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
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

- Heel lift
  - Alleviate achilles tension
- NSAIDs
- Physical therapy
  - Home therapy

Neuroma/Morton’s Neuroma

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

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

Treatment

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

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
Objectives

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

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

Author: Original uploader was Cyberprout at fr.wikipedia
CC-BY-SA; CC-BY-SA-1.0.
### 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
Distal Osteotomy

Proximal Procedure
Lapidus Fusion

Phalangeal Osteotomy
**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

Author: U.S. Air Force photo by Staff Sgt. Jonathan Steffen
**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
  - Incurvation of nail plate punctures nail fold and creates opportunity for infection

Author: ILAMETH at the wikipedia project
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

Paronychia

- 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

Author: James Heilman, MD
(CC BY-SA 3.0)

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

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