Project: Ghana Emergency Medicine Collaborative

Document Title: Radiology: X-rays of the Hand and Wrist

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Overview

- Brief review of normal radiographic anatomy
- Cases
  - I give you mechanism, complaint, and X-ray
  - You give me diagnosis, treatment, and eponym
- Shameless unrelated entertainment
I Will not Cover...

- Phalanx fractures
- Soft tissue injuries (except that can be detected on plain film)
- Cross sectional imaging
Carpal Bones
Normal Wrist PA
Normal Wrist Lateral

- First Metacarpal
- Hook of Hamate
- Trapezium
- Scaphoid
- Pisiform
- Lunate
- Ulnar Styloid
- Ulna
- Pronator Quadratus Fat Stripe
- Radius
Normal Hand PA
Case 1

- Hyperextension
- Tender and swollen thumb
Case 1

- Bennett Fracture
  - Fx-Disloc of base of thumb MC
  - APL tendon
- Splint, Hand referral
- Will need OR
Case 2

- FOOSH, wrist pain
- Deformity to dorsal wrist
- Decreased sensation to volar palm
Case 2

- Peri-lunate dislocation
- Lunate remains articulated with radius
- Distal carpal bones translate dorsally
- Emergent Hand consult
Case 3

- FOOSH, pain in wrist
Case 3

- Lunate dislocation
- Disruption of all lunate ligaments
- Emergent Hand consultation
Case 4

- FOOSH
- Pain in wrist
Case 4

Source undetermined
Case 4

- Colles fracture

Abigor, Wikimedia Commons
Sletuffe, Wikimedia Commons
Case 4

- Colles fracture
  - Distal metaphysis of the radius
  - Dorsal displacement and shortening
    - Silver fork deformity
  - Reduction, splinting
  - Be alert for elbow and scaphoid injuries
Case 5

- Skier
- Tender and swollen thumb
Case 5

- Gamekeeper’s Thumb/Skier’s Thumb/ Breakdancer’s Thumb
  - Disruption of the UCL of the thumb MCP
  - Only visible on plain film when avulsion fx is present
- Splint, Hand Referral
- Will likely need OR
Case 6

- Punched a wall
- Wrist pain
Case 6

- Die-punch or lunate load fracture
- Axial force along hand
- Splint, urgent referral
Case 7

- FOOSH
- Pain and tenderness to base of thumb and radial wrist
Case 7

- Scapho-lunate dissociation
- Terry Thomas/David Letterman sign
  - Scapho-lunate space >4mm
- Splint
- Urgent f/u
Case 7

Source undetermined
Case 8

- Assaulted with bat
- Wrist pain
Case 8

- Chauffeur's/Backfire/Hutchinson Fracture
- Direct blow to distal edge of radius
- Often scapholunate dissociation
- Splint, urgent referral
Case 9

- 13 yo, FOOSH
- Pain to radial wrist
Case 9

- Scaphoid fracture
- Frequently missed
- High litigation
- Splint, urgent hand
Case 9

Source undetermined

Source undetermined
Case 9

- Scapholunate Advance Collapse
Case 10

- Punched a wall
- Hand pain
Case 10

- Boxer's fracture
- Splint
- Hand referral
Case 10

- Displacement in metacarpal fractures
- Reduce
  - > 10° in 2 and 3
  - > 30° in 4 and 5
  - Any rotation
Case 11

- FOOSH
- Dorsal wrist pain
Case 11

- Triquetrum fracture
- Most dorsal bone on lateral
- Dorsal fracture most common
- Splint, referral
Case 12

- 14 yo boy
- Basketball injury
- Wrist pain
Case 12

- Normal adolescent wrist
- Partially closed physes
- Splint
Case 13

- Thumb hyperextension
- Tender and swollen thumb
Case 13

- Rolando Fracture
  - AKA double-Bennett
- Splint, Hand referral
- Will need OR
Case 14

- Tried to catch falling wine glass
Case 14

- Hand foreign body
- Significant litigation
Case 15

- Nightstick injury
Case 15

- Chauffeur fracture
- Splint, routine Hand referral
Case 16

- Punched a wall
- Wrist pain
Case 16

- Die-punch/Lunate load fracture
- Splint, urgent Hand referral
Case 17

- FOOSH
- Wrist pain
Case 17

- Scaphoid fracture
- Thumb spica splint
- Urgent Hand referral
Case 18

- Nintendo Wii accident
- Thumb pain
Case 18

- Gamekeeper's thumb
- Thumb spica
- Urgent Hand referral
Case 19

- Barfight
- Hand pain
Case 19

- Spiral fracture of second metacarpal
- Splint, referral
Case 20

- MVC
- Hand pain
- Lateral?
Case 20

- Lateral:
Case 20

- Dislocation of MCC joints 3-5
- Hand consultation, reduction
Case 21

- Punched a bouncer
- Hand pain
Case 22

- 5th MC body fracture
- Reduction?
- Splint
Case 23

- Fall on supinated hand
- Wrist pain
Case 23

- Smith's fracture (aka reversed Colles)
- Distal radius
- Impaction and volar displacement
- Reduction, splint
Case 24

- FOOSH
- Wrist pain
- Lateral?
Case 24

- Lateral:
Case 24

- Peri-lunate dislocation
- Emergent Hand consultation
Case 25

- FOOSH
- Wrist pain
- Lateral?
Case 25

- Lateral:
Case 25

- Triquetral dorsal chip fracture
- Splint
- Urgent Hand referral
Case 26

- FOOSH
- Wrist pain
Case 26

- Scaphoid fracture
- Thumb spica splint
- Urgent Hand referral