Common Work Related Foot and Ankle Problems

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Ankle Sprains

- Ankle sprains
  - Most common injury seen in practice
  - 25,000 per day
  - 5% work injuries
  - 90% inversion injury
  - 80% lateral ligaments
  - Most heal uneventfully
Ankle Sprains

- Inversion injury
  - 90% sprains
  - lateral “low” ankle sprain
  - Injures ATFL, sometimes CFL
  - Grades
    - 1 (mild): sprain
    - 2 (moderate): stretch
    - 3 (severe): tear
Ankle Sprains

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

0 to 6 weeks

- Accurate physical examination
- Xrays to exclude a fracture
- RICE
- Rehabilitation program
  - Physical therapy
  - Bracing
  - Cortisone injection
Ankle Sprains

- Up to 12 weeks
  - Persistent symptoms
    - Pain
    - Instability
  - Advanced studies
    - MRI scan, stress test
  - Surgery
    - Ankle arthroscopy
    - Repair of ligaments
    - Repair any associated injuries (cartilage)
Ankle Sprains

- Return to work
  - Light work duty
    - 4 weeks (grade 1-2)
  - Full work duty
    - 8 weeks (grade 2-3)
  - Surgical repairs (grade 3)
    - 3-6 months
  - Factors influencing return to work
    - Degree of injury
    - Nerve damage
    - Cartilage or tendon damage
Achilles Tendon Dysfunction

tear

tendonitis

tendinosis

Retrocalcaneal bursitis
Achilles Tendon Dysfunction

- **Tendonitis**
  - Inflammation of tendon sheath
  - Overuse injury

- **Tendinosis**
  - Intrinsic degeneration
  - Older patients with co-morbidities

Sheath swelling

tendon thickened
Achilles Tendon Dysfunction

Treatment

- 0-4 weeks
  - heel lift
  - casting
  - Modification of activities
    - Inclines, stairs, repetitive movements
  - NSAID

- 4-8 weeks
  - Bracing
  - Physical therapy
  - PRP

- After 3 months
  - Tendonitis: sheath release
  - Tendinosis: 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
Achilles Tendon Dysfunction

Return to work (tears)
- Light
  - 3 months
- Moderate
  - 6 months
- Heavy
  - 9 months
- Factors affecting return
  - Ability to single heel rise
  - Occupational demands
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

- **Etiology**
  - Microtear in fascia
  - May be work related

- **Presentation**
  - Pain with first steps in the morning and after rising from the seated position

- **Evaluation**
  - Foot pronation
  - Usually involves one foot
  - Exclude other causes

Thickened fascia
Plantar Fasciitis

Treatment
- Level one – up to 2 months
  - NSAID’s
    - 30% to 70% success
    - No study has proven its effectiveness alone
  - OTC orthosis or cushioned heel insert
    - Used to correct pronation, off-load fascia
    - No difference between custom and OTC
  - Stretching program
    - 25% to 50% effective
    - Plantar stretch preferred
Plantar Fasciitis

**Treatment**
- Level two - up to 4 months
  - Cortisone injection
    - Limited evidence of effectiveness
    - Complications: rupture and pad atrophy
  - Night splint/walking cast
    - No convincing evidence in literature
  - Physical therapy
    - Formal therapy with ultrasound, estim, and laser not supported for long term benefit
Plantar Fasciitis

- Treatment
  - Level three
  - Surgery
    - fasciotomy
  - Extracorporeal shockwave treatment (ESWT)
    - 6 months of symptoms
    - Use of sound waves to treat fasciitis by microinjury to tissue
    - Revascularization and growth factor release
    - Low energy vs. high
    - 70% success
    - No consensus on effectiveness
Crush Injuries

- 2% industrial injuries
- Mechanism
  - Direct blow
  - Run over by a vehicle
  - Trapped in machinery
- Injury
  - Fractures
  - Ligament or tendon tears
  - Nerve damage
  - Open wounds
- Outcome
  - Significant morbidity
  - Guarded prognosis
Crush Injuries

- **Diagnosis**
  - Xrays
  - MRI or CT scan
    - Ligament tears
    - Occult injuries
    - Marrow edema
  - EMG-NCS
    - Nerve damage
  - Bone scan
    - CRPS
Crush Injuries

- Treatment
  - Repair fractures
  - Treat open wounds
  - Treat nerve damage
    - Direct nerve injury
    - Micro-ischemia
  - Rehabilitation
    - Regain motion
    - Desensitization
    - Work hardening
    - Prevention
Osteochondral Lesions

Presentation

- Cartilage damage to talus or tibia
- Usually follows twisting injury of ankle
- Symptoms of pain and locking or clicking
- Xrays be negative
- MRI or CT scan is helpful early
Osteochondral Lesions

Treatment

- Nonoperative
    - No evidence of increased arthritis
  - Symptomatic: small stable lesions
    - Cast 3-6 weeks
    - Physical therapy
    - Orthotics
    - Viscosupplementation
    - No good studies
Osteochondral Lesions

Treatment

- Operative
  - Open repair
    - Young patients
    - Acute displaced large lesions > 2 cm
    - Headless screw fixation
  - Arthroscopy
    - Remove cartilage fragment
    - Chondroplasty-microfracture
  - Cartilage transplant
    - Autograft (knee)
    - Allograft
Osteochondral Lesions

- Return to work
  - Light work duty
    - 3 months
  - Medium work duty
    - 6 months
  - Heavy work duty
    - 9-12 months

- Factors affecting success
  - Age > 50 years old
  - Lesion greater than 2 cm
  - Associated arthritis
Chronic Pain

- **Types**
  - CRPS 1: not specific nerve injury
  - CRPS 2: specific nerve injury

- **Diagnosis**
  - Physical exam
  - Bone scan
  - EMG-NCS
  - LSB

- **Treatment**
  - Surgery
  - Physical therapy
    - Maintain motion and function
  - Neurological
    - Neuropathic meds
    - NSAIDs
    - LSB
    - psychiatric
Thank You