

Project: Ghana Emergency Medicine Collaborative

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

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Radiology: X-rays of the Hand and Wrist

Christian Jacobus, MD
April 11, 2007

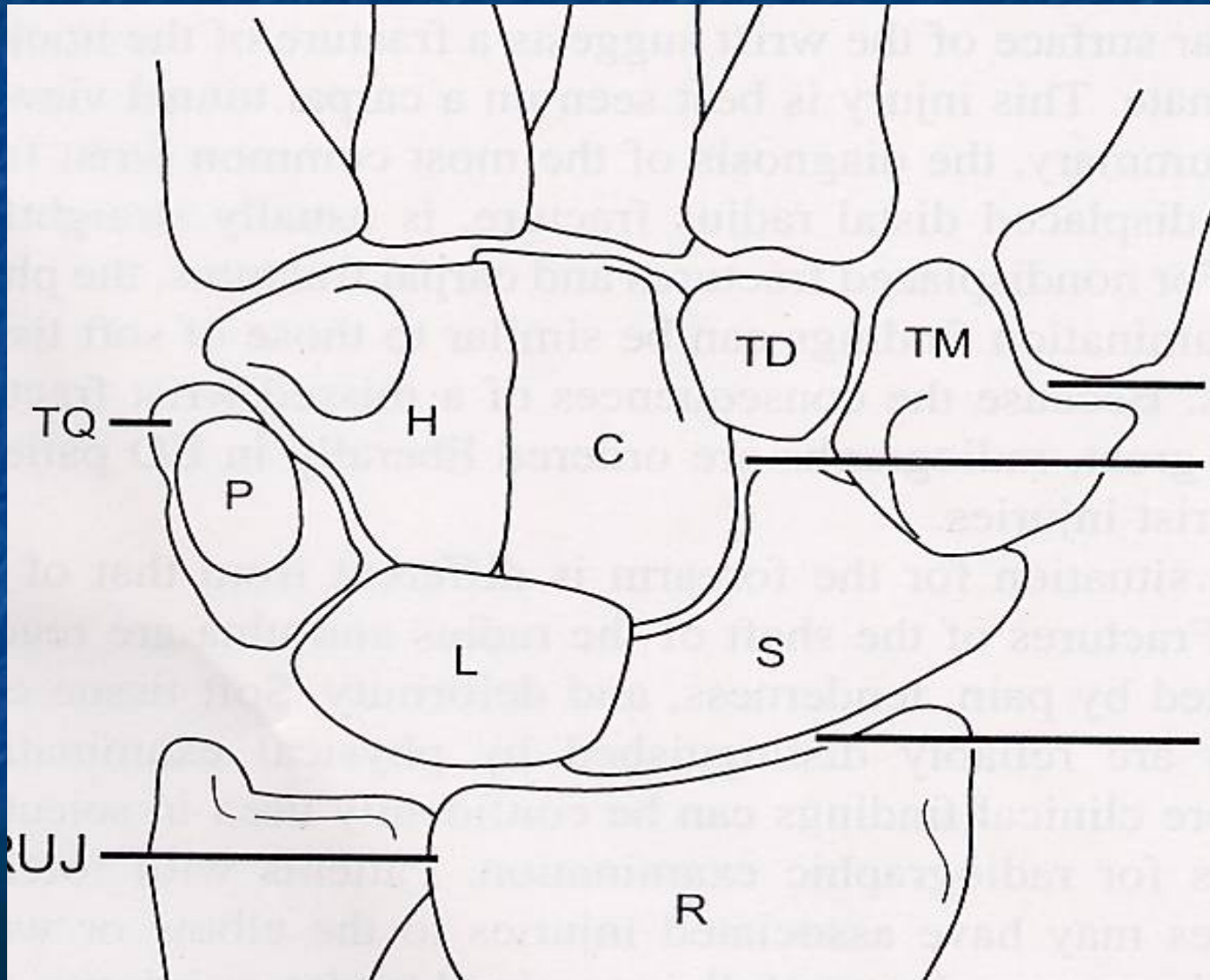
Overview

- 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

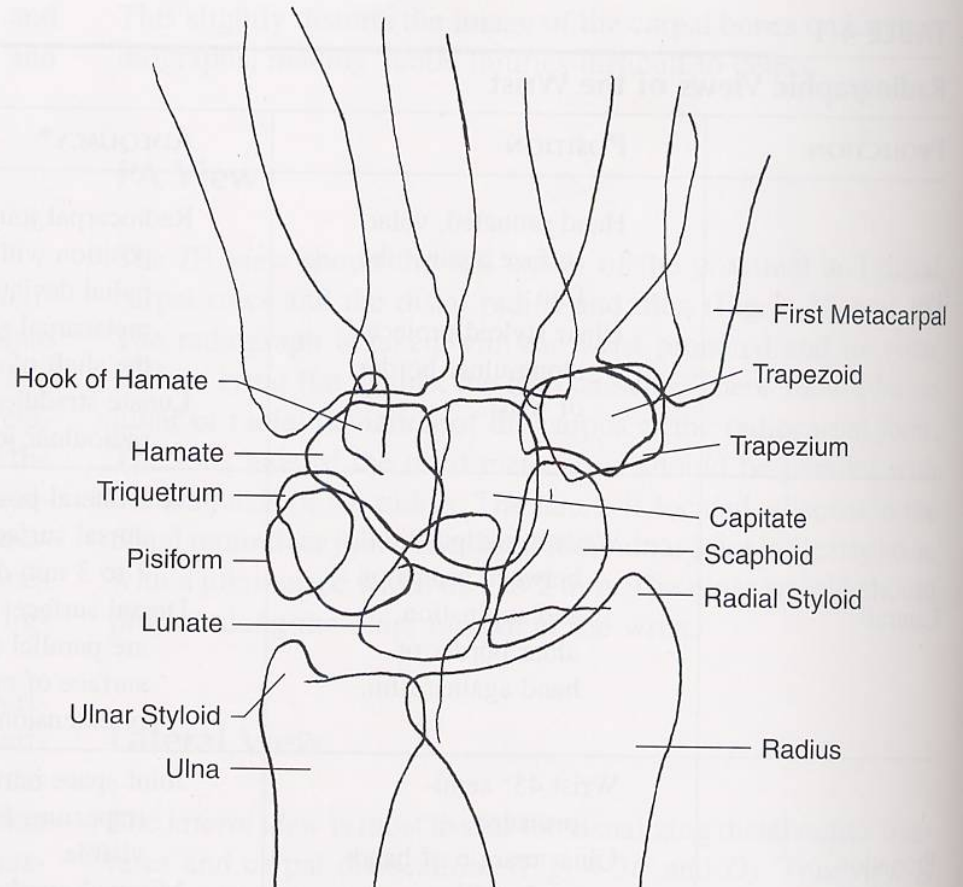
I Will not Cover...

- Phalanx fractures
- Soft tissue injuries (except that can be detected on plain film)
- Cross sectional imaging

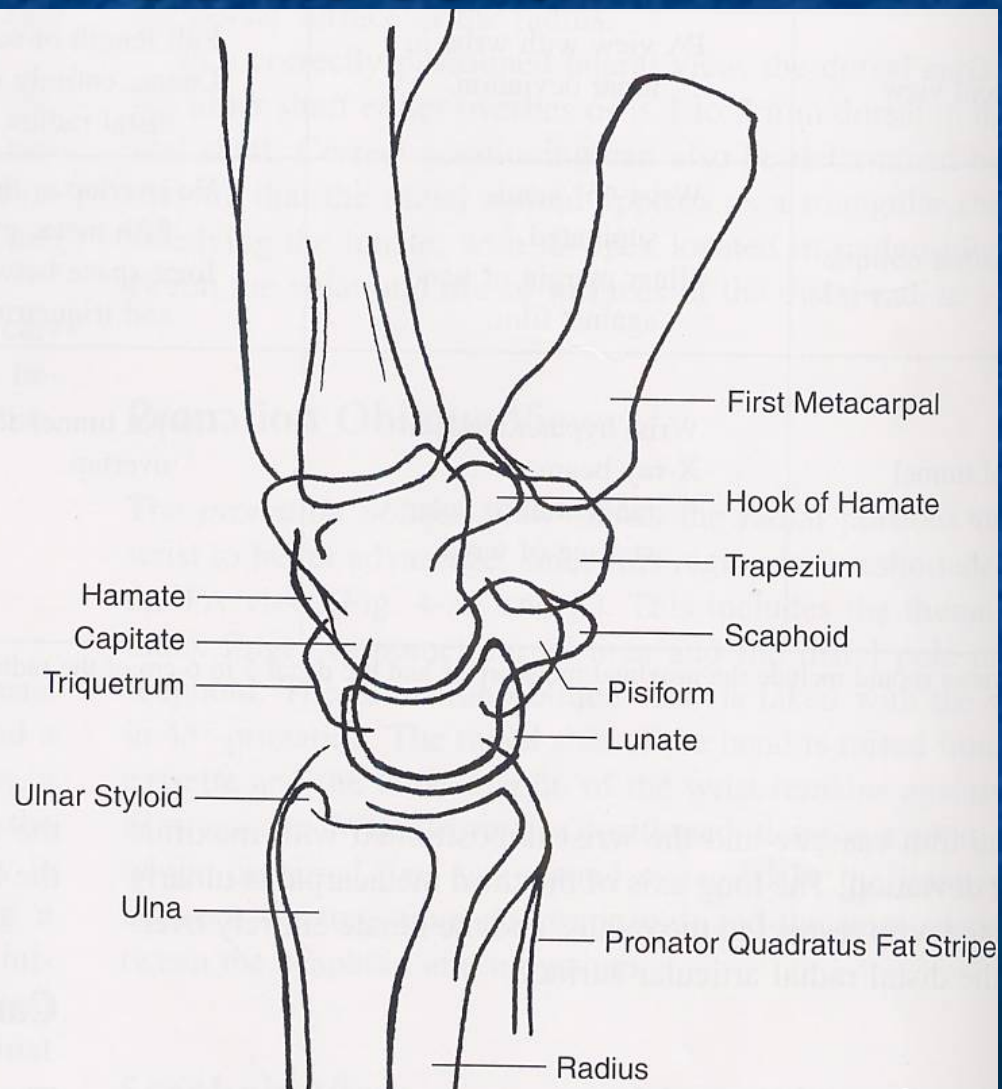
Carpal Bones



Normal Wrist PA



Normal Wrist Lateral



Normal Hand PA



Normal Hand Lateral



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



PD-INEL Source undetermined

Case 2

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

Case 2

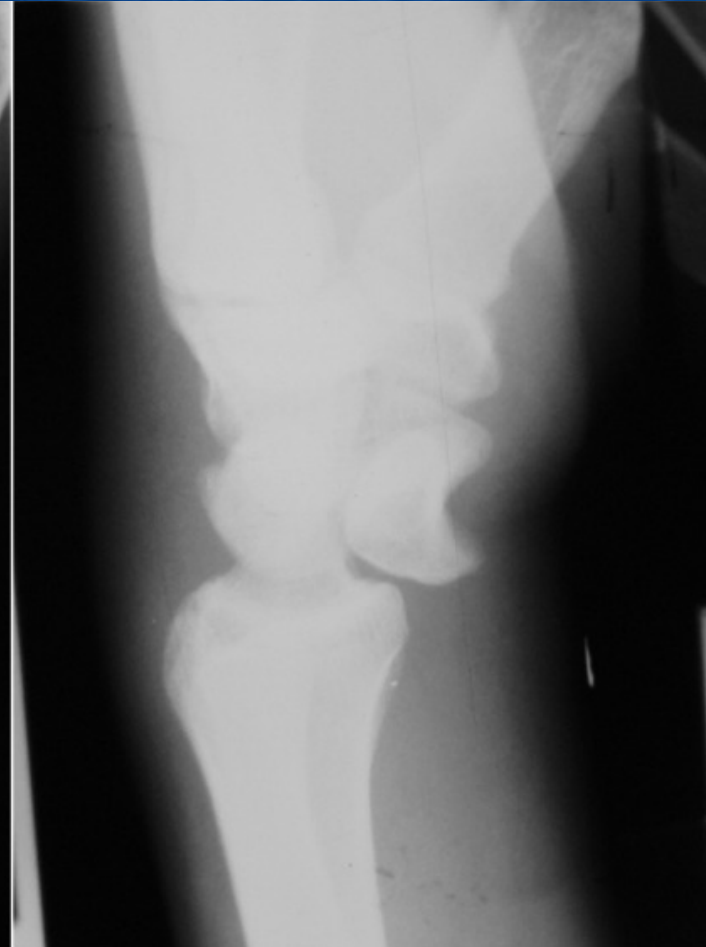


Case 2

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

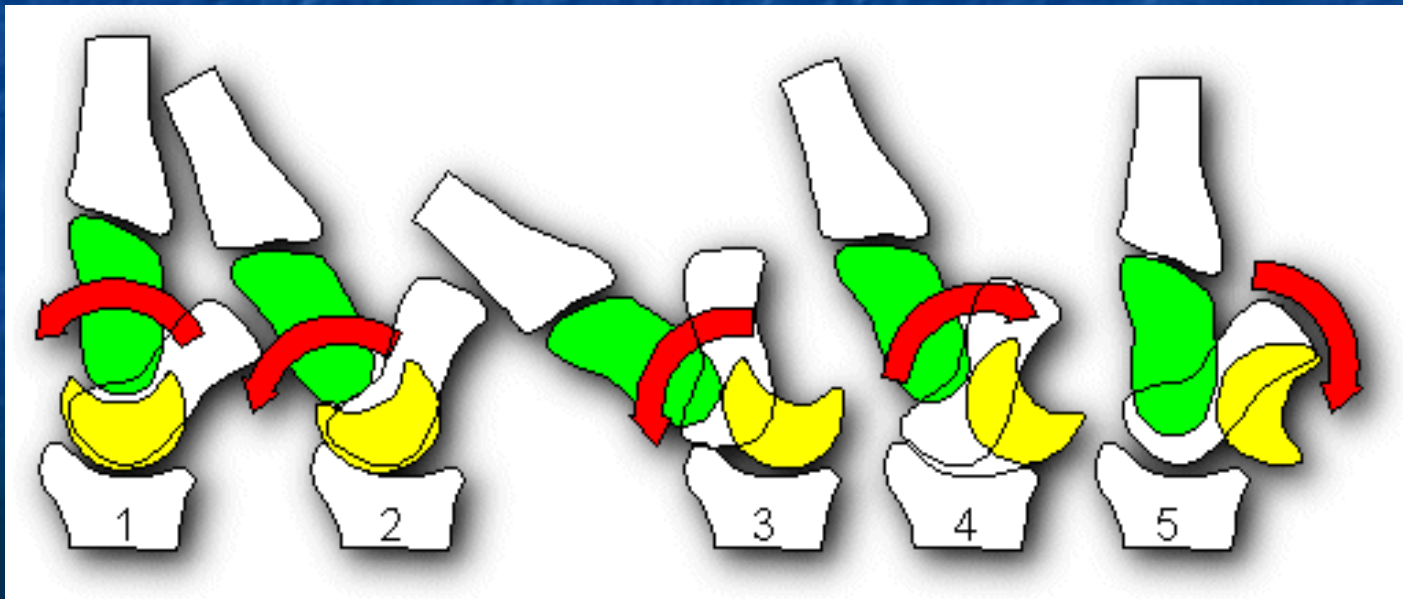
Case 3

- FOOSH, pain in wrist



Case 3

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



Case 4

- FOOSH
- Pain in wrist

Case 4



© PD-INEL Source undetermined



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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

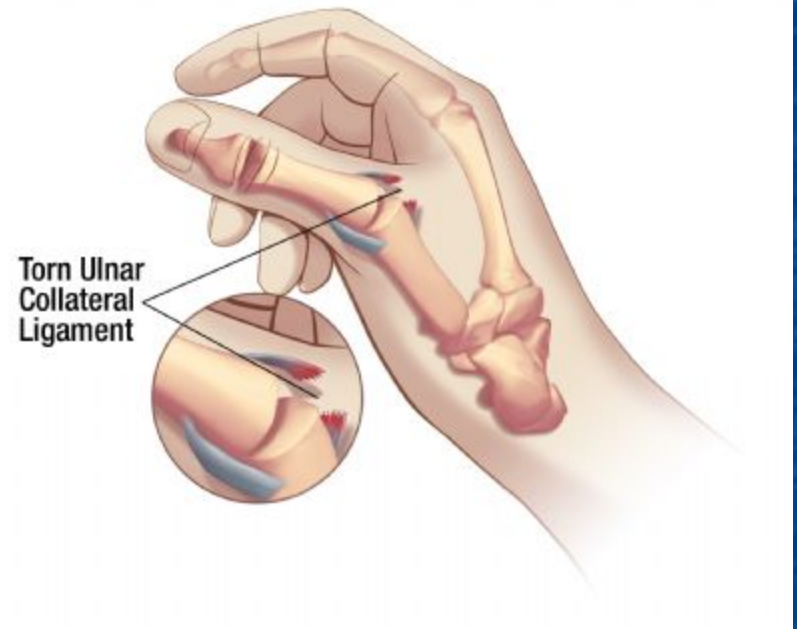
Case 5



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Source undetermined

Game Keeper's Thumb



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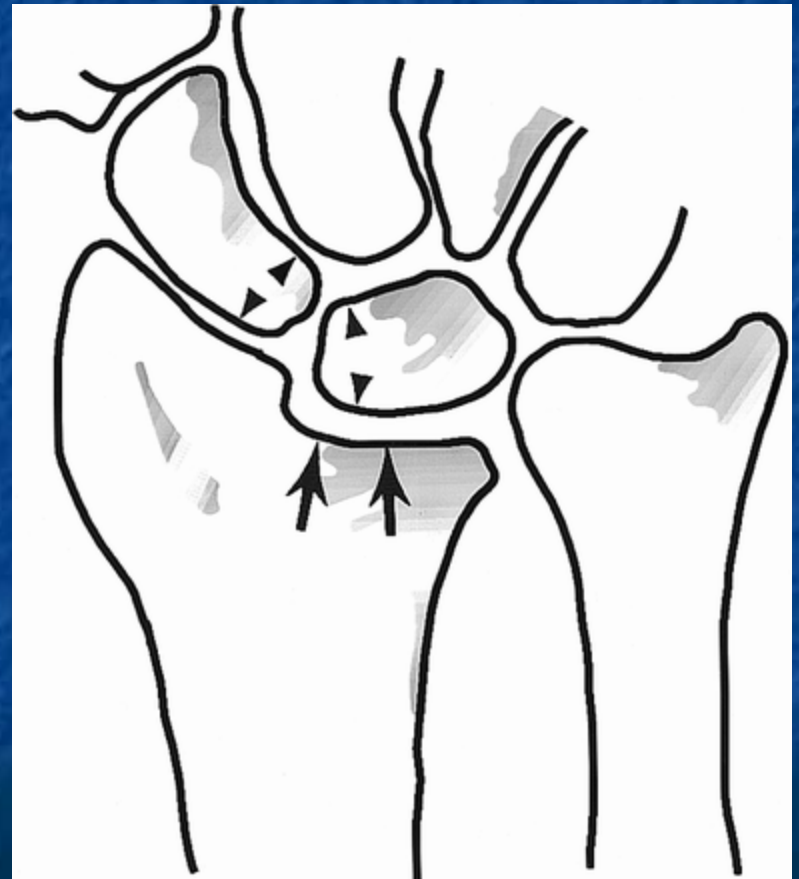
Case 6

- 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



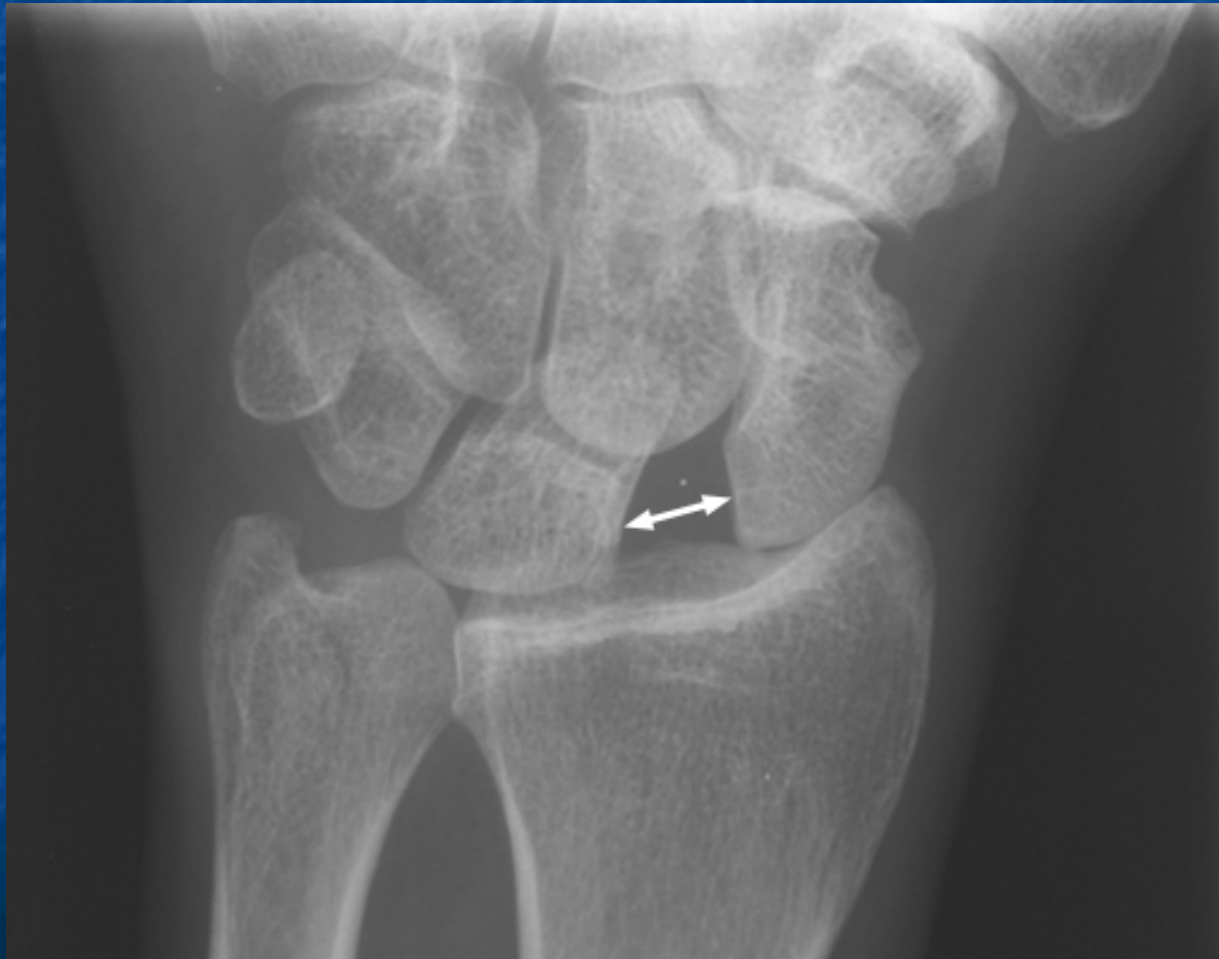
Case 7

- Scapho-lunate dissociation
- Terry Thomas/David Letterman sign
 - Scapho-lunate space $>4\text{mm}$
- Splint
- Urgent f/u



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Case 7



Case 8

- Assaulted with bat
- Wrist pain



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Source undetermined

Case 8

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

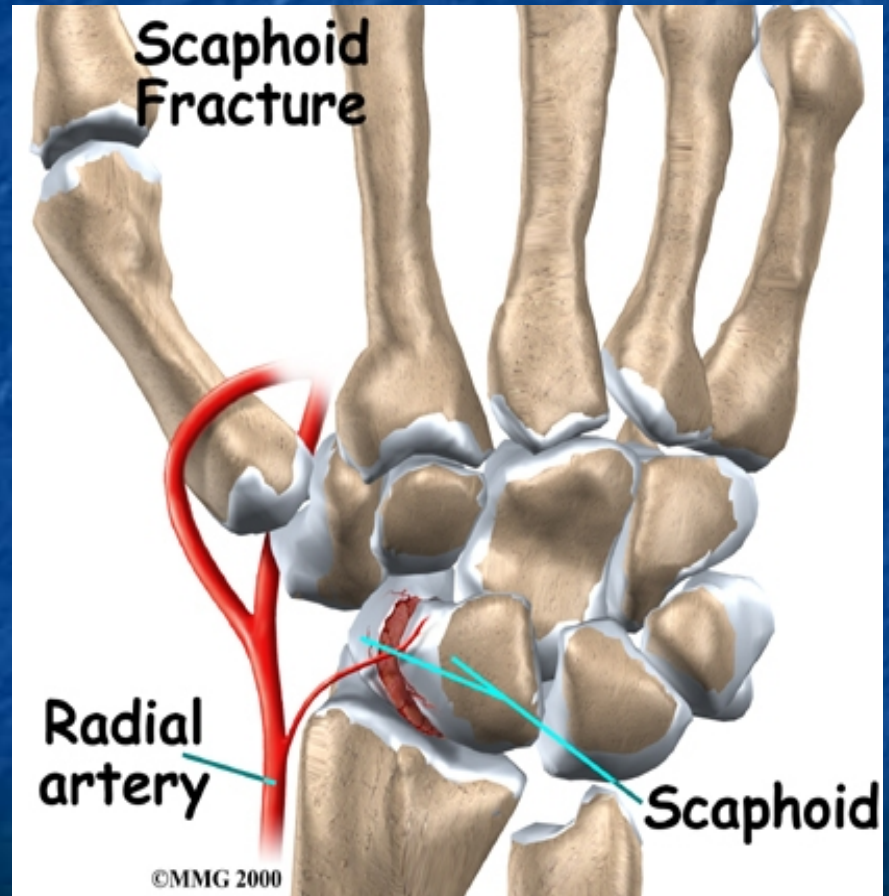
Case 9

- 13 yo, FOOSH
- Pain to radial wrist



Case 9

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



Case 9



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Case 9

■ Scapholunate Advance Collapse



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Source undetermined



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Source undetermined

Case 10

- Punched a wall
- Hand pain



Case 10

- Boxer's fracture
- Splint
- Hand referral



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Source undetermined

Case 10

- Displacement in metacarpal fractures
- Reduce
 - $> 10^\circ$ in 2 and 3
 - $> 30^\circ$ 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



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Source undetermined

Case 12

- Normal adolescent wrist
- Partially closed physes
- Splint

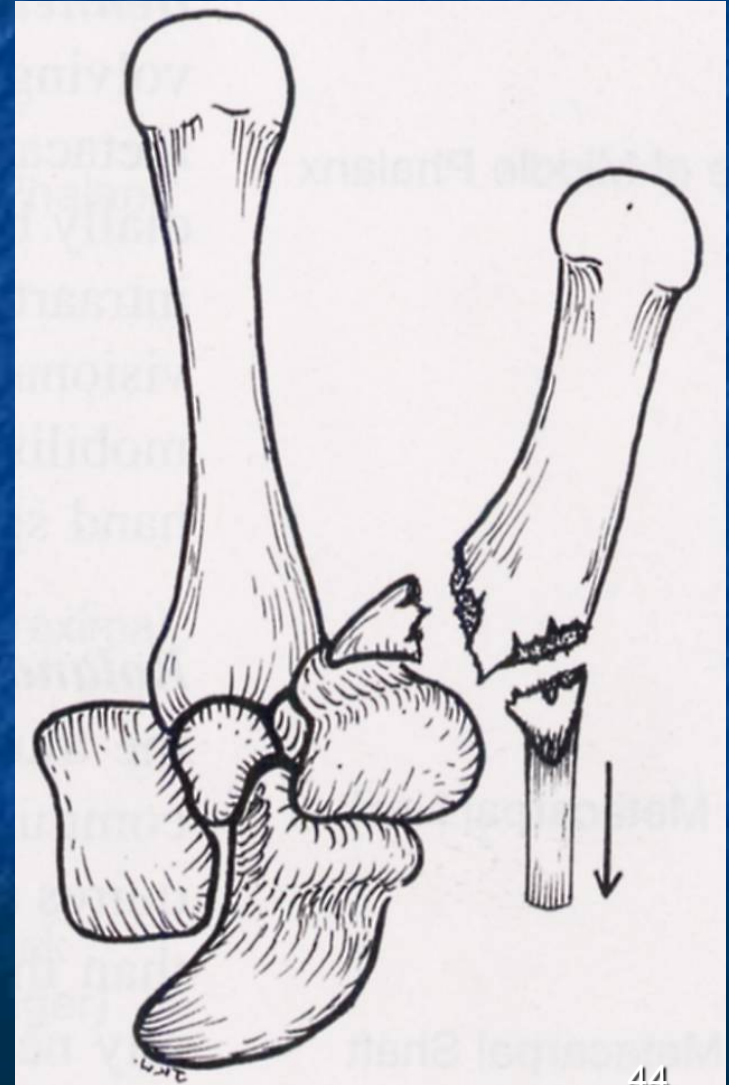
Case 13

- Thumb hyper-extension
- Tender and swollen thumb



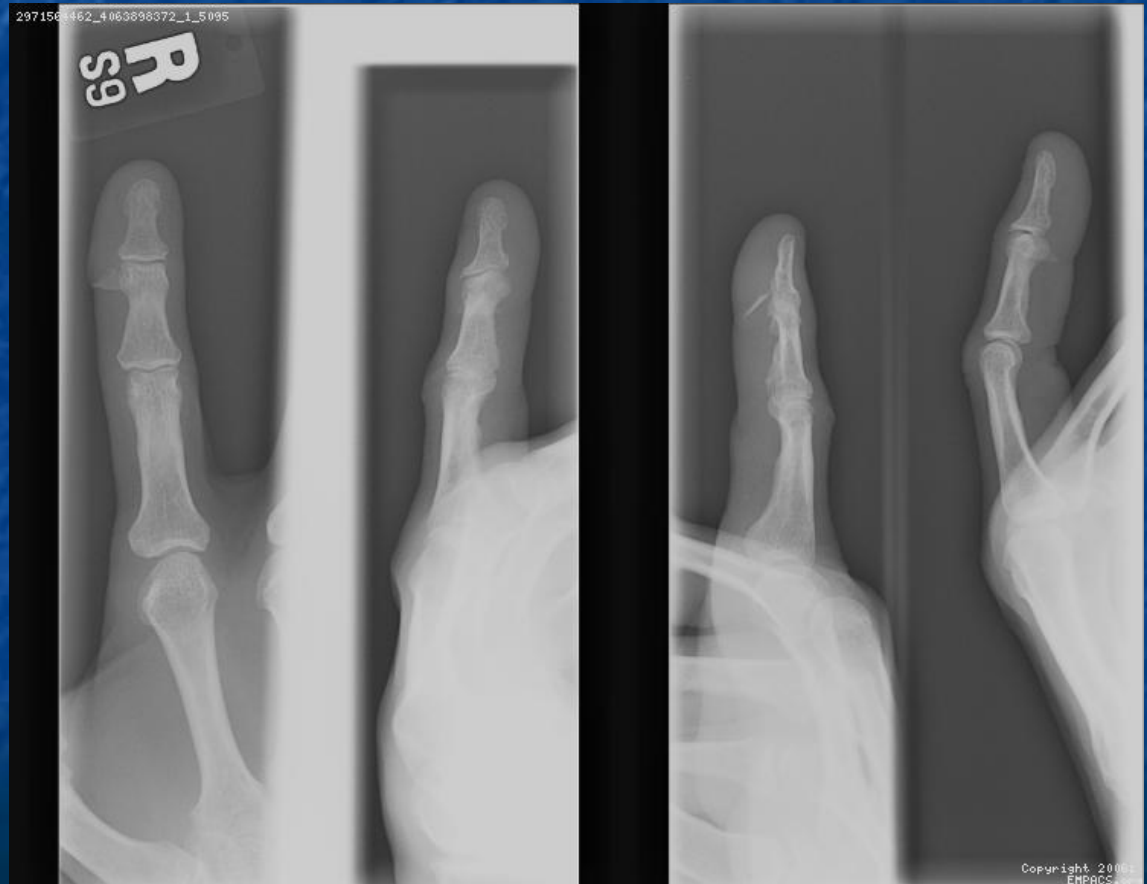
Case 13

- 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



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Source undetermined

Case 17

- Scaphoid fracture
- Thumb spica splint
- Urgent Hand referral

Case 18

- Nintendo Wii accident
- Thumb pain

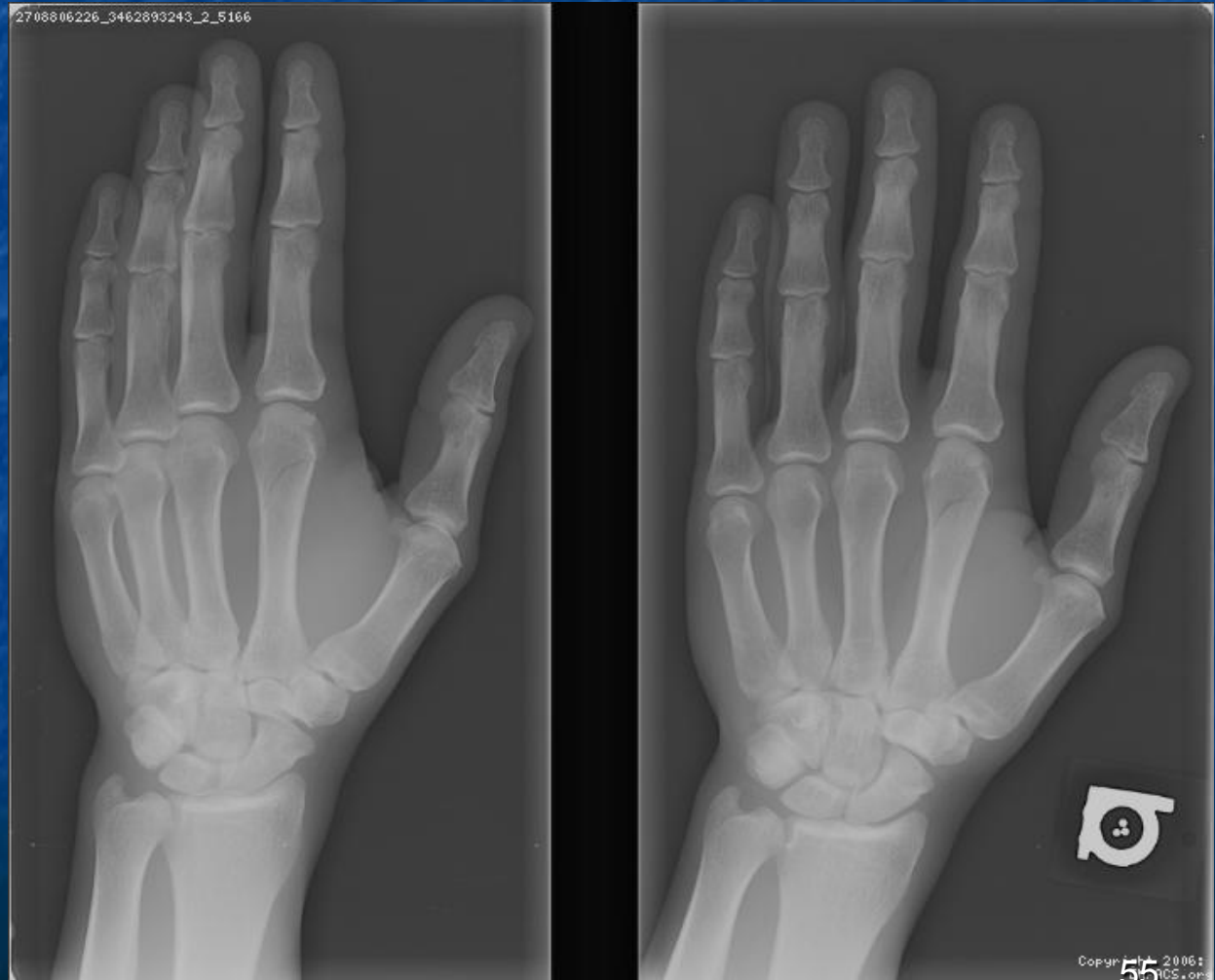


Case 18

- 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?

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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