Common Foot and Ankle Conditions

Said Atway, DPM
Assistant Professor – Clinical
Department of Orthopaedics
The Ohio State University Wexner Medical Center

Objectives

- Common Podiatric Pathology
  - Heel pain
  - Neuroma
  - Digit deformities
  - Verruca
- Basic evaluation and overview
- Basic treatment

Heel Pain

- Plantar fasciitis
- Heel spur syndrome
  - Misnomer
- Post static dyskinesia
- Plantar heel pain
  - Medial calcaneal tubercle

Etiology

- Flat foot
- Hyperpronation
- Weight gain
- Exercise regimen
- Poor shoe gear
- Barefoot walking

Author: Kosi Gramatikoff
Spur Comparison

Physical Exam

- Pronated foot
- Obese
- Edema to plantar/medial heel
- Pain with palpation
  - Lateral compression

Treatment

- Stretching
- Home cryotherapy
- Avoid barefoot walking
  - In home
- NSAIDs
- Activity modifications
- Support
  - Orthotics

Secondary Treatment

- Injections
  - Steroid
- Night splint
  - Windlass
- Immobilization
- Custom orthotics
- Formal physical therapy

Author: Kosi Gramatikoff
## Surgical Treatment

- Surgery
  - Failed conservative treatment >6 mos
    - Plantar fasciotomy
    - ESWT (extracorporeal shockwave therapy)
    - Coblation

## Not Plantar Fasciitis
### Posterior heel

- Retrocalcaneal exostosis
- Similar cause
- Posterior heel pain
- Pain with activity

### Neuroma/Morton’s Neuroma

- Burning pain
- Numbness/Tingling
- Sharp radiating pain
- “Wrinkled-sock sensation”

### Treatment

- Shoe modifications
- Orthotics
- Padding
- Injections
  - Steroid
  - EtOH
- Surgery
  - Excision
  - Decompression

### Exam

- Pain with palpation
- Mulder’s click
- Radiating sensation
- Radiographs
  - R/O differentials
- Ultrasound
- MRI
Neuroma Excision

Digital Deformities
- Hammertoe
- Claw toe
- Mallet toe
- Crossover toe
- Adductovarus
- Contracture

Exam
- Radiographs
- Pain with palpation
- Callus
- ROM
- Stability/push up/WB

Plane of Deformity
Polydactyly

Conservative Treatment
- Shoe modifications
- Padding
- Debridement
- Taping
- Injections

Surgery
- Arthroplasty
- Arthrodesis
  - Fixation
- Osteotomy
- Tendon transfer
  - Soft tissue balance
**Verruca**

- Human papilloma virus
  - 1,2,4,63
- Verruca plantaris
- Benign epithelial tumor
- 7-10% of population
- Moist surfaces
- Difficult to treat

**Physical Exam**

- Hyperkeratotic tissue
- Pinpoint bleeding
- Divergent skin lines
- Pain with lateral compression
  - Differentiates

**Not a Wart**

**Treatment**

- Keratolytics
  - Salicylic Acid (60%)
  - Canthiridin
- Cryotherapy
- Laser treatment
  - Leaves a wound
- Excision
Conclusion

• Exhaust conservative treatment
  – Shoe modifications
• Realistic goals
  – Patient expectations
• Surgical treatment options

Objectives

• Eval some common pedal problems
  – Bunion (HAV)
  – Hallux Limitus/Rigidus
  – Paronychia
  – Tinea Pedis
  – Puncture Wounds

Podiatry for the Primary Care Physician

Erik Monson, DPM
Chief, Division of Podiatry
Director, Podiatric Medicine and Surgery Residency Program
The Ohio State University Wexner Medical Center

Bunion

• Hallux AbuctoValgus
• Etiology
  – Multiple factors, heredity primary influence
• Pain over the medial eminence of the 1st metatarsal head
• May also get pain from great toe impeding on 2nd digit
### Bunion - Treatment Options

- "Corrective" splints will not fix deformity
- If asymptomatic would not recommend any treatment
- Conservative options
  - Shoes with a wide toe box (accommodate the deformity)
  - Padding
  - Ice, NSAIDs
  - Orthotics - control mechanics (pronation)

### Bunion

- Radiology Evaluation
  - IM 1-2 Angle
    - Normal 8 degrees
  - Tibial Sesamoid Position
  - Hallux Valgus Angle
    - Normal 15 degrees
  - Eval 1st MTP for osteoarthritis
  - Helps with operative decision making

### Bunion Surgery

- Indicated if patient fails conservative therapy and pain limits ability to perform activities
- Multitude of surgical procedures based on degree of deformity and other factors

### Surgical Options

- Osteotomy
- Fusion
### Bunion Surgery

- Remove prominent 1st metatarsal head, realign 1st MTP and sesamoid position, improve 1st MTP function
- Decrease patient pain and improve function

---

### Hallux Limitus/Rigidus

- Limitation of Motion of the 1st MTP
- Normal dorsiflexion of this joint is 60 degrees with the foot loaded
- Sometimes called a dorsal bunion

---

### Hallux Limitus

- Etiology
  - Previous trauma, long or elevated 1st ray, forefoot supinatus, osteoarthritis, longstanding HAV, inflammatory arthritis
- Symptoms
  - Pain, stiffness, crepitus, painful dorsal bony prominence
- Clinical Presentation
  - More pain noted over dorsal joint and with ROM of the joint, as opposed to medial pain seen with HAV

---

### Hallux Limitus

- Conservative Treatment
  - Decrease ROM of 1st MTP
    - Rigid shoe, carbon fiber foot plate, mortons extension on orthotic
- NSAIDs, ICE
- Injection
- Physical Therapy
- Activity Modifications
**Hallux Limitus**

- Surgical Options
  - Chielectomy
  - 1st MTP Implant
    - Controversial, difficult to manage complications
  - 1st MTP Arthrodesis

**Paronychia**

- Inflammation/Infection of nail fold
- Onychocryptosis typically involved
  - Incursion of nail plate punctures nail fold and creates opportunity for infection

**Paronychia**

- Mild Case
  - May respond to antibiotic, Epson salt soaks
- Moderate/Severe
  - Require more aggressive treatment
    - Toe block and nail avulsion
- Extreme/Neglected
  - Could potentially result in osteomyelitis

- Nail avulsion
  - Typically simple drainage is not sufficient
  - Remove portion of nail impeding on the skin and drainage of any purulent material
  - Toe blocked with local, nail freed from nail bed, English anvil to resect the affected portion of nail
### Paronychia

- **Antibiotics** - Cover gram positive
  - Cephalexin, clindamycin
- In diabetic may want to broaden antibiotic coverage
- May augment with topical antibiotic

### Paronychia

- Recurrent Cases would consider a matrixectomy procedure
  - Chemical versus surgical procedures

### Tinea Pedis

- **Acute form**
  - Trichophyton Mentagrophytes
  - Intensely pruritic, sometimes painful, erythematous vesicles or bullae between the toes or on the soles, frequently extending up the instep
  - Self-limited, intermittent, and recurrent

### Tinea Pedis

- **Chronic form**
  - Most common
  - Trichophyton Rubrum
  - Slowly progressive, pruritic, erythematous erosions and/or scales between the toes
  - Erythema and white, macerated skin are present between the toes
### Tinea Pedis

- **Extension onto the sole, sides of the foot, and in some cases the top of the foot follows,** presenting as moccasin distribution with variable degrees of underlying erythema.
- **The border between involved and uninvolved skin is usually quite sharp.**

### Tinea Pedis

- **Clinical picture and history are typically diagnostic,** and **KOH is to confirm**
  - Septate hyphae are visible on a background of squamous cells on KOH prep.

### Tinea Pedis

**Treatment**
- **Topical antifungal cream for four weeks; interdigital tinea pedis may only require one week of therapy**
  - Butenafine–Mentax or Lotramin ultra 1% cream QD to BID
  - Naftine–Naftin 1% cream QD
  - Terbinafine–Lamisil 1% cream Qday to BID
  - Ketoconazole–Nizoral 2% cream Qday
  - Miconazole–Monistat-derm 2% cream BID
  - Clotrimazole–Lotrimin 1% cream BID
  - Oxiconazole–oxistat 1% cream Qday or BID
- **Oral antifungal**
  - Terbinafine 250 mg daily for 2 weeks
  - Intraconazole

### Puncture Wound/Foreign Body

- **Typically caused from walking barefoot**
  - Though may occur with shoegear
  - **Greatest occurrence between May-October**
    - July most common
**Puncture Wound**

- Most common object is a nail
- Treatment
  - Superficial cleansing
  - Tetanus prophylaxis
  - Oral antibiotic
  - Remove FB if possible/superficial
  - Close follow up

**Puncture Wound/Foreign Body**

- Deep foreign body may require removal in operating room
  - Need for fluoroscopy

**Puncture Wound/Foreign Body**

- Complications
  - Cellulitis
  - Septic Arthritis
  - Retained foreign body
  - Osteomyelitis
    - *Pseudomonas Aeruginosa*

**Puncture Wound/Foreign Body**

- Goals
  - Conversion of contaminated wound to a clean wound
  - Prevent infection
  - Remove foreign body
  - Prevent residual pain or deformity