

Acute Scaphoid Fractures

The scaphoid is the most renowned and probably important carpal (wrist) bone. It acts as a strut between the two rows of bones in the wrist. It is the most commonly fractured carpal bone. Scaphoid fractures are notorious for a number of reasons.

DELAY OR MISSED DIAGNOSIS

The injury is often thought to be "just a sprain" and the patient believes it will get better without any need for medical intervention and in fact the pain often subsides. Added to this, the initial x-rays may not show the fracture. In this setting you may be placed in a cast or splint as a precaution and advised to get more imaging. This can be a repeat x-ray 2 weeks later, a CT scan, bone scan or increasingly an MRI.



(Scaphoid)

(Scaphoid Fracture)

SLOW HEALING

The average time it takes for a scaphoid fracture to heal is significantly longer than almost all other bones. The average time is somewhere in the order of 16 weeks. This is because the bone is covered mostly in cartilage and has a relatively poor blood supply compared to other bones.

PART OF THE BONE MAY DIE

The scaphoid anatomy places a portion of it at risk of dying when it is fractured. This is because the blood comes into the bone near its end and has to travel through the centre of the bone to get to the other end. A fracture may disrupt this flow. For this reason in fractures closest to the wrist (proximal), surgery is recommended.



(The marking on the photograph indicates the part of the bone that can die)

NOT COMPLETELY HEALED

Regular x-rays can be difficult to interpret, especially in a cast. A CT scan can be obtained to better visualise the fracture.

NOT HEAL AT ALL (NON UNION)

This can be the result of not being diagnosed and having no treatment to not healing despite optimal treatment. Even surgery does not guarantee healing of a scaphoid fracture. If the bone loss around the original fracture site develops into a gap you may need a bone graft as well as a screw in order to obtain healing.

HEAL IN ABNORMAL POSITION

Although uncommon, this can occur if the fracture is not treated correctly. Even so called "non displaced" fractures can heal in an abnormal position over time. The bone has a tendency to collapse on one side and this is called a "humpback deformity".



(The marking on the photograph indicates the scaphoid is in 2 pieces and has not healed)

WHY DO WE CARE?

If the scaphoid fracture does not heal or heals abnormally it can lead to abnormal movement and positioning of the bones in the wrist. This can subsequently lead to arthritis. The treatment of the arthritis that develops sometimes requires more significant procedures such as partial wrist fusions and because the fractures are more common in young people this is something we try to avoid.

TREATMENT

My preferences for treatment are as follows:

On diagnosis with a plain x-ray you are placed in a cast or snugly fitting brace that is to be worn at all times. A CT scan of all "non-displaced" fractures because the plain x-rays can be misleading. If there is doubt on the diagnosis we prefer an MRI. If the fracture is undisplaced and stable then it will usually heal in a plaster but this can take up to 16 weeks. Depending on life circumstances you may be offered an operation to stabilise the fracture, this takes the form of a single screw placed across the fracture through a small incision.

If the fracture is unstable or displaced, it is likely surgery will be recommended which is called an Open Reduction Internal Fixation (ORIF) with a screw.

If the bone is in multiple pieces you may need a bone graft, which we usually take from one of the other bones in the wrist (the radius) and sometimes from the hip. Even with surgery there is no guarantee that the fracture will heal.

OTHER FACTORS

Smoking significantly increase the risk of the fracture failing to heal, so much so that some surgeons will not operate if you continue to smoke (see Chronic Scaphoid Fractures).

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