CONDITION

Navicular fracture of the wrist

A navicular fracture of the wrist is a break in the small scaphoid bone near the base of the thumb.

WHAT IT IS
Break in the scaphoid bone beside the thumb

BODY SYSTEM
Bones and joints

MAIN SYMPTOMS
Thumb-side wrist pain, tenderness, swelling, weak grip

WHAT CAUSES IT
Trauma, usually a fall onto an outstretched hand

HOW IT IS DIAGNOSED
Wrist X-rays, with MRI or CT when needed

MAIN TREATMENT
Immobilisation, sometimes surgery

CAN IT BE CURED?
Yes, most heal with proper treatment

IS IT AN EMERGENCY?
Sometimes, if fingers are numb, pale, or cold

LONG-TERM OUTLOOK
Most heal, but delayed healing can cause arthritis

Overview

A navicular fracture of the wrist is a break in the scaphoid, one of eight small bones that connect the hand to the forearm. The scaphoid lies on the thumb side of the wrist.

"Navicular" is an older name for this wrist bone. Today, healthcare professionals usually call it the scaphoid. It is different from the navicular bone in the foot.

The scaphoid helps control wrist movement and stability. It also has an unusual blood supply. Much of its blood enters near the end closest to the thumb, then travels back through the bone. A fracture can interrupt this flow, especially when the break is near the forearm end of the scaphoid.

This matters because some scaphoid fractures heal slowly or fail to join. Early assessment and

proper protection of the wrist reduce this risk.

The injury can be easy to overlook. Pain and swelling may be mild, and the wrist may not look broken. Some fractures also do not appear on the first X-rays.

Symptoms

The main symptom is pain on the thumb side of the wrist. It often begins after a fall or another injury that forces the wrist backward.

You may notice:

The hollow at the base of the thumb is called the anatomical snuffbox. Tenderness there can suggest a scaphoid injury, but it does not confirm a fracture by itself.

Unlike some wrist fractures, a scaphoid fracture may not cause obvious deformity. Pain can also settle after several days. Improvement does not always mean that the bone is unbroken or fully healed.

- Tenderness in the small hollow at the base of the thumb
- Pain when gripping, pinching, pushing, or moving the thumb
- Mild swelling or bruising around the wrist
- Reduced grip strength or wrist movement

Causes and risk factors

The usual cause is a fall onto an outstretched hand. The force travels through the palm while the wrist is bent backward, placing pressure on the scaphoid.

Scaphoid fractures can also happen during:

The location and movement of the broken pieces affect healing. A displaced fracture means the pieces have moved out of their normal position. Displaced fractures are generally less stable and may have a higher risk of healing problems.

Fractures near the forearm end of the bone, called the proximal pole, may heal more slowly because this area has a more limited blood supply.

Smoking or using nicotine can interfere with bone healing. Continuing to place weight through the injured wrist can also delay recovery.

- Contact sports

- Cycling, skating, or skateboarding falls
- Motor vehicle collisions
- A direct blow to the wrist

Diagnosis

A healthcare professional will ask how the injury happened and examine the wrist. They may press around the scaphoid and check whether wrist, thumb, or gripping movements cause pain. They will also assess feeling, circulation, and movement in the hand.

Wrist X-rays are usually the first imaging test. Several views may be taken to show the scaphoid from different angles.

A fracture may not be visible on the first X-rays. If the examination still suggests a scaphoid injury, the wrist may be placed in a splint or cast while further imaging is arranged.

An MRI scan can find many fractures that are hidden on an initial X-ray. It can also show injuries to ligaments and other soft tissues. A CT scan gives detailed pictures of the bone and can show the fracture's position, displacement, and progress toward healing.

Repeat X-rays may sometimes be used after a short period of immobilisation. The choice of imaging is based on the injury, available services, and whether more detail is needed for treatment planning.

Treatment and management

Treatment aims to keep the bone in a good position while it heals. The best approach is influenced by the fracture's location, stability, displacement, and blood supply.

Until the injury has been assessed, avoid lifting, gripping, or pushing through the painful wrist. A splint can protect it from further movement.

Stable fractures that have not moved out of position can often be treated without surgery. The wrist is immobilised in a cast or rigid brace. The thumb may also be included, depending on the fracture and the type of support used.

Healing is monitored during follow-up visits. Imaging may be needed before the wrist is considered strong enough for heavier activity. A scaphoid fracture can require longer protection than some other wrist injuries.

Surgery may be considered when a fracture is displaced, unstable, near the proximal pole, or

unlikely to heal reliably in a cast. It may also be used for a fracture that has not joined.

During surgery, the pieces are placed into a better position and commonly held with a screw. If healing has failed, a bone graft may be added. A graft uses bone or a bone-like material to support repair.

After either cast treatment or surgery, management may include:

Do not remove a cast or return to sport simply because pain has improved. The bone may still be healing. Follow the activity limits given by your treating service.

- Suitable pain relief
- Cast, splint, or wound care
- Follow-up examinations and imaging
- Gradual wrist and hand exercises
- Hand therapy if stiffness or weakness persists

Complications

Many scaphoid fractures heal well, but complications are possible.

Delayed union means the bone is taking longer than expected to join. Nonunion means it has not joined. These problems are more likely when the fracture is displaced, treatment is delayed, blood flow is poor, or nicotine affects healing.

Avascular necrosis means part of the bone loses its blood supply and begins to deteriorate. It is most concerning in fractures near the proximal pole.

A long-standing nonunion can change how the wrist bones move. Over time, this may lead to wrist arthritis, causing pain, stiffness, and reduced grip strength.

Other possible problems include:

These complications are not inevitable. Keeping follow-up appointments allows healing problems to be found before heavier activity resumes.

- Ongoing wrist stiffness or weakness
- Reduced range of movement
- Irritation from surgical hardware
- Infection after surgery
- Persistent pain despite bone healing

Prevention

Not every scaphoid fracture can be prevented. Falls, collisions, and unexpected sports injuries can happen even when you are careful.

Wrist guards may reduce injury during activities such as skating or skateboarding, although they cannot prevent every fracture. Using appropriate protective equipment and learning safe falling techniques may also help in higher-risk sports.

Reducing fall hazards at home can be useful if you have problems with balance or mobility. This can include improving lighting, securing loose rugs, and keeping walking areas clear.

If you smoke or use nicotine, stopping supports bone healing after a fracture. This does not prevent the original injury, but it may lower the chance of delayed healing.

Living with it and what to expect

Recovery often takes weeks to months rather than days. Fractures closer to the thumb usually have a better blood supply and may heal sooner than fractures near the forearm. Displacement, nicotine use, and delayed treatment can lengthen recovery.

A cast or brace can make washing, dressing, driving, and work more difficult. Keep the cast dry unless told that it is waterproof. Do not place objects inside it to scratch the skin. Contact the treating service if it breaks, becomes loose, causes rubbing, or gets wet and does not dry.

Finger movement is often encouraged to limit swelling and stiffness, but follow the instructions given for your injury. Do not lift or lean on the affected hand while the fracture is still being protected.

Once healing is secure, wrist movement and grip strength usually return gradually. The wrist may initially feel stiff or weak after immobilisation. Hand therapy can help when recovery is slow or daily tasks remain difficult.

Returning to manual work, contact sport, or activities with a risk of falling usually takes longer than returning to light daily tasks. Surgery can stabilise a fracture, but it does not make the bone heal immediately.

Most properly treated scaphoid fractures join and allow a return to usual activities. Some people continue to have stiffness, aching, or reduced movement, particularly after a complicated fracture or nonunion.

When to get medical help

Arrange prompt assessment after a wrist injury if you have pain or tenderness at the base of the thumb, even if swelling is mild or you can still move the wrist. A scaphoid fracture may be present despite a normal-looking wrist.

If initial X-rays were normal but thumb-side pain continues, seek follow-up as advised. Further imaging or repeat examination may be needed.

Contact the treating service promptly if:

Seek urgent or emergency care if the fingers become numb, pale, blue, cold, or difficult to move. Also get emergency help for an open wound over the fracture, exposed bone, severe deformity, or uncontrolled bleeding.

- Pain or swelling is getting worse rather than settling
- A cast becomes wet, cracked, loose, or painfully tight
- Skin around the cast becomes sore or develops an unpleasant smell
- Pain returns when activity increases
- Symptoms continue after the expected follow-up period

Common questions

Is a wrist navicular fracture the same as a scaphoid fracture?

Yes. In the wrist, "navicular fracture" is an older term for a fracture of the scaphoid. The foot also contains a separate navicular bone, so "scaphoid" is the clearer name for the wrist injury.

Can I have a scaphoid fracture if my X-ray is normal?

Yes. Some scaphoid fractures are not visible on the first X-rays. If examination findings still suggest a fracture, the wrist may be immobilised while an MRI, CT scan, or repeat X-ray is arranged.

Can I move my wrist if the scaphoid is broken?

Sometimes. A scaphoid fracture may still allow movement, and swelling can be slight. Being able to move the wrist does not rule out a fracture.

How long does a scaphoid fracture take to heal?

Healing commonly takes several weeks and may take months. The time is influenced by the fracture's location, whether the pieces have moved, the blood supply, and whether a nonunion develops.

Will I need surgery?

Not always. Many stable fractures can heal in a cast or brace. Surgery is more likely when the fracture is displaced, unstable, near the proximal pole, or has failed to join.

Can I drive with a cast or wrist brace?

A cast or brace may limit safe control of a vehicle. Insurance rules and local laws may also apply. Do not drive until you can control the vehicle safely and your treating service has explained your restrictions.

Sources

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- Clementson M, Björkman A, Thomsen NOB. Acute scaphoid fractures: guidelines for diagnosis and treatment . EFORT Open Reviews. 2020;5(2):96-103.