

Podiatrists Just Do Toenails... Right???

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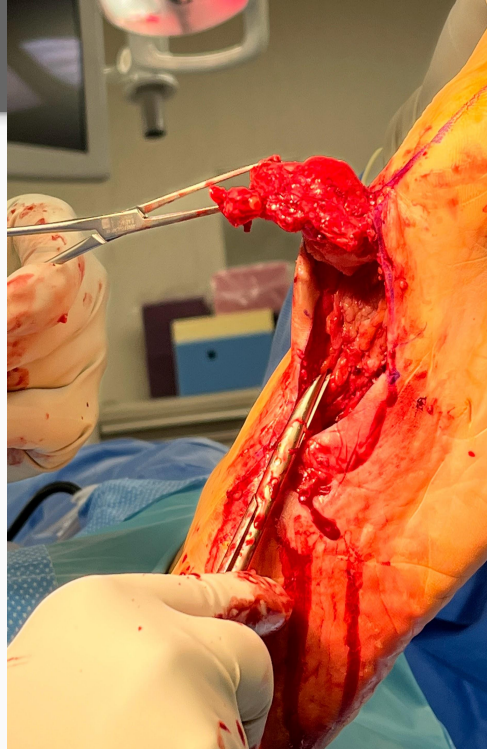


Learning Objectives:

Upon completion of this lecture, participants will be able to :

1. Differentiate between and understand initial treatment options/diagnostic studies regarding common toenail pathologies.
2. Differentiate between and understand initial treatment options/diagnostic studies regarding common causes of great toe pain.
3. Understand the benefit of weight-bearing films for different pathologies.
4. Become familiar with the benefits of and options for Bunion Surgery
5. Recognize difference in initial treatment for potential Toe Fracture versus Metatarsal Fracture(s).
6. Understand a podiatrists role in Foot and Ankle Fracture repair and initial conservative treatment modalities.
7. Recognize common and uncommon diagnosis regarding arch and midfoot pain.
8. Differentiate initial treatment of different causes of Heel Pain.
9. Understand initial workup and treatment of Acute Charcot deformity
10. Understand prophylactic management of Diabetic Feet and a potential process for ordering DM shoe/inserts and when this is more likely able to have some insurance coverage

What to Expect today!



What to expect

Early work-up and diagnostic studies and treatment for Foot/Ankle pathologies including:

- Toenails
- Great Toe Pain
- Foot and Ankle Fractures
- Arch/Midfoot Pain
- Heel Pain
- The Diabetic Foot



Dystrophic Nails

Differential Diagnosis:

- Onychomycosis
- Nail Trauma
- Psoriasis
- Lichen Planus
- Onychogryphosis



Dystrophic Nails

Differential Diagnosis:

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- ***Nail Trauma***
- Psoriasis
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- Onychogryphosis



Dystrophic Nails

Onychomycosis =



A fungal infection of the nail, usually caused by a dermatophyte) constitutes an important public health problem because of its high prevalence (**about 10% of the U.S. population**). (B E Elewski 1998)

Dystrophic Toenails

***Importance of an
Appropriate Biopsy***



Dystrophic Nails

- KOH
- Oral Treatment (3 months)
- Topical Treatment



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Ingrown Toenails/Onychocryptosis

Symptoms:

- Painful/irritated nail border
- Drainage (necrotic or purulent)
- Incurvated or Onychogryphotic Nails
- Can Come and Go



Onychocryptosis

Initial Treatment:

- Confirm patient goals
- Antibiotic–If NEEDED
- Partial Nail Avulsion (PNA)
- Preventative Instruction
- Refer if desired



Onychocryptosis

When to Refer to Podiatry:

- *If you don't want to deal with it*
- History of Ingrown Toenails
- Infected and wants gone for good (abx and refer)
- Just wants a Permanent Procedure

Great Toe Joint Pain

- Hallux Limitus
- Gout
- Hallux Valgus

Great Toe Joint Pain

- ***Hallux Limitus***
- Gout
- Hallux Valgus

Great Toe Joint Pain

Hallux Limitus =

a condition where movement of the big toe is restricted to varying degrees. This can be disabling, since we use the all-important big toe whenever we walk, stoop down, climb up, or even stand.



Great Toe Joint Pain



Hallux Limitus

Early Treatment:

- Topicals
- Custom Orthotics (reverse Morton's Extension)
- Dancer's Pad
- Joint Injection

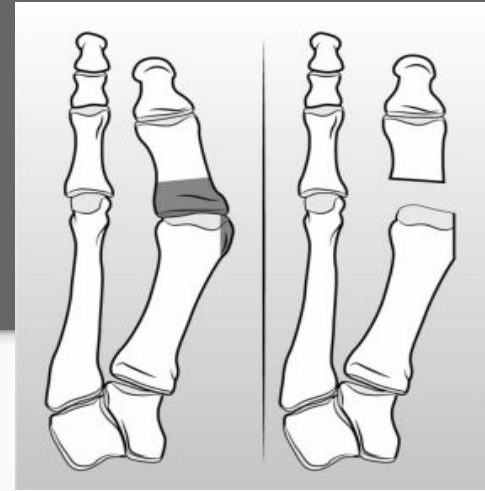


Great Toe Joint Pain

Hallux Limitus

Surgical Options:

- Joint Replacement
- Keller Bunionectomy
 - IPJ issues too
- Joint Arthrodesis



Great Toe Joint Pain

- Hallux Limitus
- ***Gout***
- Hallux Valgus

Gout

Gout =

Gout is a common and complex form of arthritis that can affect anyone. It's characterized by sudden, severe attacks of pain, swelling, redness and tenderness in one or more joints, most often in the big toe. (Mayo Clinic 2023)



Gout

Early Treatment:

- Uric Acid
 - Diet Changes
 - Anti-inflammatory
-
- Xrays
 - Eval the Joint damage



Gout – More Ideas

- Aspiration of Joint/steroid injection to calm down
- XR to evaluate joint
- May consider Joint Arthroplasty or Arthrodesis down the road

**Remember Gout can present in other joints of LE – Ankle for example
Or we can have BOTH Gout and Bacterial infection**

Great Toe Joint Pain

- Hallux Limitus
- Gout
- ***Hallux Valgus***



Hallux Valgus

Diagnostic Workup:

- Pain with Joint ROM or Bump Pain
- XR foot **Weight-bearing**
 - To see how the foot lands in stance position
 - Hypermobile 1st TMTJ?
 - Extent of 1st IM angle
- R/O Gout

Early Treatment Options:

- Padding
- Wider Shoes
- Topicals

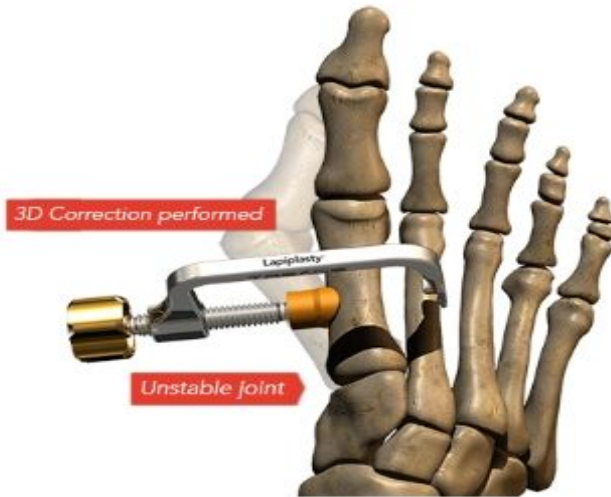
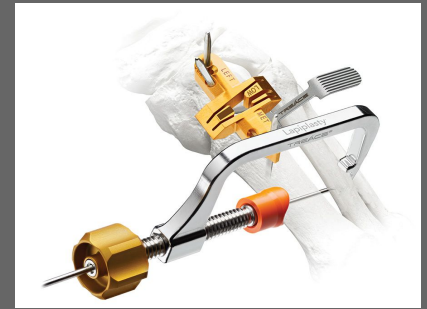
Hallux Valgus

Surgical Treatment

- Many ways to fix a Bunion
 - McBride
 - Austin
 - Arthrodesis

Lapiplasty Bunionectomy

Hallux Valgus – Lapiplasty



*Lapiplasty® 3D Bunion Correction™
permanently secures the unstable
foundation of the bunion*



Hallux Valgus – Lapiplasty

Case Scenario:

21 yo Female who I believe works with horses.

Worsening bunion pain

Wider shoes, toe pads, toe separators, ALL FAILED.

XR reviewed with pt, 15 deg 1st IM angle, with deformity in bone present at L 1st TMTJ and MTPJ, with only MINIMAL narrowing of 1st mpj.

Hallux Valgus – Lapiplasty

Case Scenario:

- Recommended conservative still:
- Fleet Feet non-custom Orthotics and wider shoes
- 3 weeks later: Surgical Discussion

Surgery plan: Left 1st Ray Lapiplasty Bunionectomy with possible Bumpectomy

Decided to leave 1st mpj alone as MINIMAL narrowing.

Hallux Valgus – Lapiplasty



**Post-
op
Films**



Hallux Valgus – Lapiplasty

Post op:

- 6 days Post op: Minimal Pain (only taken 1 pain pill)
- 2.5 weeks post op: Almost no pain or swelling. Fantastic!
- 7.5 weeks post op: Switching to Regular shoe (limited strenuous activity still)

Hallux Valgus – Lapiplasty

Benefits:

- Early WB
 - Less DVT risk
- Strong, stable internal HW
- Less Recurrence

“Using advanced instrumentation, the entire metatarsal bone is corrected in all three dimensions, restoring it to its proper alignment while naturally removing the bump and straightening the toe,” Brink added. “The unstable joint is then fused with titanium plates, which permanently secure the correction in place. Although recurrences can still happen, the Lapiplasty dramatically reduces the risk of recurrence.” (UChicago 2020)

Toe Fractures

Early Intervention:

- Surgical Shoe or Tall Orthopedic Boot (even better)
- Pain Management
- Encourage to Limit Weight
- Patient to monitor for excessive swelling/pain/white toes (may need to put into proper position first to stabilize till surgery)
 - More to the story?

Metatarsal Fractures

Early Intervention:

- Tall Orthopedic boot and Minimal to NWB (crutches or knee scooter)
- RICE
- Pain Management
- Monitor for excessive pain/swelling/white toes
 - Compartment Syndrome = ER and emergent Surgical decompression
- Text me/teams me info
 - Into office within 2-3 business days

Ankle Injury

Early Intervention:

- Ankle Sprain
 - Ace wrap and crutches
 - Ankle Brace once feeling better
 - XR 3v Ankle to confirm no fx
- If concern for possible fracture
 - NWB if possible, tall ortho boot
 - Careful for excessive swelling in boot
- RICE

Ankle Injury

Further work-up:

- Refer to podiatric Surgery for
 - Tendon/ligament injury workup requiring surgery
 - Fracture ORIF asap (when required)
- Why Podiatry?
 - Foot and Ankle Training since year one of professional Schooling
- Scope of Podiatry
 - Conservative and Surgical management of foot and ankle pathology.

Arch Pain/Midfoot Pain

Diagnostic testing:

- Palpate to find pain point
- Heel Rise Test (SHR)
- XR 3V Foot WB

Differential Dx:

- Midfoot arthritis
- PTTD
- Plantar Fasciitis
- Exostosis of Midfoot
- Lis Franc Injury

Early Intervention:

- Supportive orthotics
- Topical: Voltaren gel, Deep Blue
- RICE

Arch Pain/Midfoot Pain



Case Scenario:

C.H. 59 yo Female Chronic Midfoot Pain.

Hx Multiple Surgeries trying to address elsewhere

Great result from C-arm guided Steroid Injection 1st NCJ

Elected to move forward with Flatfoot Recon and 1st/2nd NCJ Fusion



Post Op



Heel Pain

Symptoms:

- Post Static Dyskinesia
- No hx Trauma
- Mild Swelling



Heel Pain

- Physical Exam
 - Palpate plantar calcaneal tubercle, central heel, medial palpation/tinel's over Abductor Hallucis muscle belly, side-to-side heel squeeze, palpate posterior Heel and Silverskiold Test
- Ddx:
 - Plantar Fasciitis
 - Inferior Calcaneal Bursitis
 - Calcaneal Stress Fracture (squeeze test)
 - Insertional Achilles Tendonitis
 - Haglunds Deformity

Imaging:

Not required initially unless concerned for fracture

Heel Pain

If you get a foot XR...

**Plantar
Heel Spur =
No Problem**

**Posterior
Heel Spur =
Problem**



Heel Pain

Early Intervention:

Plantar Fasciitis

- RICE
- Topical anti-inflammatory
- Supportive Orthotics
- Appropriate Stretching Program or PT
- Send for podiatry f/u

Insertional Achilles Tendonitis (enthesitis)

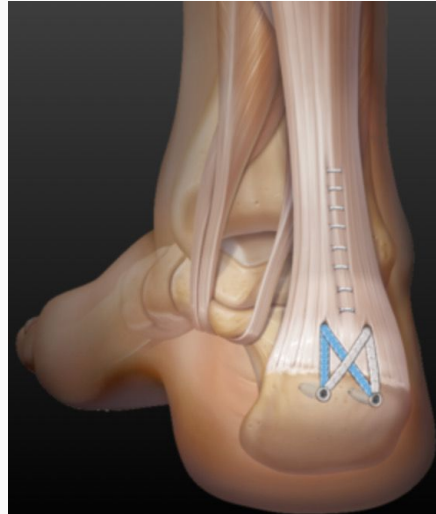
- RICE
- Topical anti-inflammatory
- Adjustable Heel Lift
- HOLD on stretching
- Send for podiatry f/u

Heel Pain



Podiatric Surgical Management:

- EPF or Tenex
- Retrocalcaneal Exostectomy and Calf Lengthening



Diabetic Charcot Foot

A BIGGIE!!

- Know what symptoms to look for to best optimize patient outcome!
 - Erythema, warmth, swelling, usually in typically an insensate foot
- Immediate Treatment: NWB
- Long-term Treatment: Crow Walker, consider Charcot Reconstruction



Diabetic Charcot

Definition: Progressive degeneration of the joints, but it potentially is devastating in its consequences.[1](#) It commonly affects the middle of the foot, hind-foot joints, the ankle, and forefoot joints, and it is believed to result from inflammation in the foot that becomes abnormally protracted due to the underlying neuropathy.[2–8](#) The prevalence of Charcot neuroarthropathy is up to 13% in individuals with diabetes. (Vopat)

Diabetic Charcot—A Proposed Process

Inflammation in neuropathic patient leads to an increase in pro-inflammatory cytokines (interleukin-1 β and tumor necrosis factor- α) which leads to receptor activator of the nuclear factor- κ B ligand (RANKL-NF κ B) pathway. Osteoclasts are activated leading to bone lysis followed by clearing of debris. In the presence of autonomic neuropathy, there is increased blood flow to the area, which acts to clear away bony material demineralizing the bone, cartilage, and soft tissue in the region.³ However, in the presence of diabetic neuropathy, the patient does not have the protective pain perception. Therefore, they continue to walk on the inflamed foot exacerbating the progressive pathway of osteolysis and osteopenia and weakening the pedal skeleton, leading to the high risk for dislocation and/or fracture.

About 25% of patients develop similar changes in the contralateral foot. (Vopat)

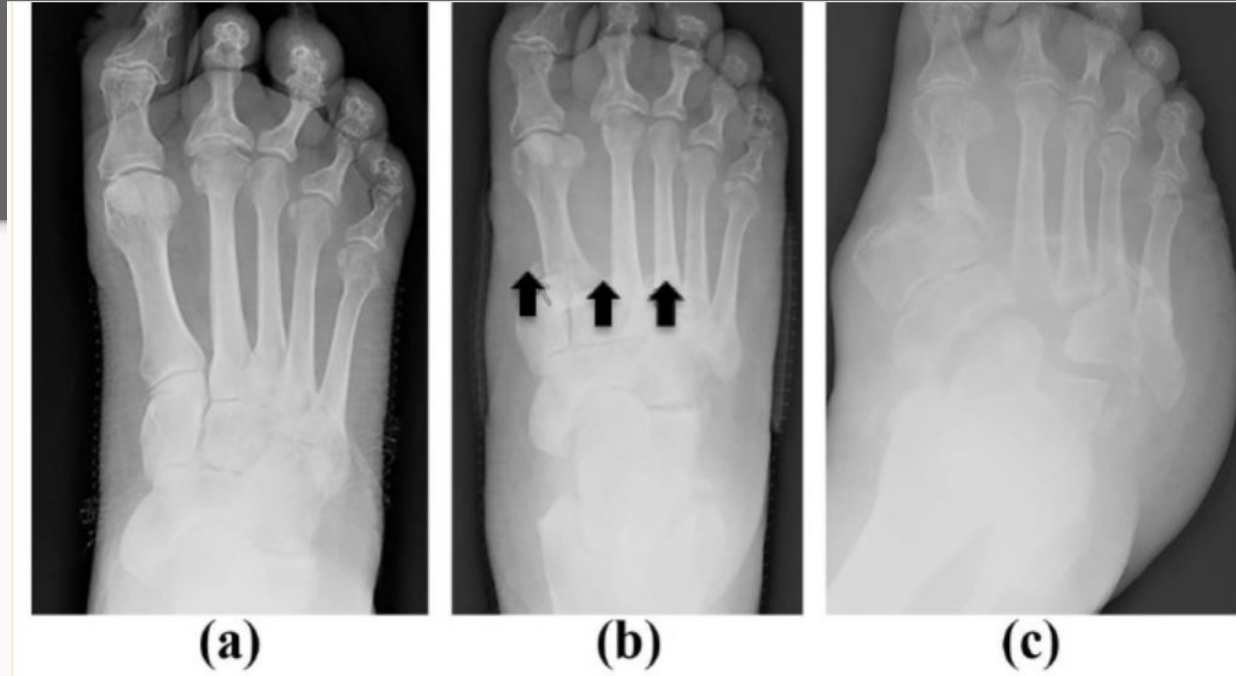
Diabetic Foot

- A significant financial impact on the health care system through primary care, community care, outpatient costs, increased bed occupancy, and prolonged stays in hospital.
- Missed diagnosis is as high as 79% which ultimately leads to a delay in treatment for an average of 29 weeks.
- Wound Clinic patients (Forever it seems)

The underlying peripheral neuropathy can skew the pain perception the patient experiences and can mislead the clinician on their differential diagnosis of an “inflamed foot”. (Vopat)



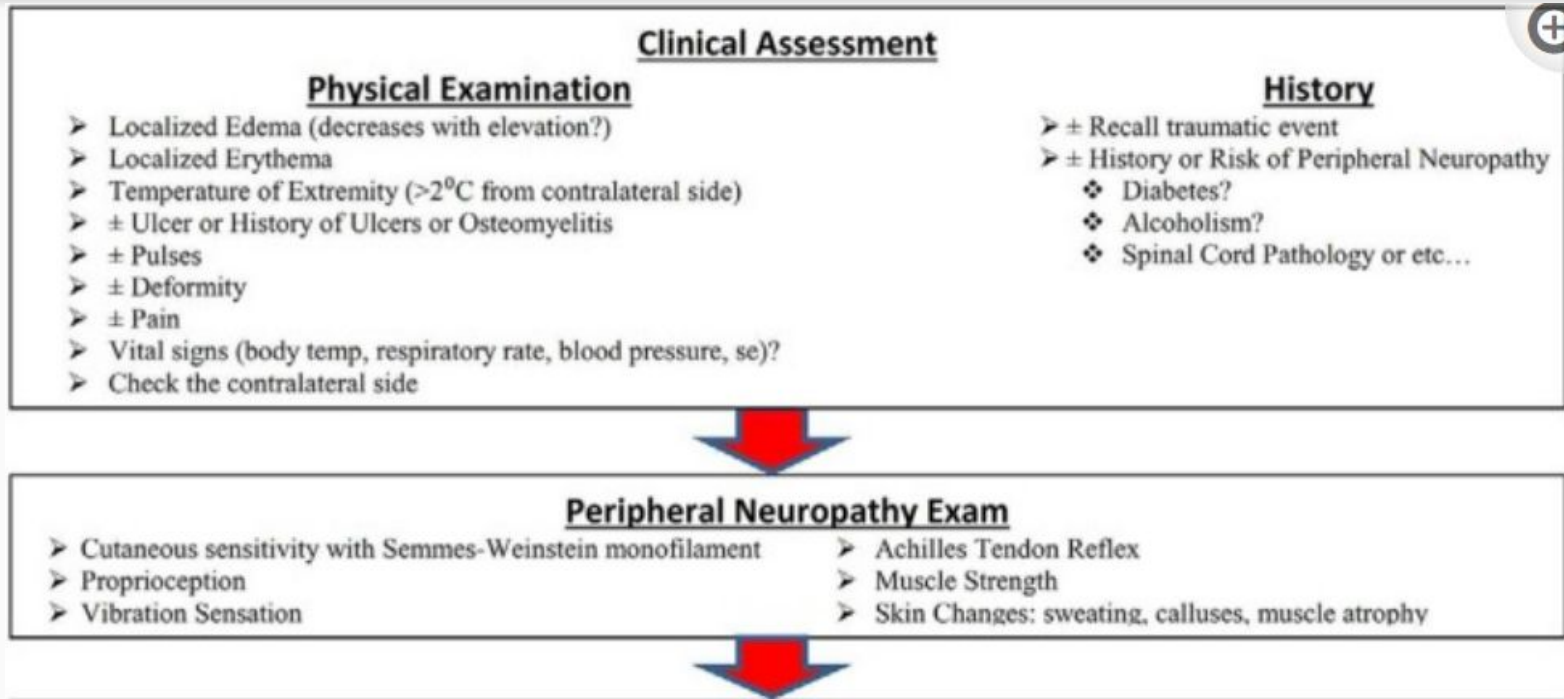
Progression of a foot Charcot neuroarthropathy on plain radiographs:



(Vopat)

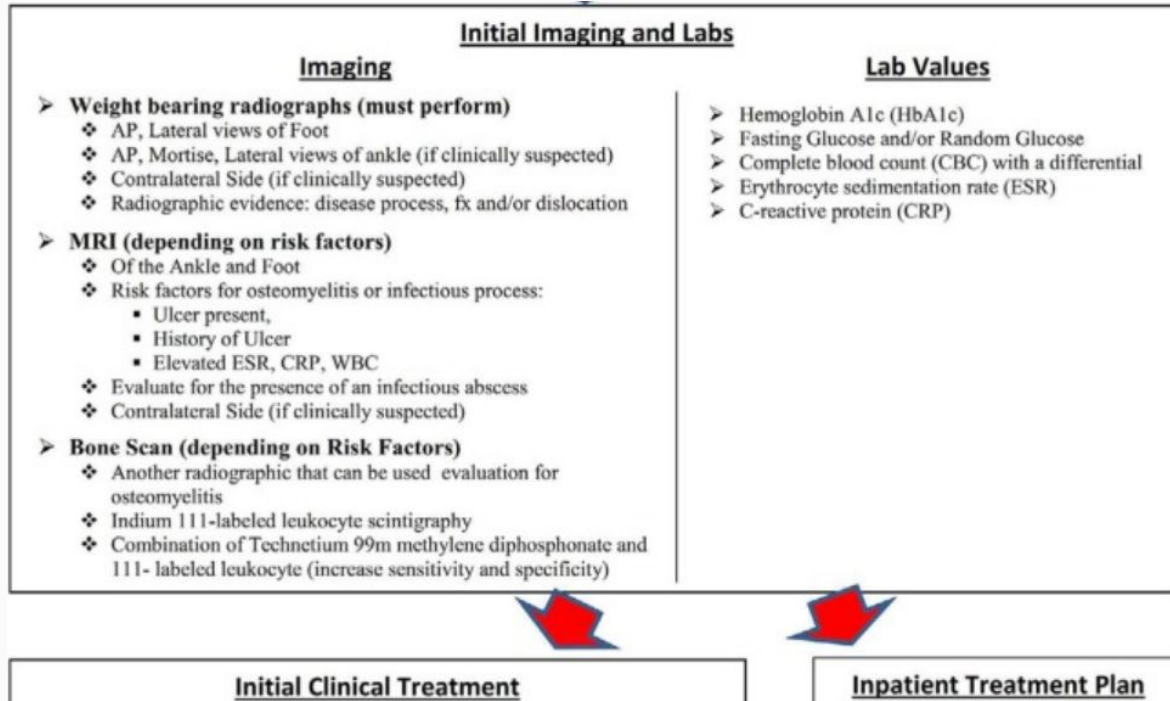
(a) Initial anteroposterior view of an acute Charcot neuroarthropathy foot; (b) 6-month follow-up, which shows the persistent and progressive joint effusion, narrowing of the joint space, soft tissue calcification, minimal subluxation, osteopenia, and bone fragmentation; and (c) 2-year follow-up, which shows severe destruction of the foot without proper management.

Charcot Work-up



(Vopat)

Charcot Work-up



(Vopat)

Charcot Work-up



Initial Clinical Treatment

- **Immobilize with either by TCC or iTCC**
 - ❖ If limited experience in the application of TCC or ITCC. Then can immobilize in a short leg plaster splint with a clear understanding that this is **not** definitive treatment for immobilization.
 - ❖ Contradictions to TCC are active or acute deep infection, gangrene.
- **Non-weight-bearing of affected side**
 - ❖ Crutches or knee scooter
 - ❖ Prescribe wheel chair if:
 - Clinic suspicion of compliance
 - No supplies for immobilization
 - Contralateral Charcot foot deformity
- **Referral to a Foot and Ankle Specialist (Orthopaedic Surgeon or Podiatrist)**



Inpatient Treatment Plan

- **Meet SIRS Criteria?**
- **Ulcer infected?**
 - ❖ Actively draining
 - ❖ Smell
 - ❖ Bone Visible through Wound
- **Treatment:**
 - ❖ Culture/biopsy
 - ❖ Irrigation & debridement
 - ❖ Antibiotics

(Vopat)

Diabetic Charcot–Main Point

A high degree of suspicion of Charcot neuroarthropathy is necessary with thorough history and physical examination when a patient presents with an acute erythematous, warm, or edematous foot, with or without any significant history of trauma or surgery, especially for patients with diabetes and peripheral neuropathy with these symptoms. (Vopat)

Prophylaxis for Diabetic Foot Complications

–The Diabetic Shoes/Inserts

1. Refer to Podiatry for Full Foot Exam if you want input for modifications
2. We will send a form to provider managing DM to sign
 - a. State you agree with our exam and recommendations
 - b. We will send you my note to review
3. We will submit the appropriate prescription for DM shoes/inserts with any customization I feel is appropriate
 - a. Metatarsal Head offloading bar, Toe Filler, Specific met head offload, etc.
4. Patient receives call from Orthotist for initial eval and usually receives them within 3 weeks of that.
5. Adjustments by Orthotist as needed thereafter

Prophylaxis for Diabetic Foot Complications

–The Diabetic Shoes/Inserts

Who can benefit from these—more likely to get some coverage?

- DM with Peripheral Neuropathy
- Hyperkeratotic lesions
- Hammertoe or Hallux Valgus Deformity
- Peripheral Vascular Disease
- Diabetic Foot Ulceration
- Foot Deformity

Summary of What Podiatry can Help With

- DM Foot Checks (cannot always get nails and calluses covered)
- DM and Pressure Ulcer Management
- Foot and Ankle Injury
 - Including Conservative or Surgical ORIF or Surgical Tendon Repair
- Tendinopathy
 - Including Conservative or Surgical Care
- Great Toe Joint Pain
 - Joint Replacement vs Fusion etc
- Common issues such as:
 - Ingrown Toenails, Painful calluses/corns, Soft Tissue Masses

Contact Info to help refer more urgent things!

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or via

Microsoft Teams



The Crew



Thank you!



A Few References:

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