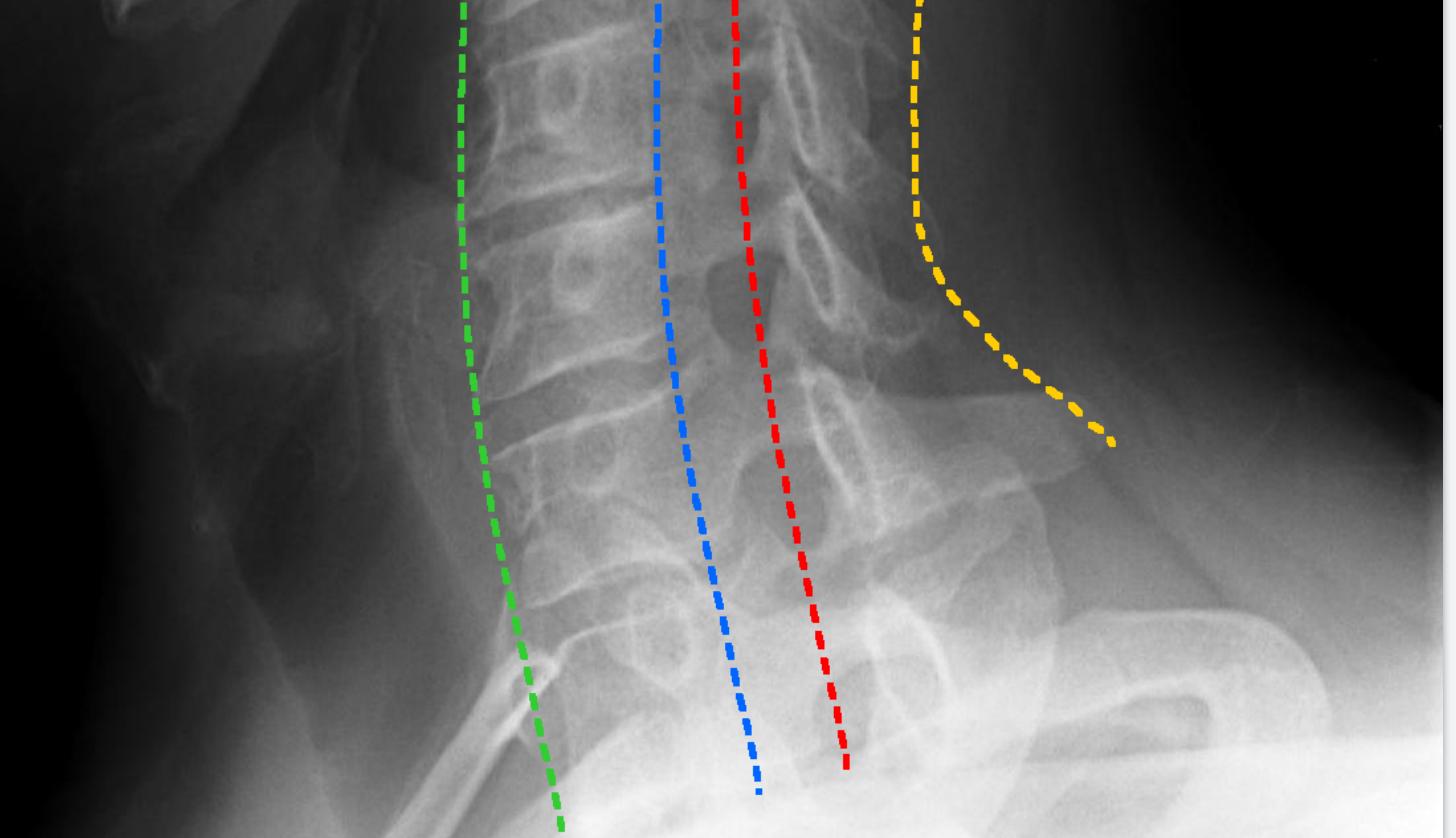
### Pelvis - Fractured Neck of Femur:

- Review Shenton's line, looking for discontinuity suggesting fracture:
  - Lipohaemarthrosis:
    - Fluid line of different densities (fat and blood) within joint
    - Suggest intra-articular fracture
- No fracture right side:
- Shenton's line continuous (green line)
- Fractured neck of femur left side:
  - Shenton's line discontinuous (red line)



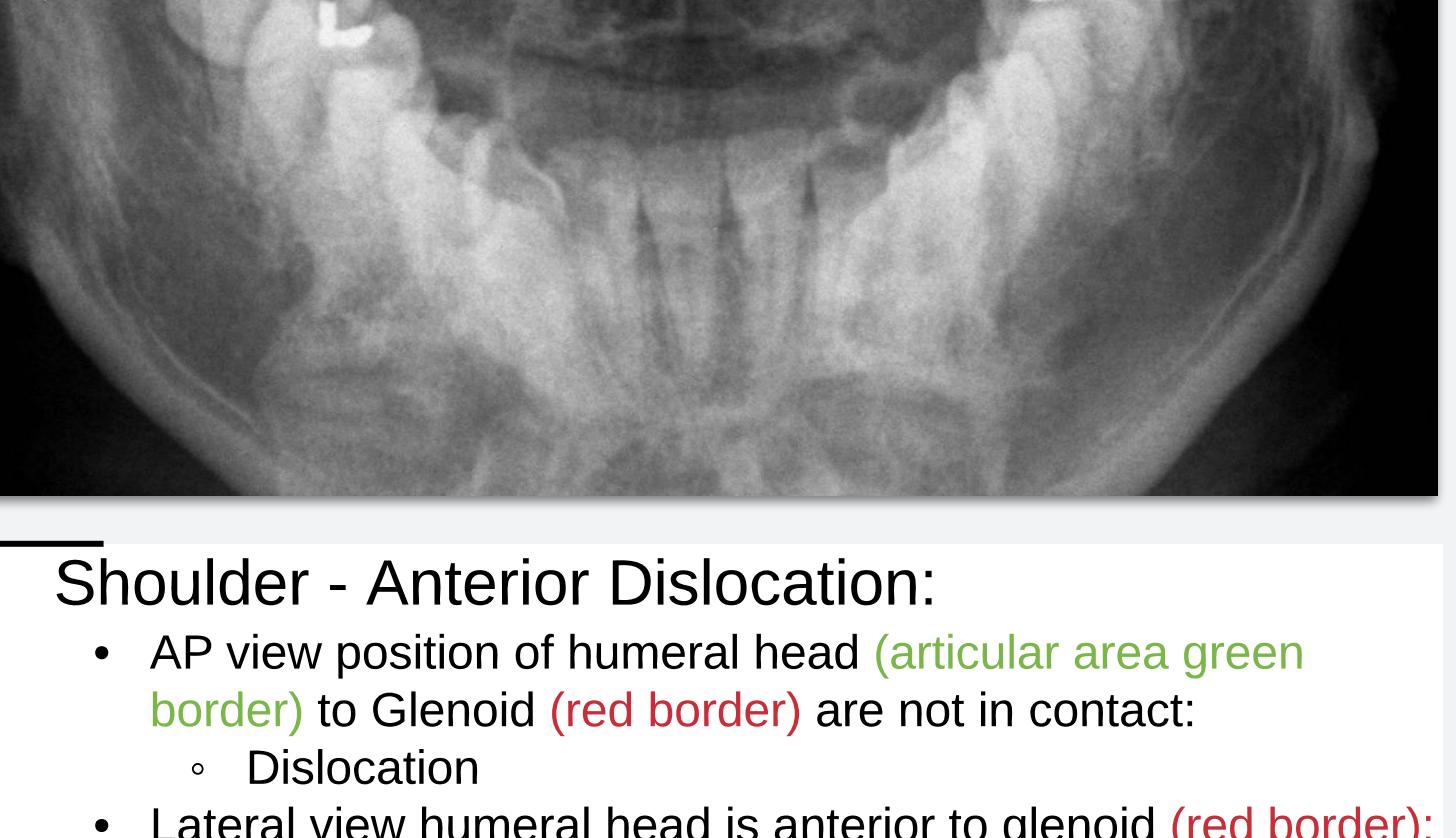
### Knee - Medial compartment Osteoarthritis:

- Review joint space between Femur and Tibia.
- Should be clear space (cartilage)
- Normal joint space left knee (green border)
- Loss of medial joint space right knee (red border):
  - Osteoarthritis



### Ankle - 'Webber C' fracture:

- Review Fibula and Tibia for fracture:
  - Fibula fracture (red border)
- Review gap between Tibia and Talus:
  - Should be equal throughout
  - Unequal suggest 'Talar shift' denoting displacement of talus due to fracture / ligamentous injury
    - Talar shift present (different length green lines)



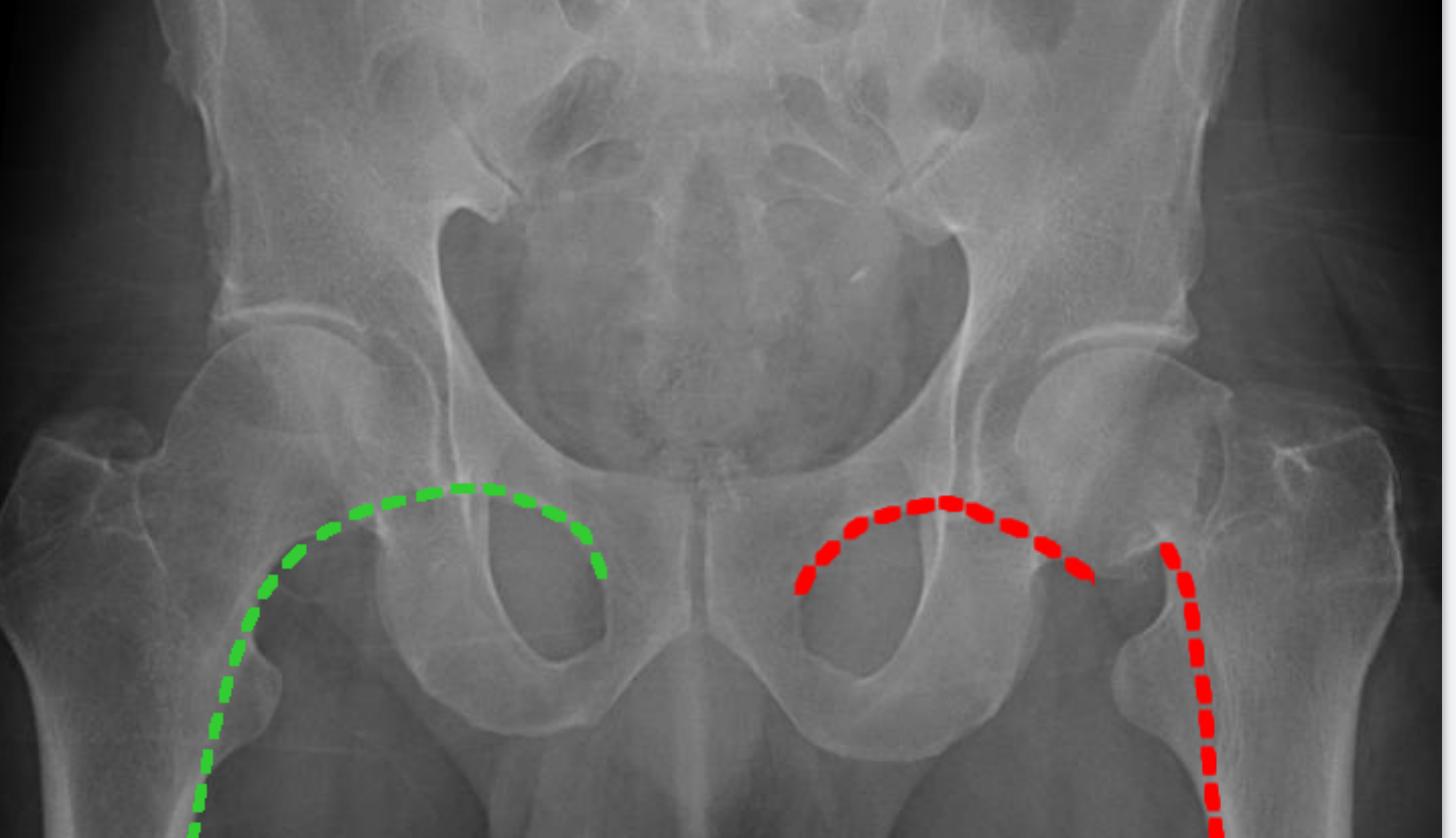
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