Radial Head Fractures

- Common in adults but less so in children, as the proximal radius is mainly cartilaginous
  - Usually a fall on a pronated arm with valgus stress through the elbow.
  - Common medial tenderness indicating medial collateral ligament injury
  - Presence of a coronoid tip fracture hints at occult subluxation or overt dislocation = terrible triad
    - Requires immediate surgery to reduce the elbow, internally fix the coronoid and treat the radial head fracture by fixation of replacement.
    - The lateral capsule ± medial ligament will also need repair
- Symptoms include tenderness over the radial head on pronation-supination, along with restricted extension.
- If not clear on standard AP and lateral films of the elbow, request additional AP films in mid- and full-pronation.
- Mason classification:
  - 1 = vertical split with < 2mm displacement
  - 2 = single fragment of the lateral portion of the head with ≥2mm displacement or ≥30% articular surface
  - 3 = comminuted fracture
  - 4 = fracture of radial head associated with radial neck
- Rarely with great violence, there can be tearing of the inter-osseous membrane with subluxation of the distal ulna = Essex-Lopresti injury
  - Excision of the distal end of the ulna can treat this, but results in weakened grip.
- Treatment:
  - 1 = wool and crepe with broad arm sling. Mobilise in sling after 2-3 weeks, and discard sling after further 2 weeks. Initial backslab if pain is severe, and expect a few months before return of full extension.
  - 2 = conservative treatment, with late radial head excision at 2-3 months if severe restriction in ROM. But in younger fitter patients, can also consider ORIF with anatomical reduction and internal fixation using compression (Herbert’s) screws, as this allows early mobilisation and prevents secondary OA.
  - 3 = early radial head excision ± prosthetic replacement if proximal migration of radius. Rest in sling for 2-3 weeks post-op.
- If fracture associated with an elbow dislocation, this is inherently unstable required fixation, or correction of the radial pillar with a silastic replacement following excision of the radial head.
- Complications include stiffness, myositis ossificans, and recurrent instability of the elbow if the medial collateral ligament was injured (and the head then excised)