Ankle Basics
Outpatient Orthopaedics for the Primary Care Physician

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History

- Chief complaint
  » Have patient point to the area with one finger
- Onset
  » Acute, chronic, overuse, single event
- Characteristics
- Past Medical History
- Activity History
Physical Exam

- Most diagnoses can be made on the P.E.
  - Systematic exam
  - Know the basic anatomy
  - Don’t immediately focus on the injury
  - Many patients complain of an “ankle sprain” while pointing elsewhere e.g. 5th metatarsal fracture
Imaging Studies

- Examine patient first
- Form a diagnosis
- Know what you want to evaluate
- Don’t be skimpy with partial or single views
Imaging Studies

- **Foot**
  - AP weight-bearing
  - Lateral weight-bearing
  - Oblique

- **Ankle**
  - AP
  - Lateral
  - Mortise

- **Full Tibia-Fibula**
  - Must evaluate joints above and below a fracture
Imaging Studies

- **Bone Scan**
  - Suspected stress fractures
  - Diagnosis of unknown pain
  - Complex regional pain syndrome
Imaging Studies

- **Computed Axial Tomography**
  - Best used for bony anatomy
  - Fractures, arthritic changes in joints, tarsal coalition
Imaging Studies

- Magnetic Resonance Imaging
  - Osteochondral defects or injury
  - Tendon ruptures
  - Infection
  - Avascular necrosis
Ankle Sprains

- Lateral ankle sprains
  - 95% of ankle sprains
  - Mechanism is forced inversion
  - Significant risk of re-injury
Ankle Sprain
Ankle Sprain

- Inversion most common type of sprain
- Lateral ligaments may be torn
ATFL Tear
Ankle Sprain

- Treatment: think **RICE**
  - Rest
  - Ice
  - Compression
  - Elevation
Lateral Ankle Sprains

- Involvement in lateral ankle sprains:
  » ATFL 65-75%
  » ATFL + CF 25%
  » ATFL + CF + PTFL occasional
Ankle Sprain Treatment

- Grade I
  » Brace for 10-14 days (stirrup brace or similar)
  » RICE
  » Rehab: peroneal strengthening and proprioceptive training

- Grade II, III
  » SLWC (cast boot) 3 weeks
  » RICE, rehab as above
  » May require brace or taping for sports for 6 months
Chronic Ankle Instability

- **Functional**
  - Repeated episodes of giving way or unreliable ankle, may or may not have ligamentous instability

- **Mechanical**
  - Ligamentous instability, but may not be functionally unstable
Beware of What is Not an Ankle Sprain

- Anterior process fracture calcaneus
- Lateral process talus fracture
- Posterior process talus fracture
- Osteochondral fracture talar dome
- Fracture of 5th metatarsal
- Syndesmosis injury with proximal fibula fracture
Beware of What is Not an Ankle Sprain

- Achilles tendon rupture
- Posterior tibial tendon rupture or dysfunction
- Peroneal tendon injury
- Subtalar joint instability or fracture
- Sensory nerve injury
- Systemic inflammatory disease
Ankle Fracture

- Tender over the fibula
- Often unable to bear weight
- Medial tenderness, widened mortise = unstable fracture
Ankle Fracture
Anterior Process Calcaneus Fracture
Anterior Process Calcaneus Fracture

- Avulsion fracture (bifurcate ligament)
- 4 weeks NWB in cam walker then WBAT in cam walker until healed
- Excision if nonunion
- Prolonged recovery
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Peroneal Tendon Problems

- Tendon tears
- Low lying muscle belly p. brevis
- Subluxing peroneal tendons
Peroneus Brevis Pathology
Lateral Process Talus Fracture

- Snowboarders, wakeboarders
- Usually the forward foot
- Often delay in diagnosis
- Early Tx ORIF-- late Tx Excise non-union fragment
- Poor outcome with stiffness, pain and subtalar arthrosis
Lateral Process Talus Fracture
Lateral Process Talus Fracture

- Cast / NWB 6 wks
- If fragment large may need ORIF
- Subtalar arthrodesis often needed
Lateral Process Talus Fracture
Posterior Process Talus Fracture

- Inversion/plantarflex.
- Non-op if minimally displaced
- Excise if large, displaced or symptomatic
Posterior Process Talus Fracture

- Tender more posterolateral
- Inversion + plantar-flexion
- Camwalker 6wks, crutches 3-6 wks
Posterior Process Talus Fracture
Osteochondral Lesions of the Talus

- Determine if lesion is source of symptoms before surgical treatment
- Acute- reduce displaced fragment and pin if enough bone left to heal
- Chronic- drilling, microfracture, mosaicplasty, chondrocyte transplantation, osteochondral allografts

» Hangody et al, *Foot Ankle Int* 1997;18:628-634
Osteochondral Fracture
Osteochondral Fracture
Achilles Tendon

- Don’t miss an acute rupture
- Can still have active plantar flexion
- Do a Thompson’s Test
  - With patient prone, squeeze calf - foot should plantar flex
- Palpate for defect in tendon
Achilles Tendon Rupture
Achilles Tendon

● Chronic Tendinitis
  » Rest, immobilization in cast boot
  » Heel lift, night splint
  » Physical therapy
  » Avoid corticosteroid injections around tendon- risk of rupture
  » Surgery only if failure prolonged conservative treatment
Posterior Tibial Tendon Insufficiency

- Unilateral flat foot
- Usually a degenerative condition of the tendon
- Medial pain and swelling
- Camwalker/SLC 6 weeks
- UCBL
- May require reconstructive surgery
Anterior Impingement