

Common (5% of fractures) and mostly not requiring surgery.

## Metacarpal Fractures

### Features

- Check tendons & neurovascular function
- Check for any rotational deformity (extend then flex fingers fully)
- Imaging: XR - AP, oblique, true lateral for carpo-metacarpal dislocation

### Classification

- Open or closed
- Type of fracture - transverse, oblique, spiral, intra-articular and avulsion
- Location - head (rare), neck(weakest), shaft & base

### Bennett's Fracture

Fracture-dislocation of carpo-metacarpal joint of thumb.

Commonest thumb fracture.

Intra-articular oblique # runs from joint to ulna side of 1<sup>st</sup> MC shaft.

Larger distal MC fragment dislocated proximally & radially by APL.

Mx: Closed reduction+pin/wires or ORIF if >3mm displacement.

### Rolando Fracture

Comminuted intra-articular # at base of 1<sup>st</sup> MC often a Y or T shaped.

Similar to Bennets but in 3 parts and worse prognosis.



### Gamekeeper's/Skier's Thumb ± Fracture

Ulnar collateral ligament injury at 1<sup>st</sup> MCPJ. May avulse fragment (usually of phalanx) ± displacement. Examine with stress test (controversial) if ligament lax in flexion (>35° or >10° more than other side) or malrotations, sig displacement or large fracture → OT else treat conservatively in scaphoid POP for 6wk.

### Boxer's Fracture

Fracture of neck of 5<sup>th</sup> MC, often with volar angulation. Punching injury.

### Management

*Head #:* Commonly comminuted → surgery.

*Neck #:* Usually 5<sup>th</sup> MC. Up to 70° volar angulation tolerated (~15° with other MCs) with a splint for 1 week then mobilise. Otherwise closed reduction & wiring.

*Shaft #:* Angulation of 30° (little), 20° (ring), 5° (index, middle) acceptable → splint MCPJ @ 70°.

*Basal #:* Treated as shaft fractures.

*OT (wires or ORIF) if:*

- Open fractures
- Intra-articular fractures
- Malrotation
- Bone loss
- Polytrauma
- Multiple fractures in one hand.
- Neurovascular/tendon injury

### Complications

Malunion - residual angulation or rotational malalignment.

# Phalangeal Fractures

## Features

- Need to assess for nailbed, neurovascular and tendon injuries. Malrotation
- There is direct relationship between period of immobilization & final result; - poor results are obtained in finger #s immobilised for more than 3 weeks
- Transverse # are more stable than oblique & spiral #s.
- Undisplaced transverse fractures generally treated w/o surgery &

## Management

### *Proximal & middle phalanx fractures*

- Deformity: proximal # usually have flexion of proximal fragment. Middle phalanx may be deformed either in flexion or extension depending on # site.
- Shaft #: If undisplaced & stable: buddy strap. If stable after closed reduction: resting splint (MCPJ @ 70-90° & fingers extended). If unstable: OT - wires, plates or ORIF.
- Neck #: reduce & fix with wires.
- Intra-articular #: Need ortho r/v. Often need OT.

### *Distal phalanx*

- Tuft #: Repair nail bed and drain sub-ungual haematoma if present.
- Transverse #: Reduce and splint. Wire if unstable.
- Mallet finger: May just be extensor tendon injury or avulse part of distal phalanx. Mallet splint for 6-10w. 75% success rate. Surgery if fails or displacement of bony fragment >3mm or avulsion >30% joint surface or volar subluxation. Surgery not always successful.

## Complications

*Malrotation*

*Angulation*

*Non-union: rare*

*Stiffness: common with distal phalanx # or if immobilised >4w*

*Infection: 2% open #*