Disclosures

- I have no disclosures.
LATERAL ANKLE SPRAINS

- 3 ligaments: ATFL, CFL, PTFL
- Grades
  - I: strain
  - II: partial tear
  - III: complete tears
- No laxity in Grade I
- Laxity in Grades II and III

X-ray?

- Ottawa Ankle Rules: pain in the malleolar zone AND one of the following:
  - TTP along distal 6cm of posterior edge of tibia or tip of medial malleolus
  - TTP along distal 6cm of posterior edge of fibula or tip of lateral malleolus
  - Inability to WB (take 4 steps) immediately after injury or at time of evaluation

Treatment

- Early rehab!!!
- Temporary immobilization if needed in walking boot
- Early focus on ROM
- Strengthening and proprioception exercises as patient progresses
Late complications

- Synovial impingement
  - Anterior vs. posterior
  - May be secondary to osteophyte formation
- Osteochondritis dissecans (OCD)
  - Injury to subchondral bone leading to bone death and overlying cartilage loosening/degradation
High Ankle Sprain

- Tibial/fibular syndesmosis injury
- Ankle is a mortise joint
- Syndesmosis injury may result in instability
Radiographs

- Need weightbearing x-rays to assess for subtle instability
- Look for widening on mortise view or widening of tibial/fibular clear space on AP view
- Refer to Orthopaedic surgeon if any instability signs seen on x-ray

PLANTAR FASCIITIS

- Overuse injury
- Heel pain
- First few steps in the morning
- Imaging studies usually not required
Treatment

- stretching, stretching, stretching!
- OTC pain meds
- Night splints
- Heel cups/orthotics or arch supports
- Gait analysis/correction
- Corticosteroid injection (beware fat pad atrophy)
- Recalcitrant cases: ESWT (extracorporeal shock wave therapy) vs. surgery
MORTON’S NEUROMA

- Forefoot pain
- Shooting pain into toes
- 3rd interdigital space most common
- Aggravated by tight fitting shoes, high heels

Treatment

- Metatarsal pad (splays out MT heads)
- Proper shoe wear
- Corticosteroid injection
- Surgical excision for failed conservative care

Metatarsal Stress Fracture

- “March fracture”
- Results from chronic overload
  - Commonly seen with sudden increase in activity/training
- Insidious onset of pain
- Early radiographs normal; findings usually seen after 4-5 weeks
- 2nd MT most common
Treatment
- Avoid aggravating activity
- May require immobilization in hard-sole shoe
- Gradual return to running/marching when pain-free

Hallux Valgus
- “Bunion”
- Valgus deviation of great toe (varus deviation of 1st metatarsal)
- Correlation with constricting footwear
- Pronation and pes planus may be predisposing factors
- Main complaint is pain over medial eminence
Treatment

- Padding or shoe modification
- Shoes with wide toe box
- Insoles/arch supports may help
- Definitive Rx is surgical correction

Gout

- Due to deposition of monosodium urate crystals
- Begins in single joint; incidence in great toe MTP is 75%
- Men:Women = 9:1
- Intense pain
- “Bed sheet” test
DDx
- Septic joint/cellulitis
- Trauma
- Osteoarthritis flare
- Neuropathic arthropathy

Diagnosis
- Joint aspiration with identification of monosodium urate crystals
- Uric acid level may be normal

Treatment
- NSAIDs
  - Indomethacin (75 – 100mg initial dose, then 50mg q 6 hours until symptoms subside)
  - Colchicine (1mg initial dose, then 0.5mg q 12 hours until symptoms resolve)
- Prophylaxis
  - Allopurinol, Probenecid
  - Avoid high purine foods (organ and red meats, fatty fish/seafood, yeast)
  - Avoid ETOH
LISFRANC INJURY

- Classic forced plantar flexion injury (trip down stairs)
- Midfoot injury
- Easily missed
- Beware of the “burrito foot”

- WB films required
- Radiographic findings can be very subtle
- Low threshold for MRI if exam suspicious
- Refer to Ortho foot/ankle specialist
ACHILLES TENDON RUPTURE

- Classic patient: 30-40 y/o male playing basketball (or tennis)
- Classic history: “pushing off, felt like I was shot in the back of my lower leg”; loud snap often heard across the court
- Rupture occurs in “watershed” area 2-6 cm above insertion

Diagnosis

- Palpable defect
- Swelling/ecchymosis possible
- Positive Thompson’s test
- Imaging studies obtained to r/o avulsion fracture

Thompson Test
### Treatment

- Casting vs surgery
- Can treat non-operatively with serial casting starting in equinus; long-leg cast required for first month
- Surgical repair allows for quicker weightbearing
- 6 months recovery time

### Turf Toe

- Sprain of the capsuloligamentous complex of the great toe MTP joint
- MOI: forced hyperextension (dorsiflexion)
- Continuum from simple capsular sprain to significant tears
- Risk factors: flexible shoes and harder playing surfaces

### PE

- MTP tenderness (plantar)
- Swelling
- Ecchymosis
- Limp with no pressure on MTP
X-rays may be normal but may show avulsion
MRI better defines extent of injury
DDx includes sesamoid injury
Treatment depends on severity
- RICE, NSAIDs
- Taping/plantar plate may allow continued play
- May require prolonged immobilization
- Surgery for recalcitrant cases

POSTERIOR TIBIALIS INJURIES
- Tenosynovitis/tendonitis vs rupture
- Primary heel invertor and forefoot adductor; important in maintaining arch
- Missed diagnosis/prolonged symptoms can lead to rigid flatfoot deformity

Diagnosis
- More common in middle-age
- Little or no heel inversion when standing on toes
- “Too many toes sign”
- Weak inversion
Treatment
- Urgent referral if rupture present or highly suspicious
- NSAIDs, consider immobilization in walking boot
- Rehab/modalities

PERONEAL TENDON SUBLUXATION
- MOI: forced dorsiflexion (downhill skiing)
- Acute injury looks like lateral ankle sprain
- Chronic symptoms include pain, lateral ankle snapping
- If chronically symptomatic, generally require surgical correction
**CALCANEUS FRACTURE**

- Acute vs stress fracture
- MOI for acute fracture = fall from height
  - 75% intraarticular
  - 70% have associated LE or spinal fracture
- Radiographs to include axial view
  - May require MRI or bone scan for stress fractures

**Imaging**

- Bohler’s angle on lateral view (25-40 degrees)
- CT scan generally required to assess joint congruity (cannot accept any intra-articular displacement)

**Treatment**

- Stress fractures
  - Avoid aggravating activity
  - May need immobilization in walking boot
  - Weight bearing as tolerated
  - 2-3 months recovery time
- Intraarticular fractures
  - Refer
JONES FRACTURE

- Proximal 5th MT diaphyseal fracture
- 0.5cm – 1.5cm from the proximal tip of the 5th MT
- Distinguish between tuberosity fractures and Jones fracture
- "Jonesland" is area of very poor vascular supply; high rate of non-union
Treatment

- Tuberosity avulsion fractures/stress fractures treated in walking boot or hard-sole shoe
- True Jones fracture requires either prolonged NWB cast immobilization (8-12 weeks) or surgical ORIF

FRACTURE OF THE LATERAL PROCESS OF THE TALUS

- AKA “snowboarder’s ankle”
- 15 times more likely in snowboarder
- Best seen on mortise view, but can be “invisible” on x-rays
- CT scan if suspicious for injury
**Treatment**
- Small ND fractures treated in NWB SLC for 4 weeks, followed by walking cast for 4 weeks.
- All others usually require ORIF

**Tarsal Coalition**
- Bony or fibrous connection between two tarsal bones
- Most common are calcaneonavicular and talocalcaneal
- Unknown etiology
- Commonly presents in adolescence
- Insidious onset of pain which is vague
Management

- Generally conservative
- Activity modification
- May benefit from inserts/orthotics
- Complete temporary immobilization may be required
- Surgical resection reserved for recalcitrant cases

THANK YOU

QUESTIONS?