10 Sports Injuries Not to Miss

Jessica Juntunen, MD
Primary Care Sports Medicine
I have no financial interests or relationships to disclose in regards to this presentation.
• 12 yo RHD male baseball pitcher presents with R elbow pain for one month. Began after pitching back-to-back games at a tournament. Doesn’t recall feeling a pop or any visible bruising. Localized medially. Greatest pain with late cocking phase of pitch. Seems to improve with rest, but returns every time he tries to return to pitching.
Little league elbow

- apophysitis of the medial epicondyle growth plate
- due to repeated valgus stress, most commonly associated with overhead throwing
- associated with increase # pitches and decrease in rest period between seasons
- 9-12 yo
• adults tend to injure UCL, while greatest force is localized to UCL attachment in adolescents

• most will have normal XR

• COMPARISON VIEWS

• MRI may help to confirm diagnosis or evaluate for any ligamentous injury
• treatment = REST for 3 months*

• USA Baseball Medical and Safety Advisory Committee

• pitch counts
  • 8-10 yo: 50
  • 11-14 yo: 75
  • 15-16 yo: 90
  • 17-18 yo: 105

• for pitchers, 3mo rest from all overhead throwing

• physical therapy

• eventual, gradual return to throwing with interval throwing program
• 14yo M RHD pitcher presents with R shoulder pain x 6 wk. Pain with pitching - worst in cocking and deceleration phases. Tender lateral shoulder/proximal humerus. Improves with rest.
Little League shoulder

• Apophysitis/epiphysiolyis of proximal humerus

• Adolescent males > females

• Pain in both late cocking (rotational torque) and deceleration (distraction) phase of pitch

• Pitch # greatest risk factor
• May report decreased pitch velocity

• On exam, may have:
  • Tenderness at level of physis
  • Pain in ER
  • GIRD

• XR to evaluate for widening

• MRI may be useful to confirm dx and r/o other pathology

• Treatment: 3mo rest, PT, gradual throwing program
• 22 yo F college basketball player presents with R wrist pain following FOOSH injury onto R hand. Pain along radial side of hand and wrist. Some swelling of thenar eminence.
Scaphoid Fracture

• Most commonly fractured carpal bone

• Usually due to fall with wrist extended and axial load (FOOSH injury)

• Snuffbox tenderness on exam

• Major blood supply is dorsal carpal branch of radial artery and 80% of scaphoid is supplied via retrograde flow

• Risk of AVN and non-union
• Initial imaging with XR

• If negative XR, but high clinical suspicion, may treat empirically with spica cast/brace and f/u for repeat XR or proceed with advance imaging

• MRI first-line advanced imaging

• CT or bone scan are other options

• Proximal and displaced fractures higher risk of non-union

• surgical referral usually if displaced >1mm

• When treated conservatively, 3-6 mo for healing
• 20 yo M soccer player presents with L ankle pain. Foot was caught up under another player during a tackle. Felt like ankle was twisted. Immediately unable to bear weight. Worst pain is anterior and lateral. Significant edema and ecchymosis of ankle.
High Ankle Sprain (syndesmosis injury)

- Syndesmosis maintains integrity between tibial and fibula
- Can be a/w fractures of distal fibula, 5th metatarsal, talus
- Important to recognize, as missed diagnosis may lead to significant, early DJD of ankle
• Presents like severe sprain - swelling, bruising
• Anterolateral pain
  • tenderness proximally, over syndesmosis
• Unable to weight bear
• Provocative tests:
  • squeeze test
  • external rotation
  • fibular drawer
• Initial XR to include AP, lateral, mortise views

• consider WB, external rotation stress, XR of proximal fibula, and contralateral views if suspicious

• XR may show

  • decreased tibiofibular overlap

  • increased medial clear space

  • increased tibiofibular clear space

• MRI, CT
• Conservative treatment, NWB in tall boot followed by progression to WB in boot and PT

• variable recovery/healing time; much longer than normal ankle sprain

• only if no diastasis or instability
• 33yo M flag football player presents with R foot pain. Injury occurred during a tackle when another player fell onto heel of his plantar flexed foot. He cannot bear weight and reports diffuse pain through fore foot. There is medial plantar ecchymosis noted.
Lis Franc Injuries

• Lis franc ligament spans articulation from the medial cuneiform to base of 2nd metatarsal

• lis franc complex consists of TMT, inter metatarsal, and inter tarsal articulations

• spectrum of injury: sprains —> fracture-dislocation of TMT joint

• Axial load through hyper plantar flexed foot

• Missed injury = chronic pain, deformity
• presentation: pain and tenderness TMT joint, NWB, swelling, medial plantar bruising

• pain with pronation and abduction*

• +instability test (if +, plantar ligaments are torn, and surgery may be indicated)

• If unstable, XR may show

  • widened interval between 1st and 2nd ray

  • medial base of 2nd MT does not line up with medial side of middle cuneiform

  • dorsal displacement of 1st or 2nd MT
• Advanced imaging: MRI or CT*

• non-op/stable - cast/boot immobilization 8+ weeks

• unstable - operative - ORIF, arthrodesis
• 17 yo F runner presents with L hip pain. Gradual worsening over last 3-4 months. No injury. Runs 20-40 miles per week. Pain begins earlier and earlier into run and now has some discomfort walking.
Femoral neck stress fracture

• Rare*, but may be catastrophic if missed
• average diagnostic delay of 14 weeks
• insidious onset of groin/hip pain
• with impact and sometimes at extremes of ROM
• Compression v tension side
  • compression more common and more stable
• XR is usually normal
  • MRI is imaging of choice
• Treatment
  • non-op: NWB, crutches
    • compression side, fatigue line <50% neck width
  • operative: ORIF w/percutaneous screw
    • tension side or compression side >50%
Types of stress fracture

- Compression
- Tension
- Displaced
• 32 yo M sprinter presents with bilateral lower leg pain. R began 2 months ago and L began over last 2 weeks. Worsening and occurring sooner into practice. No neurovascular symptoms. No pain with strength or ROM testing at knee and ankle. Pain bilaterally when tuning fork is placed to anterior tibia.
Tibial shaft stress fracture

- runners, military recruits
- insidious onset
- pain usually well localized to stress reaction/fracture site
- XR first; MRI most sensitive
- Treatment:
  - activity restriction and protected WB
  - avoid NSAIDs
  - bone stim?

- Other locations to consider stress injuries: distal fibula, metatarsals (specifically 5th MT), femoral shaft
• 15 yo M football lineman presents with low back pain, worsening over the last 6mo. No specific injury. Hurts with extension. No radicular symptoms.
Spondylolysis

• Stress injury of pars

• Due to repeated low back hyperextension

• Gymnasts, cheerleaders, dancers, swimmers/divers, weight lifting, football linemen

• On exam, pain with back extension

• Begin with XR

  • may visualize sclerosis or defect on lateral or oblique views ("scotty dog")
• If suspect spondy, move on to advanced imaging
  • MRI

• Treatment is rest, eventually followed by PT and gradual RTP
  • opinions differ on time and bracing
  • 3-6 months

• If left untreated, may cause continued pain and progress to bilateral defect and spondylololithesis
• 16 yo F soccer player collides with another player during a hard tackle. Impact isn’t seen, but she stumbles a bit getting to her feet. When she comes to sideline, she complains of mild vertigo, but says she is otherwise fine and wants to continue to play.
Concussion

- > 50% are not reported
- A prior history of concussion(s) negatively impacts an athlete's likeliness to report symptoms
- Important to do a quick assessment if any suspicion
- A concussed athlete should not return to play same game
- Many assessment tools (e.g. SCAT, Impact)…key is consistency
- Importance of physical and mental rest
Lesser trochanter avulsion

- Avulsion of distal iliopsoas tendon
- Usually feel a “pop” and cannot perform SLR
- Look for avulsed fragment off lesser trochanter on XR
- Treatment (unless significant displacement): activity restriction, protected WB, no progression until visible healing on XR
- Also consider AllS avulsion (rectus femurs)


• Pediatric Spondylolithesis and Spondylolysis. Orthobullets (online). Updated 6/26/17.


• Scaphoid Fracture. Orthobullets (online). Updated 9/18/18.
