Ligamentous (and Tendon) Injuries of the Hand & Wrist

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May, 6th, 2016

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Disclosures

• None
Background

• Born: Seoul, South Korea

• Grew up: Walker, MN

• College: Concordia College
Background

• MD: University of Minnesota

• Orthopedic Residency: University of Washington

• Hand Fellowship: Mayo Clinic

• Twin Cities Orthopedics: 3rd year of practice
“the eye only sees what the mind knows”

- History: 80-90% of the diagnosis
- Physical exam: 90-95%
- Imaging:
  - X-ray
  - CT/MRI???
Athletes: Special Considerations

- Optimize non surgical treatments
- Long Term Health
- Performance
- Immediate/Early return to play
  - Career
  - Scholarship
  - Teammates
- Availability to accommodate/flexible
Sports Injuries

• History:
  – Complaint
  – Mechanism
• Anatomy of Injury
• PE findings
Sports Injuries

• Treatment options
  – Conservative
  – Surgical
• Return to play
Sports Injuries: Wrist

• SL (scapholunate) Ligament Disruption
• Ulnar sided injuries
  • Snapping ECU (extensor carpi ulnaris tendon subluxation)
  • TFCC (Triangular Fibrocartilage Complex) tear(s)
SL (Scapholunate) Ligament Tear

• **History:** Fall on hand/Axial load

• **Anatomy of Injury:** disruption of the SL ligament...primary dorsal aspect

• **PE findings:**
  – Weakness in grip
  – Pain
  – Positive Watson’s test
SL Ligament Anatomy

- Thick dorsal ligamentous portion of SLIL
- Proximal (fibrocartilage) region of SLIL
- Thin palmar ligamentous portion of SLIL
- Long radiolunate ligament
- Radioscapholunate ligament
- Neurovascular bundle
- Short radiolunate ligament

Labels:
- SLd
- SLpx
- SRL
- LRL
- T
- L
- S
- ST
- Dorsal
- Lunate
- Short radiolunate ligament
- Radius
- Palmar
- Neurovascular bundle
SL (Scapholunate) Ligament Tear

• Treatment:
  – Partial injury: Casting/Pinning
  – Complete tear: Surgical repair vs. reconstruction

• Return to play
  – 6 weeks cast
  – 3 months full activity
  – Year full strength
Ulnar Sided Wrist Pain

• Commonly referred: “back pain” of wrist & “black box”
• Multitude of structures…complex
• Pain with rotation/grip, loss strength, & instability
• Focus:
  – ECU snapping/subluxation
  – TFCC tears
    • Ulnar sided tears
    • UT (ulno-triquetral) ligament split tear
Ulnar Sided Wrist Pain: Differential Diagnosis

- TFCC
- ECU
- LT (Luno-triquetral) ligament tear
- Arthritis
- Hook Hamate fracture/nonunion
- Ganglion cysts
- Tendonopathies
TFCC: Triangular Fibrocartilage Complex Tear

• History: Ulnar sided wrist pain s/p injury or fall
  – Specific point & time
  – Months/Years of sxs

• Anatomy of Injury: ligament tear

• Continuation of axis of rotation distal to ulna styloid
TFCC: UT (ulno-triquetral) Ligament Split tear
TFCC: UT (ulno-triquetral) Ligament Split tear

- Fovea Test
- MRI 50-60% sensitive
- Dx: Based on H&P
- Gold Standard: Scope
TFCC: Triangular Fibrocartilage Complex Tear

• Treatment
  – Immobilization
  – Arthroscopic surgery & repair

• Return to play
  – Surgery is done primary in the off season
  – Splint during season if possible
TFCC: UT (ulno-triquetral) Ligament Split tear

- Arthroscopic view of UT split tear & repair
Snapping Extensor Carpi Ulnaris (ECU) Tendon Subluxation

- History: Pain with rotation (golf/tennis)
- Anatomy: ECU tendon subsheath rupture
- PE: Snapping/subluxation of ECU with rotation, decrease grip
Snapping Extensor Carpi Ulnaris (ECU) Tendon Subluxation

• Diagnosis: PE place thumb ulnar ECU/MRI
• Treatments:
  – Splint/cast
  – ECU tendon subshealth reconstruction
Snapping Extensor Carpi Ulnaris (ECU) Tendon Subluxation

- Return to play no restrictions 3 months
- Excellent outcomes
Sports Injuries: Hand

- Thumb UCL: “Skier’s/Gamekeeper’s thumb”
- Finger Dislocations
- Flexor tendon rupture: “Jersey Finger”
Thumb UCL
Skiers/Gamekeepers Thumb

• History: Fall & catches thumb
• Mechanism: radial deviation of thumb at MCP
• Anatomy of Injury: rupture of the ulnar collateral ligament
Thumb UCL
Skiers/Gamekeepers Thumb

- Importance: allows for grip/pinch
- PE: Unstable at MCP with radial deviation
Thumb UCL
Gamekeepers/Skier’s Thumb

- Historically: Scottish rabbit hunters
- Modern: Ski pole & thumb impact
Thumb UCL
“Stener” Lesion

- Tear of ligament with interposed adductor aponeurosis
- Surgical treatment required
- Timing of treatment: varies
- Return to play: 0-6 weeks
Finger: PIP Dislocation

• History:
  – Mechanism: axial load (primarily dorsal dislocation)
  – Complaint: pain with deformity, loss ROM

• Anatomy of Injury:

• PE findings:
  – Deformity
  – Pain
Finger: PIP Dislocation

• **Treatment option**
  – Immediate closed reduction: technique
  – Buddy tape
• **Immediate return to play**
Finger: PIP Dislocation

- Irreducible
  - Volar plate
  - Lateral collateral
- Not a “dislocation”
  - Fracture
  - Stabilization: Splint vs. surgical
- Surgical treatment
  - Irreducible
  - Unstable: bony
Jersey Finger: Rupture of FDP

• History:
  – Mechanism: finger forcibly flexing while hyperextended (eccentric contraction)
  – Complaint: pain, loss ROM, decrease grip

• Anatomy of Injury: Muscle stronger than tendon insertion site

• PE findings
  – Unable to flex at DIP joint
  – Swelling & mass in palm
Jersey Finger: Rupture of FDP of Ring Finger

- Most common Jersey Finger
- Most distal with flexion: absorbs most energy
- Least independent motion of digits
- Weaker than FDP of middle
Jersey Finger: Rupture of FDP

- Treatment options
  - Conservative: unfortunately poor option
  - Surgical: reattached flexor tendon

- Return to play: full at 3 months
Thank You

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