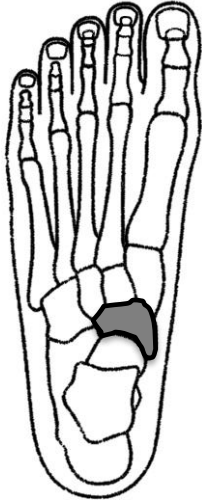




Navicular stress fractures

The navicular bone is an important link between the midfoot and the hindfoot. It allows force to be transmitted for push off. It provides stability to the arch of the foot.



Navicular stress fractures are uncommon.

What is the cause ?

They occur following periods of intense exercise without adequate rest and recovery.

The navicular bone is subjected to repetitive and continuous overload, resulting in microfractures generating a weak spot and with persistent load a stress fracture occurs.

They are commonly seen in athletes particularly young males.

Predisposing factors include

- Previous stress fracture
- Stiffness of the subtalar joint and ankle
- Long second metatarsal
- A high arched foot

Nutrition, training programs and footwear may also play a role.

The blood supply to the navicular is poor which can affect healing and accounts for

why these fractures can take a long time to heal.

Mueller Weiss Syndrome

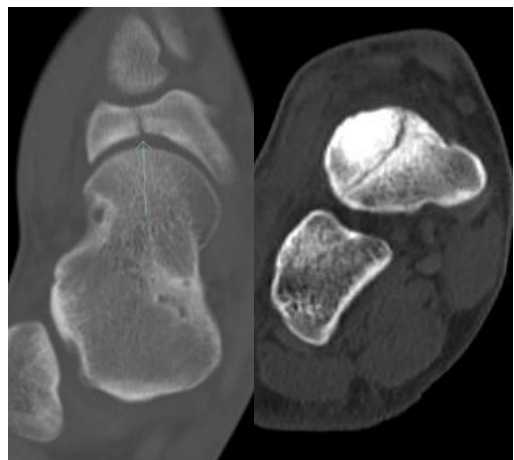
This is a rare syndrome which results from avascular necrosis (loss of blood supply) of the navicular. This occurs in adults and can present similar to a stress fracture.

What are the symptoms?

- Often no specific history of injury
- Poorly localized pain on the top of the midfoot
- Worse with weightbearing

How is it diagnosed?

- Often missed on xray
- CT scan will usually show the fracture
- MRI may be required if the fracture is not seen on CT or there is evidence of joint damage



What is the non-operative treatment?

Some can be treated without surgery

- Fractures recognised early
- Fracture is undisplaced
- Fracture is incomplete

The treatment consists of

- 6 weeks non weightbearing in a boot
- 6 weeks progressive weightbearing in a boot
- Gradual return to sport at 4-6 months



When is surgery considered?

- Chronic fractures
- Complete or displaced fractures
- Non union after non operative treatment
- Athletes

What does the surgery involve?

Surgery involves open reduction and internal fixation with screws with associated bone grafting and addition of a synthetic bone stimulating protein. Bone graft is also taken from the heel bone.

Removing ankle spurs arthroscopically may also be considered.



What does the rehabilitation involve?

- 1 night in hospital.
- 2 weeks elevation of the foot in a cast
- 4 weeks in a boot non weightbearing
- 6 weeks in a boot progressively weightbearing
- Physiotherapy to maintain ankle motion and strength from 6 weeks
- CT scan at 3 months to confirm healing
- By 3 months managing most daily activities in a shoe with an arch support
- By 4-6 months return to sport
- Swelling resolves at 6-9 months

How long will I be off work?

This is dependent upon your occupation

- Seated job 2-3 weeks
- Standing job 8-12weeks
- Heavy lifting job 4-6 months

When can I drive?

- Manual car
 - No driving for 12 weeks
- Automatic car
 - Left foot no driving for 2 weeks
 - Right foot no driving for 12 weeks

What are the risks of the procedure?

General risks of surgery

- Infection
- Wound healing problems
- Nerve injury and scar sensitivity
- Incomplete symptom resolution
- Blood clots to the leg
- Anaesthetic problems

Specific risks for fracture fixation

- Stiffness in the midfoot
- Non union- fracture not healing
 - Up to 20% risk
 - This requires repeat surgery
- Development of arthritis in the talonavicular joint in the future
- Metalware irritation requiring removal

This handout is an overview of navicular stress fractures and is not all inclusive.

If you have any questions regarding this please contact Mr. Curry's rooms on **(03) 99286560**