

Common Work Related Foot and Ankle Problems

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Anatomy



- Bones
 - Ankle
 - Tibia
 - Fibula
 - 1/6 total body weight
 - Talus
 - 3/5 cartilage
 - No muscle insertion
 - Foot
 - 26 bones
 - Calcaneus is largest
 - 7 tarsal
 - 5 Metatarsals
 - 14 phalanges

Anatomy



Anatomy

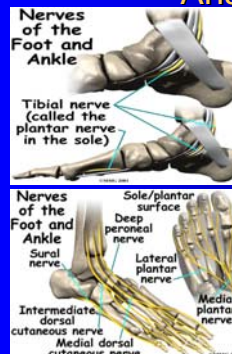


Anatomy



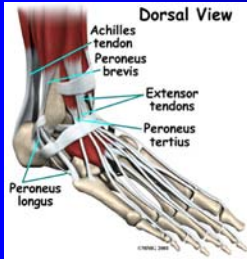
- Ligaments
 - Lateral
 - Anterior talofibular (ATFL)
 - Posterior talofibular (PTFL)
 - Calcaneofibular (CFL)
 - Medial
 - Deltoid
 - Syndesmosis
 - Anterior inferior tibiofibular (AITFL)
 - Posterior inferior tibiofibular (PITFL)
 - Foot
 - tarsometatarsal

Anatomy



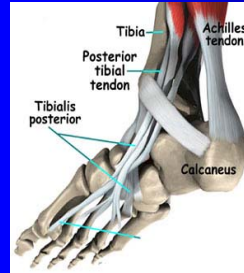
- Nerves
 - Medial
 - Tibial
 - Medial and lateral plantar nerves
 - Tarsal tunnel is created by medial malleolus, flexor retinaculum, and posterior talus-calcaneus
 - Anterior
 - Deep peroneal
 - Superficial peroneal
 - Lateral
 - sural

Anatomy



- Tendons
 - Lateral
 - Peroneal
 - Plantar flexes-everts the foot
 - Anterior
 - Tibialis anterior
 - Dorsiflexes the foot
 - Extensor tendons
 - Extends the toes

Anatomy



- Tendons
 - Medial
 - Posterior tibial
 - Supports the arch
 - Inverts the foot
 - Posterior
 - Achilles
 - Plantar flexes-inverts the foot

Anatomy



- Plantar aspect of the foot
 - Plantar fascia
 - Interdigital nerve

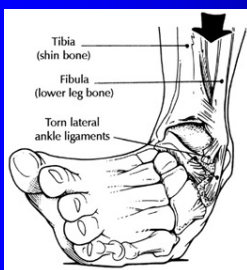


Ankle Sprains



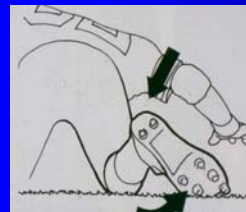
- Ankle sprains
 - Most common musculoskeletal injury seen in practice
 - 25,000 per day
 - 90% are inversion injury
 - 80% lateral ankle ligaments
 - Most heal uneventfully

Ankle Sprains



- Inversion injury
 - 90% sprains
 - lateral “low” ankle sprain
 - Injures ATFL, sometimes CFL

Ankle Sprains



- Eversion injuries
 - 10% sprains
 - Produces “high” ankle sprain
 - Injures syndesmotic ligament complex



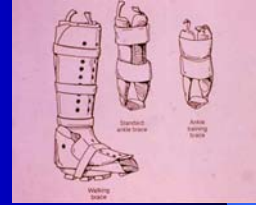
Ankle Sprains

- Physical examination
 - Tenderness
 - Deformity
 - Difficulty bearing weight
- Radiographs
 - Do not miss fracture



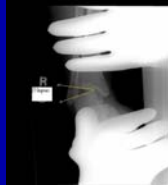
Ankle Sprains

- Nonop treatment
 - Individualize treatment
 - RICE
 - Immobilization
 - Mild: ace wrap
 - Moderate: stirrup
 - Severe: walking boot
 - Physical therapy
 - Bracing
 - Chronic instability



Ankle Sprains

- Operative treatment
 - Persistent ankle instability
 - Repair of ankle ligaments
 - Anatomic
 - Brostrom type repair
 - Nonanatomic
 - Usually peroneal tendon augmentation



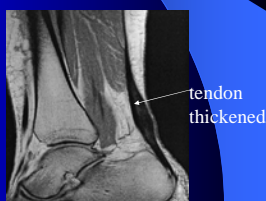
Achilles Tendon Dysfunction



- tear
- tendonitis
- tendinosis
- Retrocalcaneal bursitis

Achilles Tendon Dysfunction

- Tendonitis
 - Inflammation of tendon sheath
 - Overuse injury
- Tendinosis
 - Intrinsic degeneration
 - Older patients with comorbidities

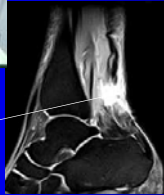


Achilles Tendon Dysfunction

- Treatment
 - Heel lift
 - Modification of activities
 - Identify workplace stressors
 - NSAID
 - Bracing
 - AFO
 - Surgery
 - Tendon sheath release
 - FHL transfer



Achilles Tendon Dysfunction



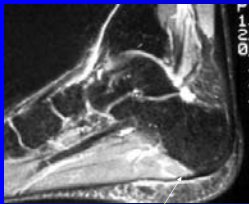
- Acute rupture
 - Middle aged males
 - Pain in the back of calf
 - Palpable defect
 - Positive Thompson's test
 - Surgery vs. cast

Plantar Fasciitis



- Most common cause of heel pain
- Affects 2 million Americans per year
- Females more than males
- No correlation with a heel spur
- Usually self-limited condition

Plantar Fasciitis



Thickened fascia

- Etiology
 - Microtear in fascia
- Presentation
 - Pain with first steps in the morning and after rising from the seated position
- Evaluation
 - Foot pronation
 - Tight achilles
 - Exclude rheumatologic and neuropathic conditions

Plantar Fasciitis

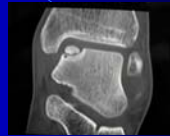


- Treatment
 - Nonoperative
 - Heel lifts
 - Physical therapy
 - Cortisone
 - Cast/splint
 - Operative
 - fasciotomy
 - ESWT
 - 70% success

Osteochondral Lesions

Presentation

- 10% of all OCD
- Males>females
- Location
 - Posteromedial 60%
 - Inversion injury to plantarflexed ankle
 - Anterolateral 40%
 - Eversion injury to the dorsiflexed ankle
- Symptoms
 - Pain
 - Swelling
 - locking



Osteochondral Lesions

Treatment

- Nonoperative
 - Asymptomatic: no treatment.
 - No evidence of increased arthritis
 - Symptomatic: small stable lesions
 - Grades I and II
 - Cast 3-6 weeks
 - Physical therapy
 - Orthotics
 - No good studies



Osteochondral Lesions

- Treatment
 - Operative
 - Open repair
 - Young patients
 - Acute displaced large lesions > 2 cm
 - Headless screw fixation
 - Arthroscopy
 - Removal loose body
 - Excision osteochondral fragment
 - synovectomy
 - Chondroplasty-microfracture
 - Retrograde drilling



Osteochondral Lesions




Peroneal Tendon Problems

- Tears
 - Acute rupture
 - rare
 - Longitudinal attritional
 - 15% incidence in cadavers
 - Symptoms of retrofibular pain, swelling, and eversion weakness
 - Treatment
 - Acute rupture
 - acute repair
 - Longitudinal
 - <50% diameter: debride and repair
 - >50% diameter: tenodesis




Peroneal Tendon Problems

- Instability
 - Causes
 - May result from non-concave shape of the peroneal sulcus
 - Disruption of superior peroneal retinaculum
 - Examination:
 - Resisted eversion of the foot with the ankle dorsiflexed
 - Treatment:
 - Repair of superior peroneal retinaculum
 - Groove deepening
 - Bone block procedures



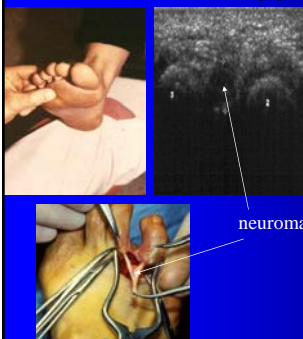
Metatarsalgia

- Discomfort in the region of the metatarsal heads and metatarsophalangeal joints
 - Hallux rigidus
 - Stress fracture
 - Joint synovitis
 - neuroma



Neuroma

- Most common nerve entrapment syndrome
 - Perineural fibrosis
 - 2nd-3rd or 3rd-4th space
- Presentation
 - Burning plantar pain
 - improved by shoe removal
 - Positive Mulder's click
 - Positive ultrasound
- Treatment
 - Metatarsal pad
 - Cortisone injection
 - Shoe with wide toe box
 - surgery



Fractures



- Ankle
 - Most need referral
 - Surgical fixation
 - Unstable injuries
 - Loss of reduction of ankle joint mortise



- Foot
 - Phalanges-buddy tape
 - Refer for intra-articular
 - Metatarsal
 - Refer for Jones fracture
 - Treatment
 - Rigid soled shoe
 - Cast walker

Thank you

