

Hand Injuries in Sports



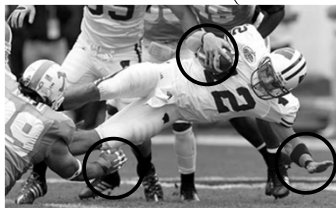
Mark Bagg, MD
Hand Center of San Antonio

FINANCIAL DISCLOSURE

Dr. Mark R. Bagg has disclosed that he receives fees for Non-CME Services Directly from Xioflex.

Hand Injuries in Sports

- “Hand-Eye Coordination”
- “Good Hands”
- “Ball Handling”
- “Hand-off”
- “Hands up”



Key Concept

- The "OR" Side



Key Concept

- The "ER" Side



Hand Injuries in Sports

- Tendon injuries
 - Jersey Finger
 - Mallet Finger
 - Boutonniere

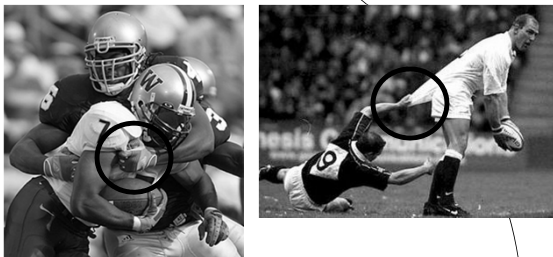
Hand Injuries in Sports

- Ligament Injuries
 - Gamekeeper Thumb (Skier's thumb)
 - Dislocations
 - "jammed" fingers

Hand Injuries in Sports

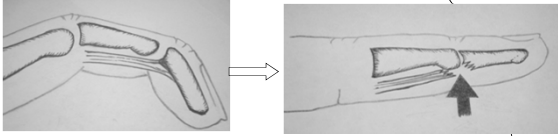
- Bony injuries
 - Phalangeal fractures
 - Metacarpal fractures
 - Carpal fractures
 - Wrist/distal radius fractures

Rugger Jersey Finger



Jersey Finger

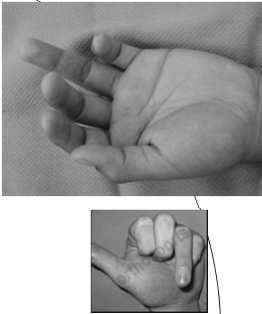
Flexor Digitorum Profundus (FDP) ruptures



Flexed → "jerked" into extension


Jersey Finger

- Flexed digit rapidly "jerked" into extension
- 75% occur in ring finger
- Unable to actively flex DIP
- Needs surgical fixation



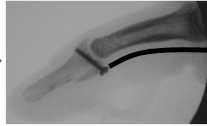
Jersey Finger

- May occur with or without fracture



Jersey Finger

- May occur with or without fracture



Needs surgery to "fix" the tendon

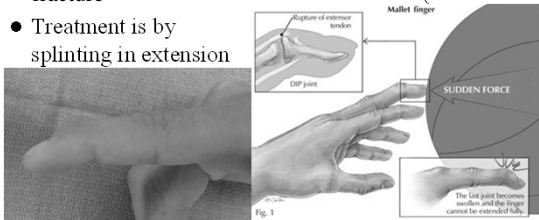
Jersey Finger

- Without fracture, still needs surgery



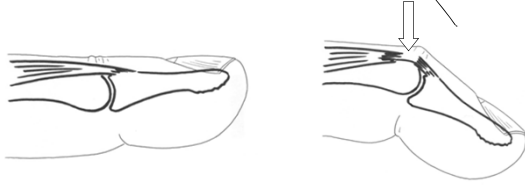
Mallet Finger (Drop Finger)

- Rarely needs surgery
- Also may have a fracture
- Treatment is by splinting in extension



Mallet Injury

- Terminal tendon is disrupted, allowing “droop at the DIP joint.



Mallet Finger

- Always get an X-ray



“Bony” mallet injury

Mallet Finger

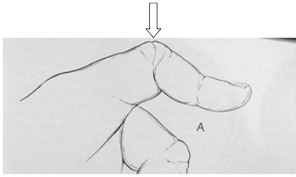
- Rarely require surgery
- Treatment is extension splinting, full time for six weeks, night-time for six more, if needed.
- Inform patient that they will always have a slight extension lag



Stack Splint

Boutonniere Injury

- Disruption of extensor tendon insertion into middle phalanx
- A classic result of a “jammed finger”



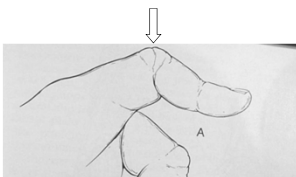
Boutonniere Injury

- The “jammed” finger with a swollen, flexed PIP joint



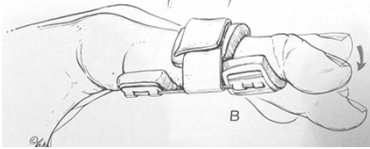
Boutonniere Injury

- Point of maximal tenderness will be dorsally where the tendon insertion is torn



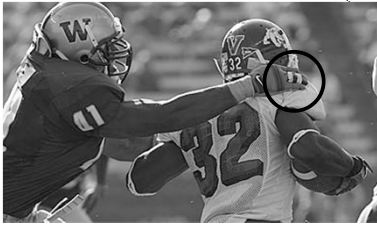
Boutonniere Injury

- Extension splint of the PIP joint for six weeks
- Leave the DIP free to flex/extend



Ligament Injuries

- Dislocations, hyperextension, lateral bending can result in ligament injuries



Buddy taping for ligament injury

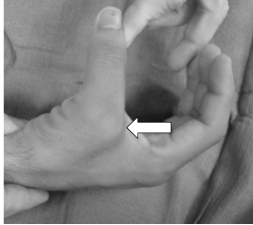
Gamekeeper (Skier's) Thumb

- Disruption of the ulnar collateral ligament of the MCP joint of the thumb



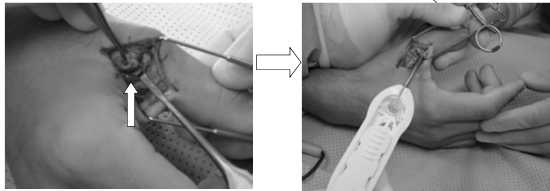
Gamekeeper Thumb

- Hyperextension or forced radial deviation of the thumb can tear the ligament (UCL)



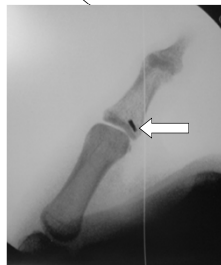
Gamekeeper Thumb

- If completely torn and displaced, should be fixed surgically



Gamekeeper Thumb

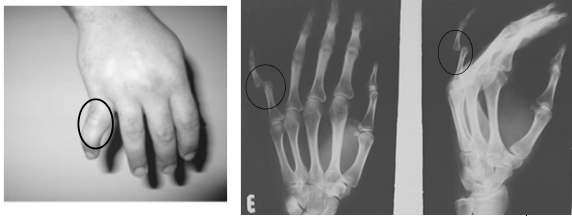
- Surgical fixation of the ligament restores joint congruity, allows ligament to heal to bone



Bone anchor for reattachment of UCL

Dislocations

- Dorsal PIP dislocations are common (Coach's Finger)



Dislocations

- Typically easily reduce with distal traction



Dislocations

- Fracture dislocations are more difficult to treat



Dislocations

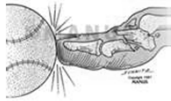
- Extension block splinting for fx/dislocation



Flexion reduces both the dislocation and the fracture

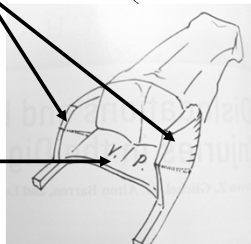
Finger "Sprains"

- "I jammed my finger"
- First rule out fracture/dislocation- X-RAY
- Then make sure it is NOT a boutonniere- ELSON TEST
- All the rest can be buddy taped



Finger "Sprains"

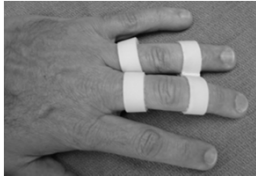
- Collateral ligaments
- Volar plate



Injuries to the volar plate and collateral ligaments=BUDDY TAPE

Finger Sprains

- Buddy tape allows protection AND early motion



Commercially available velcro strips



¼ inch tape, with gauze works fine too

Perilunate Dislocations

- With more serious trauma



Full weight on outstretched hand

Perilunate Dislocations

- With more serious trauma...



The AP looks OK...



Lateral = perilunate dislocation

Fractures

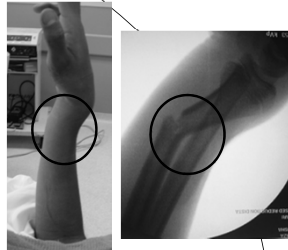
- Eight Carpals
- Five Metacarpals
- 14 phalanges

27 “little bones to break”

Add the radius and ulna=29

Common Sports Fractures

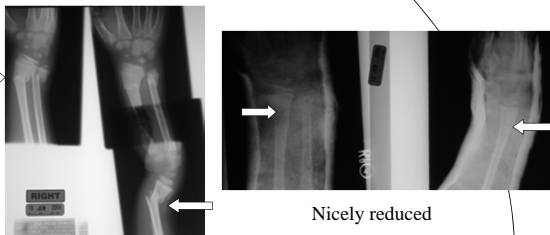
- Distal Radius
- Carpal Fracture (Scaphoid)
- Metacarpal fracture
- Phalangeal fracture



OUCH!

Distal Radius

- Most common fracture of the upper extremity



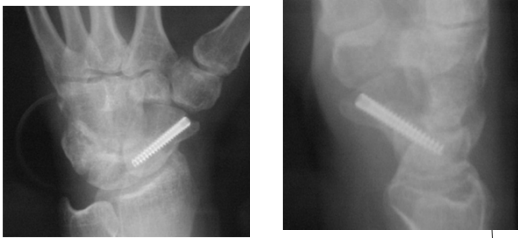
Carpal Fracture

- Scaphoid fracture is most common carpal fracture



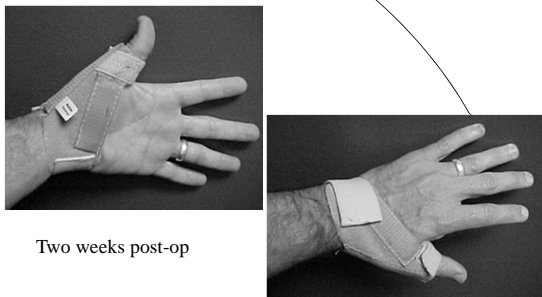
Scaphoid Fracture

- Can be treated in a thumb spica cast for THREE months, or...



Scaphoid Fracture

- Surgery allows earlier return to sports

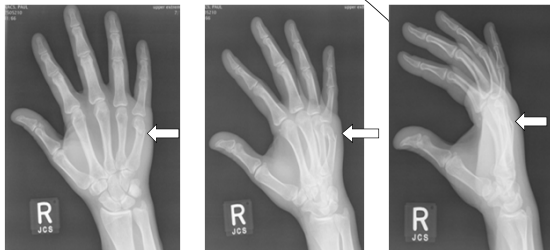


Metacarpal Fracture



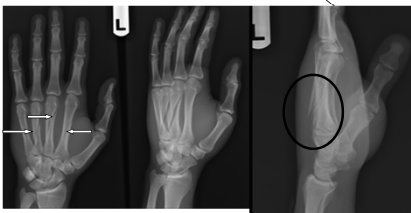
“Roundhouse” punch in boxing or extreme fighting....

Metacarpal Fracture



“Boxer’s Fracture”—5th Metacarpal Neck Fx

Multiple Metacarpal Fractures



- Can consider surgical treatment in an athlete to allow return to sports

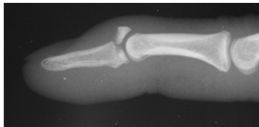
Multiple Metacarpal Fractures

- Rigid surgical fixation allows earlier return to sports



Phalangeal Fractures

- Range from small avulsions to comminuted and unstable



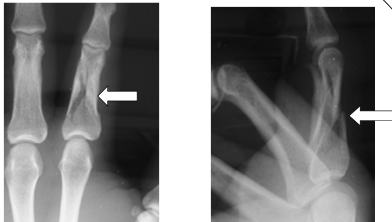
Not so bad...



Really bad....

Phalangeal Fractures

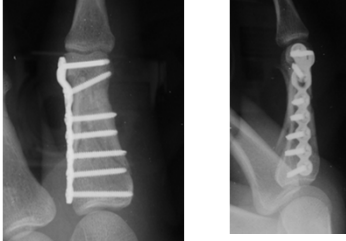
- What about in the athlete?



Comminuted proximal phalanx fracture in pro hockey player

Phalangeal Fracture

- ORIF allowed early return at three weeks



What about protection?

- Hand protection is very common in sports, especially contact sports



What about protection?

- Hand protection is very common in sports, especially contact sports



More than just for warmth...

What about protection?

- Hand protection is very common in sports, especially contact sports



Anyone *not* wearing gloves?

What about protection?

- Hand protection is very common in sports, especially contact sports



Even the “ultimate fighters” protect their hands

“Playing Casts”

- Athletes can return to play in many sports with some sort of protective splint, brace or cast.



Hyperextension blocking splint



Thumb spica tape/splint

Playing Casts



Summary

- Hand injuries are a major part of sports
- Treatment of the injured athlete must allow adequate healing
- Surgery may allow earlier return in some cases
- As a patient “advocate”, decisions may be tough

THANK YOU



- Questions?

Special thanks to Dr. Jack
Ingari

Tendon Injuries



50 caliber GSW to hand
