



# Lisfranc

Ready. Set. Go!

The French doctor that worked for Napoleon's army. These kind of fractures may be obvious or sometimes tricky to diagnose. Make sure to get an AP and Lateral radiograph and even a CT scan to assess the patient.

# Case

- HPI: A 50 year old female took a miss step off a curb and is now having pain on her RIGHT foot. She point to the middle of her foot where there is some redness and swelling. The event happened 2 hours ago and states it has not gotten better. She finds it difficult to apply pressure on it when walking. She has tried icing, elevating, and taking Tylenol.

*What would you want to know next?*

# PMH

- **Illnesses:** DM II, CKD III, Afib, HTN, HLD
- **Meds:** Glipizide, Insulin, Lasix, Coumadin, Atenolol, Enalapril, Simvastatin
- **Allergies:** Sulfa, gets rashes
- **Hosp/Operations:** Hysterectomy (2000)
- **SH:** smokes, has 15 pack years. Drinks socially
- **FH:** Diabetes (father)

# Objective

## Vasc

- DP/PT pulses to RIGHT foot are non-palpable
- CFT is <10 seconds
- Significant edema to right midfoot
- Right foot is slightly cold to the touch

## Neuro

- Loss of peripheral sensation to RIGHT foot.

## MSKT

- Unable to assess ROM of right foot due to pain and guarding
- Unable to wiggle toes of RIGHT foot

## Derm

- Ecchymosis of plantar right foot along with significant swelling and serous fracture blisters on dorsal midfoot. No open lesions.

*What would you like to know next?*

Read this radiograph



# Classification?



What do you want to do  
next Doctor?

Did you want to cast them?

# Surgery

- What kind of surgery would you perform?
- Where would you make incision?
- How many incisions would you make?
- Where will you put your first screw?
- Will you use a plate? Or just screws?
- Would you fixate 4<sup>th</sup> and 5<sup>th</sup> TMTJ?



# Post-op care

- What are the most common complications with Lisfranc injuries?
- How long should this patient be NWB?
- When do you take sutures off?
- When would she be in regular shoe gear?
- What puts her at higher risk for not healing?

# Pimp Questions

Lisfranc Fractures

# PIMP Questions

1. What is the mechanism of injury for Lisfranc?
2. What anatomical structures create barrier to prevent proper closed reduction?
3. Plaster versus fiberglass?
4. What medications are most commonly used during closed reduction attempts?

# PIMP Questions

1. What is controversy with ORIF vs arthrodesis?
2. Give one Landmark article.
3. What is the homerun screw?
4. Would your treatment change if it was a 10 year old child?

# Answers

# What do you want to do next Doctor?

1. Re-check pulses: unable to be dopplered!
2. Closed Reduction: exaggerate, distract, reduce, splint
3. Get new X rays
4. Take to surgery

# Surgery

- What kind of surgery would you perform? ORIF vs primary arthrodesis. Defend your answer
- Where would you make incision? Longitudinal 1<sup>st</sup> interspace
- How many incisions would you make? 1 or 2, usually 1st interspace and either 3rd or 4th interspace. Defend your answer
- Where will you put your first screw? Home run screw
- Will you use a plate? Or just screws? Either or, defend.
- Would you fixate 4<sup>th</sup> and 5<sup>th</sup> TMTJ? Not necessary in most cases, surgeon's choice. Use pinning to preserve lateral column

# Post-op care

- What are the most common complications with Lisfranc injuries? arthritis, long-term disability, possible non-union, DVT
- How long should this patient be NWB? 6-8 weeks
- When do you take sutures off? 2-3 wks
- When would she be in regular shoe gear? full WB at 8-10 weeks in CAM, but 10-12 weeks in shoe.
- What puts her at higher risk for not healing? Diabetes, CKD, smoking history, poor blood flow will delay healing



# PIMP Questions

1. What is the mechanism of injury for Lisfranc? Direct injury, hyperflexion, buckling, plantarflexed foot, Motor vehicle accident (MVA)
2. What anatomical structures create barrier to prevent proper closed reduction? DP artery, DP nerve, AT tendon
3. Plaster versus fiberglass? Plaster can better accommodate the swelling. Apply 3 point technique
4. What medications are most commonly used during closed reduction attempts? Fentanyl and versed, propofol/ketamine, even perform hematoma block

# PIMP Questions

1. What is controversy with ORIF vs arthrodesis? ORIF higher rates of arthritis. Fusion better, less chance for revision.

2. Give one Landmark article.

- Arntz – 3.5/4.0mm cortical best
- Kuo – 2 screw prevents rotational changes
- Mulier – 94% of ORIF had degenerative changes in their study, fusion better

3. What is the homerun screw? medial cuneiform to 2nd met base

4. Would your treatment change if it was a 10 year old child? Closed reduction attempt is only (1) one. No screws used, only soft pins if the foot is skeletally immature and has growth plates. No consideration for arthrodesis since he is too young, attempt ORIF first!