



PrePodiatryStudy Case Studies



PrePodiatryStudy
Calcaneal Fracture

Case

HPI:

60 YO M who is a professional painter presents to the ED 2 hours after “slipping off his ladder while painting a house.” After standing up from the fall, he noticed immediate pain to his left heel and couldn’t walk. His partner drove him to the ED for evaluation. He denies any neck, head, or back pain.

ROS: She denies fevers, nausea, or shortness of breath.

What do you want to know next?

Past Medical History

PMH:

- Illnesses: HTN, Sickle Cell Anemia
- Meds: HCTZ 5mg
- Allergies: Codeine
- FH: -
- SH: (+) smoking. Admits 2 alcoholic drink a week

What do you alternative to codeine allergy?

What do you want to know next?

Physical Exam

Vital Signs

Temp: 98.2°F HR: 90 bpm

RR: 20 breaths/min

- Vascular
 - DP/PT palpable pulses
 - +2 non pitting edema of left ankle
- Dermatologic
 - Erythema to forefoot present
 - (+) Ecchymosis to plantar foot
- Neurologic
 - Good sensation with 10g SWMF
 - Gross sensation intact
- Musculoskeletal
 - Pain on palpation heel bone, Left
 - Able to move toes
 - Antalgic gait noted with ambulation

What is the definition of ecchymosis?



Clinical Image

Read the image.

What labs and imaging would you order?

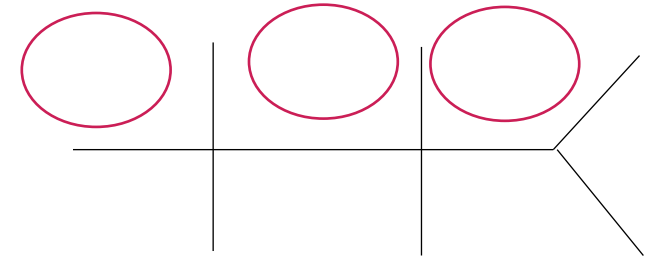
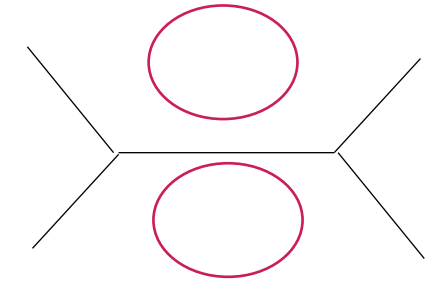


Labs?

Labs

- CBC/ BMP
- WBC: 17,000
- Nicotine & Drug screen – negative

- Pre surgical clearance
 - EKG, Chest xray



What are the normal values of the circled labs?



Read Me This Xray

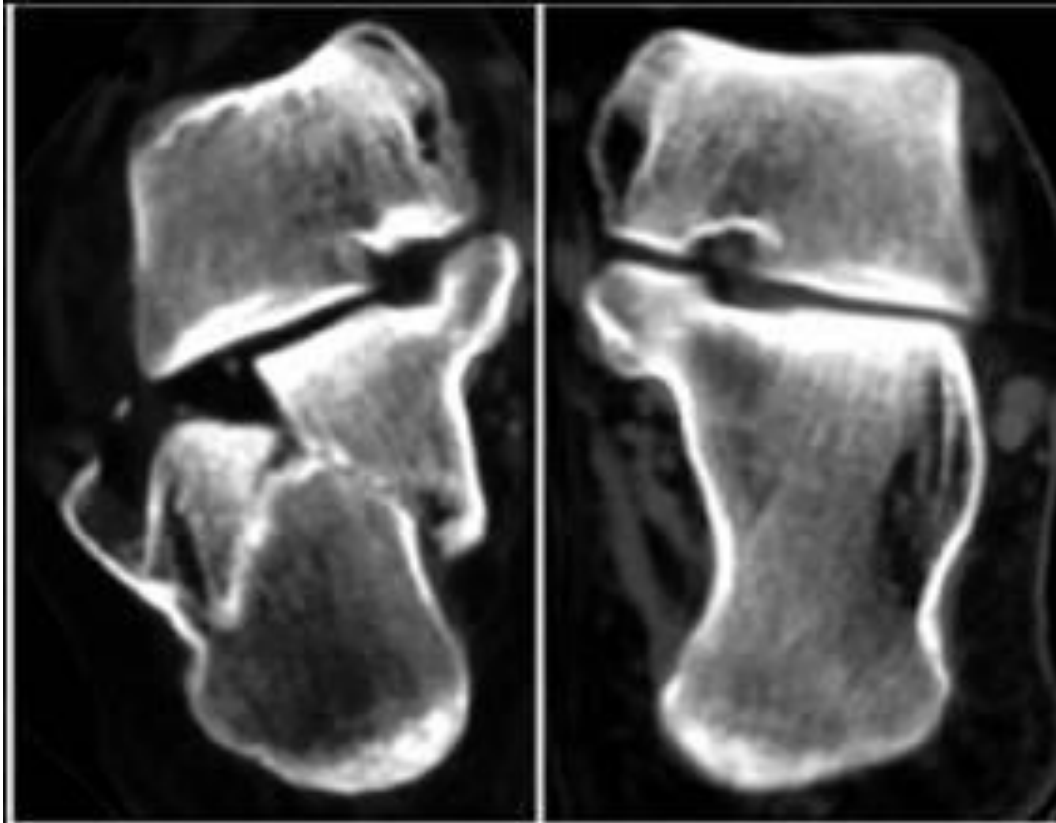


Imaging

Read the image.

Imaging

Read the image.





Assessment & Plan?

Plan

- How will you manage the patient in the ED?
- Pain management you'd like to give?
- How would you close reduce this fracture?



What's your surgical
plan, Doctor?

Plan

- What is your surgical plan?
- What are different options you can use to treat surgically?



Rapid Fire Questions

Rapid Fire Questions

- What 2 complications you MUST rule out?
- What is the plantar ecchymosis called that is pathognomonic for calcaneal fractures?
- Name the extra-articular classification for calcaneal fractures?
- Intra-articular classification?
- CT scan?

Rapid Fire Questions

- What is the most common long-term sequelae of calcaneal fractures? How would you manage this problem?
- What soft tissue pathology found in the popliteal fossa has a 50% (highest) incidence in rheumatoid arthritis patients?
- What is Felty's syndrome?
- What is Still's syndrome?

Rapid Fire Questions

- Describe two different incisional approaches?
- Describe what comprises “Hibbs angle?” What is a normal value?
- What intra-op complications can occur with a patient who has sickle cell anemia?
- What organism are sickle cells patients most likely to acquire in osteomyelitis?



Answers

Past Medical History

PMH:

- Illnesses: HTN, Sickle Cell Anemia
- Meds: HCTZ 5mg
- Allergies: Codeine
- FH: -
- SH: (+) smoking. Admits 2 alcoholic drink a week

What do you alternative to codeine allergy?
STUDENT: Stradol, Toradol, Ultram,
Demerol, Nubim, Talwin

What do you want to know next?



Clinical Image

Read the image.

“This is a Clinical image of a left foot planter view with edema generalized to the posterior heel and midfoot. There is increased ecchymosis to the midfoot and heel. There is no evidence of open wounds or fracture blisters”

What labs and imaging would you order?

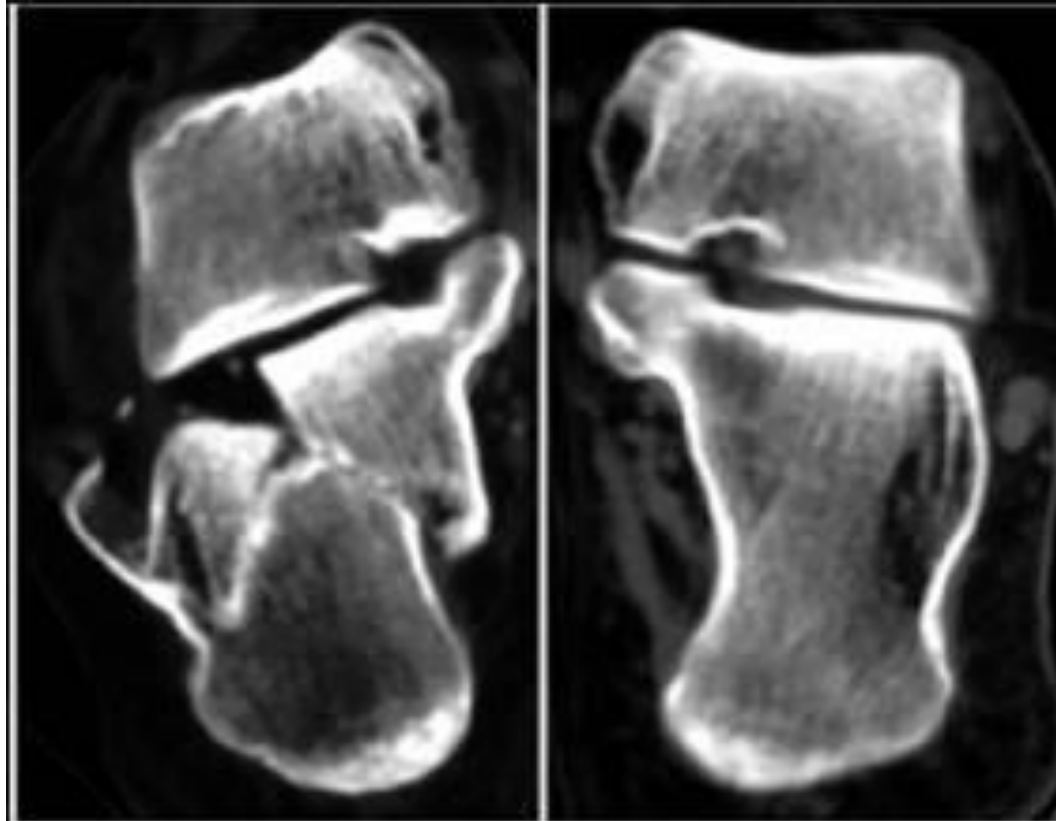


Imaging

Read the image.

“ This is a lateral view of a non weight bearing foot. There is a displaced fracture of the posterior aspect of the calcaneus that goes through and through anteriorly to the subtalar joint with a secondary fracture extending posteriorly consistent with Essex-Lopresti tounge type fracture. Bohler angle appears to be decreased with angle of gisanne increased.”

Imaging



Read the image.

“This is a coronal projection of a bone window view of the calcaneus. There notes to be a single fracture line at the posterior facet with 2 fragments. No comminution is seen. My impression is Sanders type 2A. “

Plan

- How will you manage the patient in the ED?
 - Close reduce the patient, place in Jones compression dressing, reassess blistering or skin tenting for possible surgery. If needed will wait 7-10 days for acceptable skin quality to perform surgery
- Pain management you'd like to give?
 - Toradol, tramadol
- How would you close reduce this fracture?
 - Exaggerate the fracture deformity, distract, reduce, and splint.
 - Check again neurovascular after reduction

Plan

- What is your surgical plan?
 - I will surgically fixate the fracture by restoring the height, width, and posterior facet in proper alignment. In addition, 'thou shall not varus' the calcaneus.
- What are different options you can use to treat surgically?
 - I would use a L extensile incision technique to assess the bone, fixate the patient with either a calcaneal plate, possible do joystick maneuver for fracture bone reduction.
 - You can also do a percutaneous lateral plate on the calcaneus

Rapid Fire Questions

- What 2 complications you MUST rule out?
 - Vertebra fracture (L4-L5) and compartment syndrome
- What is the plantar ecchymosis called that is pathognomonic for calcaneal fractures? Mondor's sign
- Name the extra-articular classification for calcaneal fractures?
 - Rowe classification
- Intra-articular classification? Essex Lopressi
- CT scan? Sanders Classification

Rapid Fire Questions

- What is the most common long-term sequelae of calcaneal fractures? How would you manage this problem?
 - Post traumatic arthritis. You manage it by doing STJ fusion
- What soft tissue pathology found in the popliteal fossa has a 50% (highest) incidence in rheumatoid arthritis patients? Baker's Cyst
- What is Felty's syndrome?
 - Triad in Adults – RA, splenomegaly, neutropenia
- What is Still's syndrome?
 - Triad in pediatrics – RA, splenomegaly, LAD

Rapid Fire Questions

- Describe two different incisional approaches?
 - Lateral extensile incision using ‘no touch technique’
 - Oiler's incision – oblique incision between superficial peroneal nerve and sural nerve on lateral calcaneus
 - Palmer's incision – tip of lateral malleolus to the 4th metatarsal base
 - Minimally invasive sinus tarsi approach
- Describe what comprises “Hibbs angle?” What is a normal value?
 - Inferior aspect of calcaneus to 1st metatarsal declination angle, normal is 130-140 degrees. It decreases in a cavus type foot.
- What intra-op complications can occur with a patient who has sickle cell anemia?
 - Thrombosis, due to tourniquet causing ischemia
- What organism are sickle cell patients most likely to acquire in osteomyelitis? **Salmonella**



PrePodiatryStudy
Thank You