

Abstract

The purpose of this case study is to investigate the effectiveness of the use of external fixation in the treatment of high impact talus fracture injury patterns. In this case, a 27-year-old female with no significant past medical history presented with an acute injury of a Hawkins type 2 talus fracture of the left lower extremity. After initial presentation and evaluation, the patient underwent closed reduction and posterior splinting in the emergency room. Upon evaluation of the injury post reduction clinically and radiographically, the recommended treatment for the patient's injury was external fixation. The use of external fixation for this talus fracture allowed for early fixation with the maintenance of anatomic stability and adequate compression of the fracture site. In addition, the use of external fixation with this injury allowed for decreased soft tissue dissection in the presence of post-traumatic edema. This recommended external fixation remained applied to the left lower extremity for 4 weeks while the patient was non-weight bearing to the injured limb. At the 4-week follow-up, the external fixator was removed from the left lower extremity, and the fracture to the talus was noted completely healed on radiographic imaging. In conclusion, the use of external fixation for the treatment of talus fractures can be a very effective modality in the setting of high impact closed and/or open injury patterns.

History of Present Illness

Patient is a 27 y/o female who presents to Aventura Medical Center Emergency Department with an acute left ankle injury. Patients stated that about 3 hours prior to initial presentation she was performing "American Ninja Warrior" type athletic training in which she ran up a curved wall, did not make it up to the top level, walked back down the wall, and her foot twisted. She cannot remember further details of how the injury happened, but states that her "foot landed wrong" and she felt as if something was broken. Patient rates her pain 10/10 currently.

The Patient

- 27 year old African American Female:**
- Ankle Dislocation of the Left Lower Extremity
 - Report Pain to be achy, throbbing, and sharp in nature
- Past Medical History:**
- Unremarkable
- Past Surgical History:**
- Unremarkable
- Past Social History:**
- Lives with family, Single, Does not smoke, Denies alcohol use, Denies drug abuse
 - Recent Law School graduate
- Medications :**
- None
- Allergies:**
- NKDA
- ROS:**
- Denies current or recent F/C/CP/SOB/N/V/headache/dizziness

Physical Examination

- **General Appearance:** Patient awake, alert, well developed, well nourished and well groomed
- **Cardiovascular:** normal capillary refill (<3sec to digits 1-5 b/l LE), pedal pulses present (DP/PT +2/4 b/l LE), DP/PT to Left LE audible on doppler with triphasic/biphasic waveforms noted
- **Neurological:** : Alert, oriented X 3, no motor deficits (Right LE), no sensory deficits (Right LE), gross sensation intact to Left LE, ROM to digits 1-5 on Left foot noted diminished prior to attempted closed reduction.
- **Extremities:** edema (Left foot and ankle, mild), warm temp to b/l LE, gross deformity to left ankle with medial displacement of left foot.
- **Dermatologic:** : Dry, intact, no gross abnormalities, normal color, normal turgor, no abscess, no lymphangitis present, no rash, mild ecchymosis to lateral left foot/ankle just distal to lateral malleolus

Initial Clinical Presentation



Figure 1A&B : Acute Left Ankle Injury with Medial Subluxation/Dislocation of the Foot

Imaging Studies



Figure 2A&B : Pre-reduction Left Tibia/Fibula Plain Films

Post-Operative Imaging

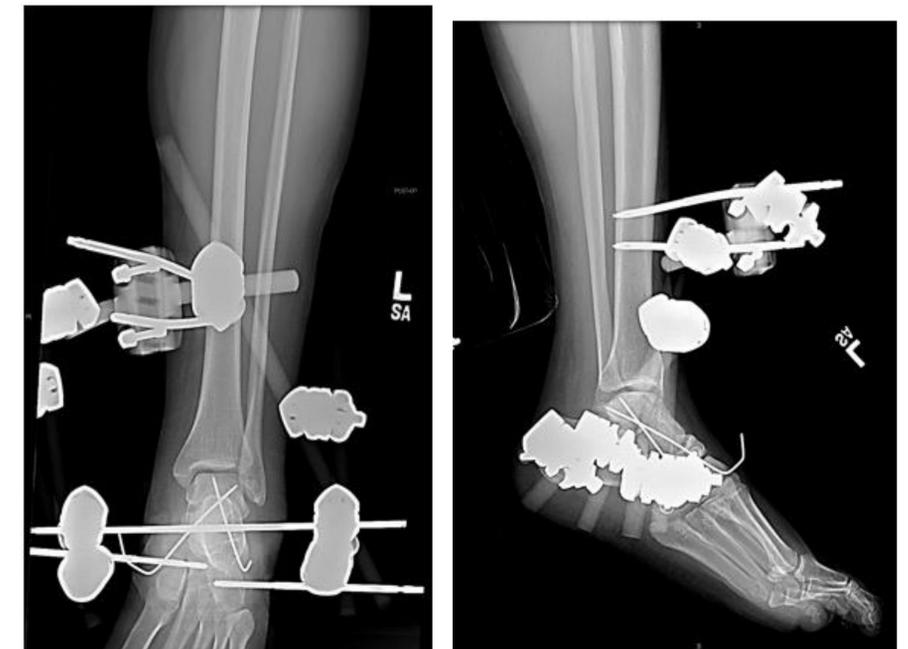


Figure 3A&B : Post-reduction Left Tibia/Fibula Plain Films w/External Fixation

4 Week-Follow-up



Figure 4: Completely Healed 4 Weeks after Initial Presentation

Conclusion

External Fixation is a highly useful and effective modality for treatment of high impact talus fracture in the setting of closed and/or open injury patterns.

References

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