ANTERIOR CALCANEAL PROCESS FRACTURES

TIPS & TRICKS

DR STEVEN KENT - FOOT, ANKLE & TRAUMA SURGEON.
SUITE 10, LEVEL 1, 235 DARBY ST, COOKS HILL, NSW, 2300.
PH: (02) 4911 2303 FAX: (02) 4006 3081

COMMON PITFALLS

This injury differs from other calcaneal injuries in that the fracture **rarely requires surgery**. Surgery is uncommon and only required if residual symptoms persist **>3 months** following the injury

The injury is **difficult to pick up on X-ray** imaging and is **best picked up on CT** if the patient has persistent pain and tenderness to palpation around the **sinus tarsi region**.

The injury is generally associated with a **LOW ANKLE SPRAIN** (ATFL and/or CFL injury) and hence early physiotherapy referral for unrestricted **ankle range of motion exercise, proprioception, and lower limb strengthening** is vital.

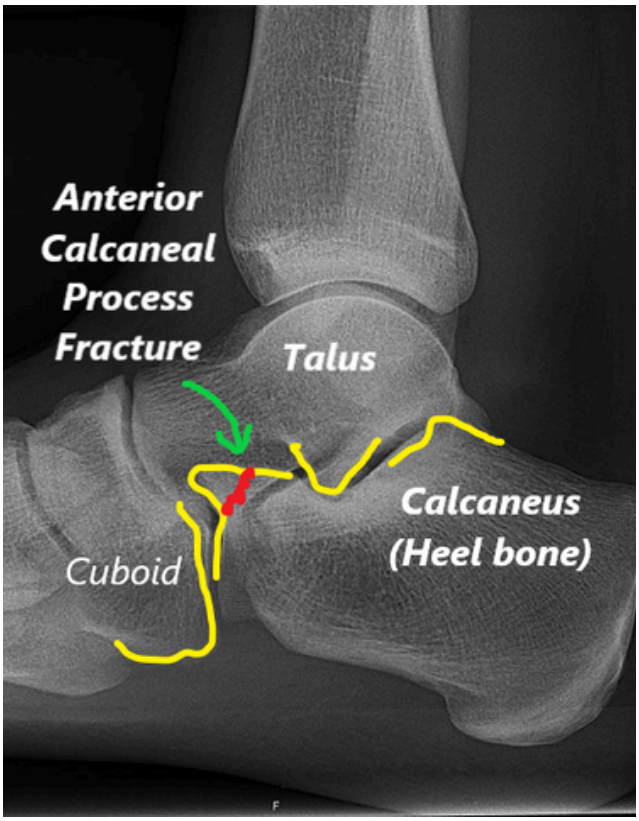
KEY FACTS

Often an associated **Dorsal Navicular Avulsion fracture** is identified on imaging. This should not change management.

If the injury is suspected or identified then the patient should be allowed to **weight-bear as tolerated** in a CAM Boot for a maximum of 4 week.

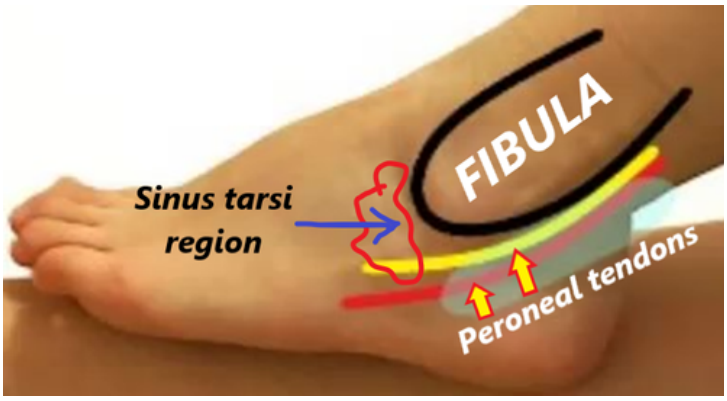
The classic mechanism is an ankle inversion & plantar flexion injury pattern (pictured right)

An alternative name for the injury is a **bifurcate ligament avulsion/iinjury**



EXAMINATION

- The patient will generally have bruising and/or swelling around the **sinus tarsi** or just dorsal to **the calcaneocuboid joint**
- The patient is likely to have further tenderness over the **lateral ankle ligaments** just distal to the fibula if they have suffered an associated **low ankle sprain**.
- The patient may have further tenderness over the dorsal (top) part of the midfoot if they have suffered an associated **dorsal navicular fracture**



DOES THE FRACTURE IMPROVE ON IMAGING OVER TIME?

The majority of these fractures remain **persistent on imaging for many years** and are **reported as a non-union**

Such a result on imaging makes **NO DIFFERENCE** to treatment

As a result, symptomatic improvement with physiotherapy is a better gauge of patient improvment

The only indication for surgery is **ongoing pain or ankle instability** despite physiotherapy after **>3 months of treatment**

WHAT SHOULD I DO

If the patient has persistent tenderness over the **sinus tari region** despite a normal X-ray then a **CT scan is recommended** to identify the injury

Once the fracture has been identified, the patient is allowed to **weight-bear as tolerated in a CAM Boot** for **4 weeks**. The boot can be removed when the patient is at rest for unrestricted ankle range of motion

Repeat imaging is **GENERALLY NOT REQUIRED** as most of these fractures fail to improve radiologically. Persistent symptoms at **3 months post-injury** despite physiotherapy input **should warrant specialist referral**

Physiotherapy for ankle **range of motion, proprioception & strengthening exercises** is recommended and should commence **immediately** following the injury.

REFERENCES

- Dhinsa BS, Latif A, Walker R, Abbasian A, Back D, Singh S. Fractures of the anterior process of the calcaneum; a review and proposed treatment algorithm. Foot and Ankle Surgery. 2019 Jun 1;25(3):258-63.

- Massen FK, Baumbach SF, Herterich V, Böcker W, Waizy H, Polzer H. Fractures to the anterior process of the calcaneus–Clinical results following functional treatment. Injury. 2019 Oct 1;50(10):1781-6..