Sussex Hand Surgery

SURGERY
ORIF of Scaphoid Fracture & Bone Graft

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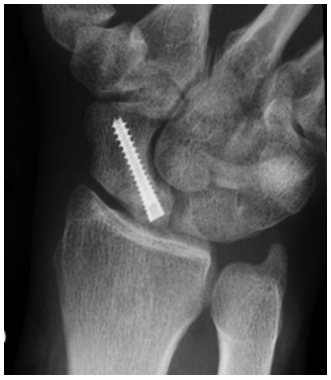
(Open Reduction & Internal Fixation, screw fixation)



A fixed scaphoid fracture with bone graft and screw in place

What does this involve?

This involves opening up poorly healing or a poorly lined up scaphoid fracture, freshening the fracture ends, re-aligning the bone fragments, putting new bone into the gap between the two pieces of the scaphoid (bone graft) and fixing the scaphoid and the graft with a screw, or sometimes some wires.

Bone grafts used in this procedure are of two main types:

- Vascularised grafts - in this case a piece of bone is moved into the fracture gap with its blood vessel attached. The piece of bone should remain alive and so have a better chance of healing to the pieces of scaphoid on either side of it. The bone is usually taken from the distal radius, through the same wound as is used to freshen up the scaphoid.
- Non-vascularised grafts – in this case a piece of bone graft is taken without an attached blood supply. This graft is also most usually taken from the end of the radius bone. The bone is not alive when it is put into the scaphoid gap but acts as a strut and a model for the surrounding living bone to grow into.

This is bigger, more invasive operation than a percutaneous fixation of the scaphoid (described in another information sheet). Healing of the scaphoid is less certain, the immobilisation and rehabilitation will be longer and the wrist will be stiffer after this operation.

When is this surgery needed?

Most (80%) of scaphoid fractures heal up well by themselves given time and prompt treatment in a plaster cast.

In the cases that don't heal up a proportion are still suitable for percutaneous treatment, if the scaphoid remains a good shape or if minimal correction of the alignment is necessary.

The open surgery, described here, is reserved for the small number of cases that are in a very poor position and need considerable re-alignment and a large volume of bone graft.

Which operation is the right one for me?

The decision making regarding scaphoid fractures is complex, considering how many factors are involved.

The surgery is specialised. Your hand surgeon will discuss the options with you in clinic.

Type of Operation	Usually a day case operation but occasionally an overnight stay is advised
Length of Procedure	1.5 – 2.5 hours (depending on complexity of injury)
Anaesthesia	Regional Anaesthetic (whole arm numb) and/or General Anaesthetic (asleep)

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What are the main risks of this operation?

Swelling, Stiffness and Scar pain

This can be reduced by keeping the arm elevated and moving all the free joints as soon as possible. In most people the general swelling reduces dramatically in the first two weeks after the operation.

Local swelling around the surgical site can persist for several months. Local swelling can be helped by massaging the tissues and this may also improve any irritability in the surgical scar.

These are big operations for the wrist and almost all patients will lose some wrist motion in the longer term after this surgery, that is to say the operated wrist will not be as supple as the wrist on the other side.

Occasionally patients are troubled by more swelling and stiffness than average. In this case complex regional pain syndrome (CRPS) is sometimes the cause (see relevant information sheet in 'Conditions we Treat'). Severe CRPS occurs in less than 1% of cases.

Infection

This is unusual in the hand (less than 1% of cases). Local wound infections can often be treated with oral antibiotics. Rare, deep seated infections may require re-admission to hospital, antibiotics into the vein and occasionally more surgery.

Nerve Damage

The nerves most at risk with these operations are the small skin branches supplying sensation around the scar. The lost patch of skin sensation from these injuries might be irritating but will not affect how your hand works.

Metalwork problems

The screw used in this operation is designed to be buried within the bone. Usually it is not removed but sometimes it gives trouble. This is the case most frequently if the fracture is slow to heal and the screw starts to work its way loose or protrude out of the ends of the bone. This might require further surgery. Sometimes wires are used (alone or with a screw) for fixation. These nearly always need to be removed later under a short anaesthetic.

Failure of bone healing

Scaphoid fractures sometimes do not heal, even with this sort of surgery. There are many factors that are known to increase the risk of this occurring. Your surgeon will discuss your particular risks with you in clinic prior to you deciding whether or not to go ahead with surgery.

Residual joint discomfort/Arthritis

Even if the scaphoid does heal up most patients are left with some occasional discomfort in the wrist after this surgery and some stiffness.

If the scaphoid does not heal up, particularly if it is badly lined up, the symptoms can sometimes be unpleasant and get worse over time. In the worst cases the poor alignment of the scaphoid causes wear on the joint and early arthritis (see 'SLAC and SNAC Wrist').

Post Operative Course

Day 1 - 14

- A dressing and padded bandage with a temporary plaster incorporated is applied after the operation.
- Keep the dressings clean and dry
- Keep the arm elevated in a sling or on pillows to reduce swelling
- Start moving any free joints immediately to prevent stiffness
- Take painkillers before the anaesthetic wears off and as necessary thereafter

Day 10 -14

- An appointment will be made around this time for a wound check, dressing change, removal of the sutures (if necessary) and a new plaster cast to be applied. The details will be arranged on the day of surgery
- Exercises for the fingers and the rest of the arm should continue.

4 - 6 Weeks

- A further review is arranged around this stage in clinic with an xray out of the cast to assess whether or not the bones are starting to heal up. A CT scan may also be arranged to look in more detail at scaphoid healing, if the xray is not clear.
- Mobilisation of the wrist and scar massage will start at this stage. A removable splint will be provided if necessary and hand therapy arranged if you are particularly stiff.
- Further follow up and rehabilitation depends on how the fracture is healing.

3 Months

- In the best cases heavy loading and contact sports might be re-introduced at this stage

1 Year

- You may continue to see improvements in your wrist function for up to a year after your surgery, even if the scaphoid heals well.

Plaster Cast Information

Contact your surgical centre if:

- Your fingers become blue, swollen or numb and tingling with a plaster cast in place
- You see any discharge, wetness or detect any unpleasant smells from around your cast
- The cast becomes cracked, soft, loose or uncomfortable.

Outside normal working hours you may need to attend your local Accident and Emergency Department for help with these issues.

Driving

You may drive when you feel confident to control the car, even in an emergency.

It is usually at least 2 months before patients feel able to consider driving again after this surgery, often longer. Your surgeon can advise you on your individual case.

You should discuss it with your insurer if you are considering driving with a splint in place.

Time off Work

This will vary depending on the nature of your job.

Sick notes can be provided on the day of your operation, at your clinic visits and by your own GP.