Hand Injuries in Sports

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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”
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 digit rapidly “jerked” into extension

75% occur in ring finger
Unable to actively flex DIP
Needs surgical fixation

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

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

![Buddy tape image]

Commercially available velcro strips

$\frac{3}{4}$ inch tape, with gauze works fine too

Perilunate Dislocations

- With more serious trauma

![Perilunate Dislocation image]

Full weight on outstretched hand

Perilunate Dislocations

- With more serious trauma...

![Perilunate Dislocation X-ray image]

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

Nicely reduced
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

Two weeks post-op
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

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