When to Refer to a Podiatrist?

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What is a Podiatrist?

- Doctor of Podiatric Medicine

- Training
  - Four years undergraduate study
  - Four years podiatric medicine

- Residency
  - 3 years surgical residency
Overview:

- Common Pathology
  - Presentation
  - Initial Treatment
- Referral
- Conclusion
Podiatric Pathology:

- Ingrown Toenails
- Melanoma/Hematoma
- Neuroma
- Heel Pain/Orthotics
- Structural Forefoot Abnormalities
- Professional Foot Care
- Ulcer Care
- Pediatrics
- Sports Injuries
What do you do for painful nails?

Case History:
- 16 year old teenager presents with chronic pain in the right great toe that is not resolving. Patient complains of pain, swelling, and difficulty wearing shoes.

OR

- 76 year old elderly female presents with chronic irritation on both sides of left great toe. Patient relates her nails appear curved and has difficulty getting into shoes.
**Ingrown Toenails:**

- **Presentation:**
  - Symptoms: painful toenail, erythema, edema, purulent drainage
  - Pathogenesis: nails cut too short and continue to grow into skin, trauma
  - Acts as foreign body
Ingrown Toenails:

- Initial Treatment
  - Antibiotics: Topical, Oral
  - Dressing
  - Analgesics
  - Soaks
**Ingrown Toenails:**

- Referral:
  - If it doesn’t respond:
    - Digital anesthetic block
    - Nail border removal
    - Chemical matrixectomy
Local Anesthetic Block

- Types of Blocks:
  - Hallux
  - Digital
  - Posterior Tibial
  - Ankle
  - Local V block
Ingrown Toenails:

- Referral:
  - Nail border removal - utilizing sterile nail nippers, hemostats
**Ingrown Toenails:**

- Chemical matrixectomy-
  - Nail borders permanently removed with chemical
  - Ex: phenol and alcohol
What do you do for skin lesions?

Case History:

- 46 year old male presents to your office complaining of painful bunion deformity and “bent” toes that occasionally hurt. On examination, you notice some discolored, suspicious lesions.

Rarely do they present for the skin problem!
Melanoma vs. Hematoma:

- Presentation:
  - Color
  - Size
  - Location
  - Mechanism of Injury
Melanoma vs. Hematoma:

- **Initial Treatment**
  - Establish a suspicious diagnosis
  - Pain management

- Rapid referral: dermatologist vs. podiatrist
Melanoma vs. Hematoma:

- Referral:

To drain or to biopsy?
Hematoma:

- Painful
- Collection of blood underneath nail plate
- Usually result of trauma to nail
- Drain
  - Window nail with specialized instrument
  - Removal of complete nail to assess for nail bed laceration requiring surgical repair
Hematoma:
Which is malignant melanoma?
1. Intradermal melanocytic nevus
2. Intradermal melanocytic nevus - congenital pattern
3. Squamous cell carcinoma
4. In situ melanoma in assoc with compound melanocytic nevus
Melanoma:

- Biopsy of lesion under nail
  - Biopsy through nail
  - If linear stripe from base, biopsy nail matrix
    - Permanent Nail damage will result
  - Removal of portion of nail to biopsy nail bed
Melanoma:

- Shave
- Punch
- Excision
Melanoma:

Pre and Post Biopsy Photos:
Melanoma:

- Diagnosis?
- Melanoma in situ
Case History:

- 42 year old female presents to your office in the fall after beginning a running program. Patient wants to run the Manchester Road Race, however, she is experiencing throbbing heel pain. Pain is worse in mornings and radiates along the bottom of the foot.
Heel Pain:

- Presentation:
  - Symptoms: first step pain, throbbing pain, worse in morning, difficulty ambulating
  - Pathogenesis: increased strain on plantar fascia, equinus
  - Rule out: fracture, bone tumor, underlying etiology
What do radiographs show?

- Many times heel pain presents with a heel spur
- Heel spurs are NOT the cause of heel pain
- Podiatrist can perform digital radiographs in office at visit
- Radiographs can demonstrate presence of fractures, tumors, and other osseous pathology
Pediatric Heel Pain

Different from heel pain in the adult

- **Symptoms:**
  - Pain in back, and bottom of heel, also **medial and lateral** on the calcaneus
  - Limping
  - Walking on toes
  - Difficulty participating in usual activities and sports

- **Causes:**
  - Sever’s disease
  - Tendo-achilles bursitis
  - Overuse syndromes
  - Fractures
Primary cause of heel pain = **EQUINUS**

- **How does equinus cause heel pain?**
  - If insufficient amount of dorsiflexion at ankle, foot must compensate.
  - The axis of the subtalar joint allows dorsiflexion to occur (one of the three motions possible).
    - Dorsiflexion occurs as a result of pronation of the subtalar joint
Osseous Equinus

Bone block

Contact prevents motion
Equinus:

Types:
- Osseous
- Gastrocnemius
- Soleus

Treatment:
- Stretching
- Night Splint
- Surgery
  - Removal of osseous block
  - Lengthen tendon (EGR)
Heel Pain:

- Initial Treatment:
  - Pain management
  - Stretching exercises
  - Icing
  - Immobilization
Heel Pain:

- Referral:
  - Biomechanical Evaluation for prescription orthotic
  - Injections
  - NSAIDS
  - Night Splint
  - Stretching/Icing
  - Invasive procedures
    - Shock-wave, Topaz
  - Plantar fascial release: Open vs. EPF
Plantar Fascia:
Windlass Effect:

- Two rigid segments with a tension band attached to one of the segments
- The distance of the tension band can be shortened by winding the band around a drum
- For the medial band of the plantar fascia, the first metatarsal phalangeal joint is the “drum”

Treatment Options for Plantar Fasciitis

- Surgical
  > Shock-wave, Topaz
  > Open vs. Endoscopic Plantar Fasciotomy

- Orthotic Control – Forefoot Posting
    - Lateral posting loads the calcaneal-cuboid joint DECREASES the pull on the plantar fascia

- Think before posting forefoot in VARUS
Orthotics:

- Custom-fabricated device
- Supports foot structure
- To restrict movement in a given direction
- To reduce pain
- To aid rehabilitation
- Can improve lower extremity function, i.e. knee pain
Orthotics:
**Surgical Correction - Endoscopic Plantar Fasciotomy (EPF)**

- Single or Double portal
- Spur Removal not Required
- Designed for Medial Calcaneal Band Inflammation – Lengthens Medial Band
- Simple to Perform
Surgical Procedure  EPF

- 75-80% Successful
- Used after all conservative measures have been tried

- Quick recovery
- Immediate weight bear allowed
- Orthotic Post Op maybe needed
Modalities:

- **Shockwave**
  - Extracorporeal pulse activation treatment
  - Pressure waves stimulate metabolism, enhance blood circulation
  - Damaged tissue gradually regenerates and eventually heals

- **Topaz**
  - Coblation technology
  - Fast recovery
Tarsal Tunnel:

- Compression neuropathy in which the tibial nerve is impinged and compressed as it travels through the tarsal tunnel.

Symptoms:
- Burning sensation
- Numbness, tingling, or other abnormal sensations
- Pain
- Weakness of foot muscles
- Weakness of the toes or ankle

Treatment:
- Rest, strengthening of muscles, immobilization, corticosteroid and anesthetic injections, and orthotics
Success of Surgical Release

- Varied Surgical Success
  - Not as predictable as Carpal Tunnel

- “Tarsal Tunnel Syndrome: A Retrospective Study.”
    - 71.1% “showed improvement”
What do you do for forefoot pain?

Case History:

- 53 year old golfer presents to your office complaining of pain in his forefoot. Patient says it feels like he walking on “a bunched up sock.”

Patient also states the pain is a throbbing pain that radiates from the one area to the whole forefoot.
**Neuroma:**

- **Symptoms:**
  - Forefoot burning pain
  - Aggravated with ambulation, squatting, and tight shoe gear
  - Sharp, stabbing pain
  - Pain radiating to involved digits
  - Numbness
  - Feels like “walking on a pebble”
  - Relieved by rest and shoe removal
Neuroma:

Presentation:
Neuroma:

- **Initial Treatment:**
  - Pain management: NSAIDS
  - Proper shoe gear: large toe box, cost does NOT matter
  - Shoe modifications
  - Injection: Steroid injection
Neuroma:

- Referral:
  - Padding - offload metatarsals

- Injections -
  - Steroid
Non-surgical chemical neurolysis:

- Sclerosing alcohol injections:
  - Series of injections two weeks apart
  - 4% alcohol sclerosing solution
Neuroma: Surgical Neurolysis

- Surgical Excision: effective 70-95% of cases in literature
What do you do for foot pain?

Case History:

- 51 year old female presents to your office stating that she started wearing closed toed shoes again since summer and sandal weather is over. Patient complains shoes are tight and rub against her bunion. Her pain is localized to the “bump.”
**Structural Forefoot Abnormalities:**

- **Evaluation**
  - Deformities: Hammertoe, Bunion, Bunionette, Hallux Limitus/Rigidus

- **Pathogenesis:**

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- **Hammer toe**
- Proximal interphalangeal (PIP) joint
- Rotated toe
- Structural bunion
- Tailor’s bunion
Hammertoe:

- Symptoms: contracted toe, pain
- Pathogenesis
  > Proximal phalanx is dorsiflexed and middle phalanx plantarflexed
Hammertoe:

- **Types**
  - *Flexor stabilization* - pronated foot, hypermobility of forefoot → flexors fire early overpowering interosseous muscles
  - *Flexor substitution* - supinated foot, triceps weak → deep muscles of leg substitute
  - *Extensor substitution* - extensor digitorum longus overpowers lumbricales
Hammertoe:

- Surgical Treatment
Hallux Abducto Valgus:

- Symptoms:
  - Painful bump
  - Pain in tight shoes
  - Numbness
Hallux Abducto Valgus:

- **Biomechanics:**
  - The first ray relies on a **fine balance between its static** (capsule, ligaments, and plantar fascia) and **dynamic stabilizers** to maintain its alignment.
  - **Genetic predisposition** for a **nonlinear osseous alignment**.

Hallux Abducto Valgus:

Progressive Deformity:

- Obesity, poor fitting shoe gear, and gastrocnemius pull can accentuate the progression of the deformity.
- There is no evidence of a modality (i.e. orthotics) that stops the progression of the deformity.
Hallux Abducto Valgus:

- Surgical procedure can correct deformity
- Factors that determine procedure
  - Intermetatarsal Angle; Sesamodial Position
  - Joint Quality; Metatarsal Length

- Types of Procedures
  1. Distal
  2. Shaft
  3. Proximal
Hallux Abducto Valgus:

“Evaluating the Radiographic Change and Patient Satisfaction Following Bunion Surgery”

Laura C. Vander Poel, DPM* and Robert E. Marra, DPM

- Analyzed distal, shaft, and proximal bunion procedures
- Results - true success of a distal metaphyseal osteotomy not dependent on the post-operative radiographic correction.
  - Success lies in improved or resolved symptoms of patients, and their reasoning for electing the surgical treatment.
  - 89.2% of patients rated their satisfaction with bunion correction as good or excellent

*Current 3rd year resident at Saint Francis
Case History:

- 37 year old female presents to office complaining of pain over the fifth metatarsal area.
Tailor’s Bunion:

- Symptoms:
  - Prominence over 5th metatarsal head
  - Pain in tight shoes
  - Hyperkeratosis and erythema over 5th metatarsal head
Tailor’s Bunion:

- Surgical Correction
- Ostectomy
- Osseous procedure
Tailor’s Bunion:

Conservative Treatment

- Wider shoes
- Debride hyperkeratotic lesion
- Injection if inflammatory process present
What do you do for great toe pain?

Case history

- 47 year old male presents to office with chief complaint of pain with motion at left great toe joint. Patient states pain is increased with ambulating and excessive periods on his feet.
Hallux Limitus/Rigidus:

- Symptoms:
  - Inability to move hallux
  - Pain on range of motion
  - Inability to wear high heeled shoes
  - Enlargement dorsal 1st MTPJ
Hallux Limitus/Rigidus:

- Conservative Treatment
- Orthoses
- Metatarsal Bar
- Rocker-bottom shoes
Hallux Limitus/Rigidus:

- Surgical Treatment:
  - Joint sparing
  - Joint destructive
Professional Foot Care:

- Evaluation: Diabetic population
- Among patients with commercial insurance, a savings of $19,686 per patient with diabetes can be realized over a three-year period if there is at least one visit to a podiatrist in the year preceding a diabetic ulceration.
- Among patients with commercial insurance, each $1 invested in care by a podiatrist results in $27 to $51 of savings for the health-care delivery system.

Professional Foot Care:

- **Initial Treatment:**
  - Check vascular status
  - Check neuro status
  - Presence of lesions
  - Presence of deformities
  - Refer to podiatrist for monitoring
    - Progression of disease and
    - *Emergency treatment if needed*
Professional Foot Care:

- Referral
  - Check pulses-Doppler
  - Check sensation with Semmes Weinstein 5.07/10g monofilament
  - Deformities-evaluate extent of deformities
  - Debride hyperkeratotic lesions
  - Educate patient on importance of proper diabetic foot care
Ulcer Care:

- Presentation
  - Sensation
  - Open lesions
  - Signs of infection

- Diabetes is most common underlying factor related to lower extremity amputation*

Ulcer Care:

- **Initial Treatment**
  - Presence of open lesions
  - Signs of infection: antibiotics
  - Patient should be maintained non-weight bearing
  - Rapid referral
**Ulcer Care:**

- Referral: Podiatric care
  - Evaluation of size and depth of ulceration
  - Evaluate signs of infection and initiate antibiotics
- Debridement of all devitalized tissue
- Instruct patient on proper offloading technique
- Surgical Intervention including debridement and/or closure; removal of bony prominences
Pediatrics:

- Evaluation
- Foot structure
- Warts
- Sever’s disease
Pediatrics:

- **Initial Treatment**: IDENTIFY!
- Evaluate foot structure
- Presence of warts: salicylic acid, referral
- Sever’s disease: heel pain in growing children from micro trauma to growth plates
Pediatrics:

- Warts
- Salicylic acid
- Cryotherapy
Pediatrics:

- Referral
- Foot deformities: pes planus
  * Conservative vs. Surgical
Sports Injuries:

- Evaluation
- Ankle sprains
- Turf toe
- Toe dislocations
- Shin splints
- Overuse injuries
- Fractures:
  * Sesamoid
  * Metatarsal
Sports Injuries:

- Initial Treatment
- Rest, Ice, Compression, Elevation
- Pain management
- Immobilization
Sports Injuries:

- **Turf Toe:**
  - Upward bending of great toe
  - Painful, red, swollen great toe
  - Acute inflammation of dorsal and plantar ligaments
Sports Injuries:

- **Shin Splints**
  - Overload of muscles of lower extremity
  - Result from too much force on the shinbone and connective tissue attaching muscles to it.
  - Common in runners and in those who participate in activities with sudden stops and starts, such as football, basketball, soccer, tennis
Sports Injuries:

- Fractures:
Sports Injuries:

- Referral:
  - Get athlete back to activity as soon as possible
  - Therapy vs. Surgical rehabilitation
Questions?