



PrePodiatryStudy Case Studies



Case

HPI: A 21-year-old college male presents to the ED with a chief complaint of a painful right foot. He stepped into a pothole while at a local festival approximately 3 hours earlier. Patient could not bear weight immediately after accident. Patient had been drinking alcoholic beverages for several hours before the incident. Patient rates the pain as 10/10 sharp, throbbing pain. Pain is localized to his right foot and constant since the fall.

What do you want to know next?

Past Medical History

PMH:

- Illnesses: Denies
- Meds: None
- Allergies: NKDA
- FH: MI
- SH: Student, relates EtOH, occasional tobacco use, denies illicit drug use
- ROS: Negative outside of chief complaint

What do you want to know next?

Physical Exam

- Vascular
 - DP/PT palpable pulses, CFT < 3 sec
 - +2 pitting edema of left ankle
- Dermatologic
 - No blisters or tented skin noted
 - No open wounds noted
- Neurologic
 - Proprioception intact BLLE
 - Light touch intact BLLE
- Musculoskeletal
 - Right forefoot abducted at midfoot compared to left foot
 - Severe pain on palpation of right foot
 - Extreme guarding so range of motion exam and muscle strength is very limited

Clinical Image

Read the clinical image





Read This X-Ray



Imaging

Read the image.

Imaging

- Anterior-Posterior and Lateral Foot
- Please classify this injury
- Would you like any other imaging?



What's your conservative
plan, Doctor?

Conservative Plan

- What are your initial treatments prior to surgical interventions?
- What justifies surgical intervention?



What's your surgical
plan, Doctor?

Surgical Plan

- What are the options for surgically correcting a patient with a Lis Franc fracture?

Surgical Post-Operative Plan

- Pain Meds?
- Post-Op protocol?
- Return to clinic in how many days?
- When to take sutures out?
- When to take X-rays?
- When do you start weightbearing? **Why?**
- When to return to regular shoe?



Rapid Fire Questions

Rapid Fire Questions

- What amount of displacement indicates instability?
- What are the anatomical attachments of a Lis Franc ligament?
- What movement is the mechanism of action for this injury?
- What foot deformity results from a missed Lis Franc injury?
- What is the “keystone configuration”?
- When is a contralateral foot x-ray important for Lis Franc Injuries?
- Why are CT scans useful?
- If fracture blisters are present, how long should you wait to perform any surgical intervention?



Answers

Clinical Image



Edematous foot with evidence of ecchymosis changes to the arch and rearfoot. No evidence of skin tenting or open wounds.



Imaging

AP: This is a skeletally mature male who has a traumatic discontinuity of the medial 2nd metatarsal base with the medial border of the intermediate cuneiform. Widening of the space between the 1st and 2nd metatarsal bases is noted with a lateral displacement of the TMTJ's.

Lateral: Dorsal displacement of the metatarsal bases at the TMTJ.

Imaging

- Anterior-Posterior View (AP View) and Lateral Foot
- Classify the injury?

Hardcastle & Myerson classification 	
Type A	• Complete homolateral dislocation
Type B1	• Partial injury, medial column dislocation
Type B2	• Partial injury, lateral column dislocation
Type C1	• Partial injury, divergent dislocation
Type C2	• Complete injury, divergent dislocation

- Another Image: CT

Conservative Plan

- What are your initial treatments prior to surgical interventions?
 - Jones compression
 - Nonweightbearing with a posterior splint and crutches
 - Cast immobilization for 8 weeks (only if nondisplaced or very poor surgical candidates)
- What justifies surgical intervention?
 - The need for the stabilization of the medial column
 - Displacement of the lis franc joint

Surgical Plan

- Options:
 - ORIF with homerun screw
 - Favored in fractured dislocation injuries
 - Primary Arthrodesis
 - Need to fuse TMTJs 1-3
 - Used for ligamentous injuries and arch injuries, delayed treatment, chronic deformity, and complete dislocations
 - Midfoot Arthrodesis
 - Usually used in chronic injury that has causes midfoot arthrosis

Surgical Post-Operative Plan

- Pain Meds?
 - Oxycodone 5mg
- Post-Op protocol?
 - CAM boot NWB for approximately 4 weeks, PT, passive ROM
- Return to clinic in how many days?
 - 3 to assess for infection
- When to take sutures out?
 - 10-14 days
- When to take X-rays?
 - Every 2 weeks to ensure maintained correction for 6-8 weeks
- When do you start weightbearing? **Why?**
 - 4-6 weeks depending on surgical treatment
- When to return to regular shoe?
 - 4-6 weeks

Rapid Fire Questions

- What amount of displacement indicates instability?
 - 2mm
- What is the anatomical attachments of a Lis Franc ligament?
 - The medial cuneiform to the base of the 2nd metatarsal
- What movement is the mechanism of action for this injury?
 - Axial load through a hyperplantar flexed forefoot (hyperflexion/compression/abduction)
- What foot deformity results from a missed Lis Franc injury?

Rapid Fire Questions

- What is the “keystone configuration”?
 - second metatarsal fits in mortise created by medial cuneiform and recessed middle cuneiform
- When is a contralateral foot x-ray important for Lis Franc Injuries?
 - When an injury is subtle or you’re unsure if there is a true ligamentous disruption
- Why are CT scans useful?
 - For surgical planning
- If fracture blisters are present, how long should you wait to perform any surgical intervention?
 - Until the soft tissue envelope normalizes (usually 2-3 weeks)



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Thank You