

Calcaneal (Heel) Fractures

How and What?

Fractures of the heel (calcaneus) when marked loading or force is applied directly or indirectly to the heel. (ex. a fall from a height onto the heel, a car crash where the heel is driven into the floorboard)

The most common type of calcaneal fracture results in depression and crushing of the calcaneus. If you think of the calcaneus as hard on the outside and soft on the inside like a funny shaped egg, it often breaks in a similar manner –into many fragments. This can make fixing calcaneal fractures technically challenging.

There are other types of calcaneal fractures including:

- Pulling off (Avulsion) the back part of the calcaneus by the Achilles tendon
- Chip fractures off the front of the calcaneus

These “calcaneal” fractures are much less common and while still serious may be easier to treat.

Symptoms

A depressed calcaneal fracture produces marked pain and swelling. Patients are unable to weight-bear through the heel. They may even develop fracture blisters due to the extensive swelling.

X-Rays and CT Scan

X-rays of the foot from the side will demonstrate the fracture. If surgery is contemplated it may be necessary to obtain a CT scan as this will give a more detailed view of the fracture pattern.

Treatment

Studies suggest that when all calcaneal fractures are reviewed there is no clear difference in results when non-operative treatment is compared to surgically fixing the calcaneal fracture. On closer analysis better results are obtained with surgical treatment in “low-risk” patients. A higher complication rate (with inferior results) is seen in “high risk” patients. This assumes that the surgeon performing the surgery has a great deal of experience fixing calcaneal fractures.

“Low-Risk” patients: young, female, non-smokers, non-worker’s compensation

“High-Risk” patients: older, male. Smokers, diabetics, vascular disease, Workers compensation

Non-Operative Treatment

Ice, Elevation, Pain medication, Early motion, Non-weight-bearing for 8-12 weeks

Operative Treatment

Bone fragments are systematically reduced to their original position and then fixed with screws and plates.

Ice, Elevation, Pain medication, Early motion, Non-weight-bearing for 8-12 weeks after surgery

Potential Complications of Surgery

Serious infection: They may even involve the bone due to the limited skin and soft-tissue covering the outside of the heel

Wound healing problems: The wound may breakdown and potentially serious infection.

Nerve Injury: The sural nerve runs past the outside part of the heel and can be injured.

Long-term hindfoot arthritis: The subtalar joint is often significantly injured and this may lead to some chronic hindfoot stiffness and pain.

The information contained in this handout is copyrighted by FootEducation LLC. It may be reproduced in small quantities for non commercial educational purposes. This information is for general education purposes only. It should not be used without guidance from a licensed healthcare provider.

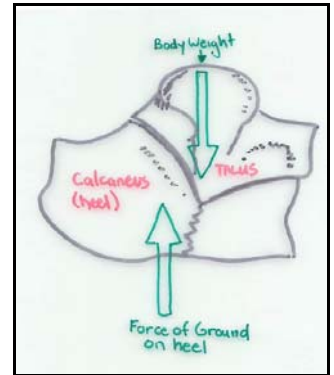


Figure 1: Side View Mechanism of Injury

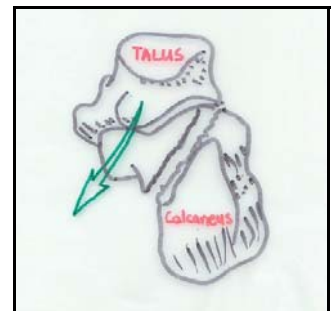


Figure 2: View from Behind Mechanism of Injury



Figure 3: Post surgery