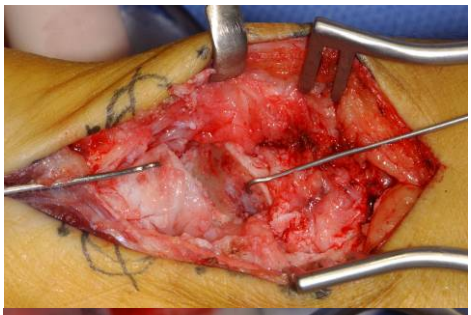
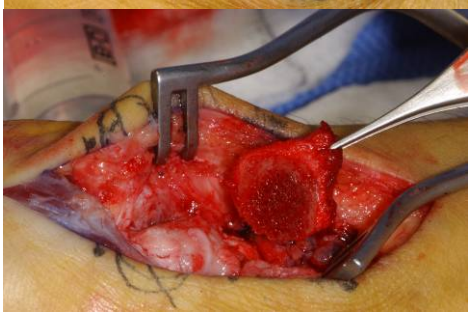
SCAPHOID NON-UNION

Fractures of the scaphoid bone are common and usually are caused by falls onto the hand. Most fractures will heal if properly immobilized in a Plaster for a sufficient period. However, some fractures do not unite (heal) because (i) the fracture was not recognised or treated, (ii) it was very badly fractured (displaced), (iii) there was an associated ligament injury causing joint instability or (iv) part of the bone has poor blood supply (avascular) and cannot heal. Generally, the nearer the bottom of the scaphoid (proximal pole), the poorer the blood supply and the less likely it is to heal (fig 1). It is possible that scans will be performed to assess the position of the fracture and blood supply.



The fractures, even if initially undisplaced, may become displaced or angulated with time, placing stresses on and collapse of neighbouring joints. Although some patients with a scaphoid non-union have few symptoms, most experience some discomfort and stiffness. If untreated, the natural history is the development of wrist osteoarthritis causing increasing symptoms and disability.



The aim of the treatment of the non-united scaphoid therefore is to heal the bone and restore its shape. Treatment therefore involves (i) freshening of bone ends with removal of scar tissue and bone fragments (fig 2), (ii) correction of any displacement and collapse, (iii) insertion of a bone graft from the hip to maintain the correction (fig 3) and (iv) stabilisation of the bone and graft with a screw (fig 4) or wires.

When the cause of non-union is poor blood supply, a vascularised bone graft (connected to its blood supply) is transferred from the radius.

After the operation, your hand will be placed in a bulky dressing, which includes a plaster to protect the operation. Hand elevation is important to prevent swelling and stiffness of the fingers. Movement of the hand and thumb-tip should be continued and you should perform normal light activities after the operation.

Two weeks after the operation, your stitches will be dissolving and your plaster will be changed to a lighter splint. At this stage, you can remove your splint each day to get the hand wet in a bath or shower. The wound and the surrounding skin often become very dry and will be more comfortable if a moisturizer is applied. Your surgeon will advise you and therapist as to what exercises you should perform at this stage.

Six weeks after the operation your wrist will be X-Rayed. If all is well, you can begin to take off your splint during the day for initially light use. However, it is worth wearing it for protection or at night for at least another six weeks after the operation. Physiotherapy will now be started and aimed at recovering wrist movements. Possible complications include: -

Wound Possible problems include swelling, bruising, bleeding, blood collection under the wound (haematoma), infection and splitting of the wound (dehiscence).

Scar You will have a scar on the wrist, which will be firm to touch and tender for some months. This can be helped by firm massage with the moisturizing cream.

Recovery If all goes well, your fracture should unite over a 6-8 week period but it can often be 3 months before you can resume heavy activities. The fracture can, however, take longer to heal and your progress will be judged by examination and X-Ray. You may need to be patient.

Non-union There is about a 20% chance of the fracture failing again to unite. This is more likely if (i) there has been a long delay from the time of fracture, (ii) you have had previous scaphoid surgery, (iii) the fracture is at the proximal pole of the scaphoid or (iv) there is poor blood supply to the bone.

Arthritis Surgery attempts to prevent the development of arthritis. However, damage may have occurred during the time the fracture was ununited. No operation perfectly restores the shape and joint surfaces of the scaphoid and therefore it cannot be guaranteed that arthritis will not occur later even if the operation succeeds in healing the fracture.

Stiffness You are likely to lose some movement at the wrist if you have not already done so.

Regional pain syndrome About 5% (1 in 20) of people are sensitive to hand surgery and their hand may become swollen, painful and stiff after the operation. This problem cannot be predicted, is variable in severity and is principally treated with physiotherapy.

Neuroma A small nerve running in the region can occasionally be damaged during the surgery and either cause numbness in the palm or form a painful spot in the scar (neuroma). The latter complication may require a further operation to correct it.