Forearm Fractures

For Distal Radius/Ulna Fractures – See Wrist Fractures

Olecranon Fractures

Features

- Typically low energy & indirect in elderly with sudden pull of triceps & brachialis
- High energy direct trauma in younger patients

Classification

- Type 1: undisplaced
- Type 2: displaced
    A. Avulsion
    B. Transverse + oblique
    C. Comminuted
    D. Fracture / dislocations

Management

Analgesia
If undisplaced → Long POP +sling for 3-4w
If displaced (disruption or extensor mechanism) → tension band wiring (TBW) or dorsal plate

Complications

- ↓ROM - up to 50% have some loss of ROM – but only ~3% functional loss
- Post traumatic OA- rare as is a non weight bearing joint
- Non-union - ~5%
- In elderly can take a conservative approach or can excise the olecranon fragment.

Radial Head Fractures

Features

- Most common adult elbow #.
- Usually due to a FOOSH. May be associated with dislocation of the elbow
- >50% have other injuries about the elbow
- Imaging: AP & lat XR (if no # seen & fat pads can do extra radiocapitellar views)

Classification: (Mason)

- Type 1: Undisplaced
- Type 2: Marginal fracture with displacement>2mm or >30°
- Type 3: Comminuted
- Type 4: Associated with elbow dislocation

Essex-Lopresti/ALRUD lesion:

Acute longitudinal (distal) radio-ulnar dislocation from disruption of interosseous ligament can coexist with (comminuted) #.

Management

Children

- Acceptable angulation of 30° in young children (15° in child>10y).
- Otherwise: manipulation under GA. >45° and irreducible: Open reduction.

Adults

- Type 1: Sling and early mobilisation as soon as comfortable
- Type 2: As for Type 1 unless with mechanical block (excise head/ORIF) or Essex-Lopresti (save head/ORIF)
- Type 3: Excise head unless Essex-Lopresti or dislocation.
- Type 4: Surgery to retain head or replace with prosthetic.

Complications

- Reduced motion
- Radial head overgrowth
- Premature physeal closure
- Non union
- Avascular necrosis of the radial head
- Alteration in the carrying angle
    - Neuromuscular problems (i.e. valgus deformity with ulna nerve problems)
- Radio/ulna synostosis
- Myositis ossificans

Ulna & Radius Shaft Fractures

Features

- Imaging: AP & lat XR
- Must include elbow & wrist to look for 2nd # or dislocation.
- Commonly both bones, may be open #

Classification:

- Commonly split bones into thirds.
- **Monteggia**: Proximal third ulna # with radial head dislocation – usually anterior (check midline of radial head passes through centre of capitellum on all views).
- **Nightstick:** Isolated midshaft ulna fracture
- **Galeazzi:** Distal ~1/3 radius # + distal radio-ulnar joint (DRUJ) dislocation.
  DRUJ dislocation signs:
    - Shortening of radius by 5mm
    - Fractured base ulna styloid process
    - Widened DRUJ space by 2mm on AP view
    - Subluxation/dislocation of DRUJ on lateral view

Management

- Angulation <10° & translation<50% acceptable for above elbow POP.
- Otherwise ORIF.
- Monteggia #: ORIF in adults, often closed reduction in children.
- Galeazzi #: Usually ORIF or radius ± surgery to DRUJ.

Complications

Compartment syndrome
Nerve injuries – rare except for post intraosseous n. in Moteggia #s.
Vascular – ulnar or radial arteries.
Stiffness
Synostosis – cross union (RF: multi-trauma, bones #'ed at same point, delayed Mx)