Wrist Fractures

A wrist fracture is a broken wrist bone. The wrist is made up of eight small bones and the two forearm bones. The two bones of the forearm are the radius and ulna. Although a broken wrist can be in any of these ten bones, most of the time it occurs in either the radius or the scaphoid bones **(see Figure 1)**.

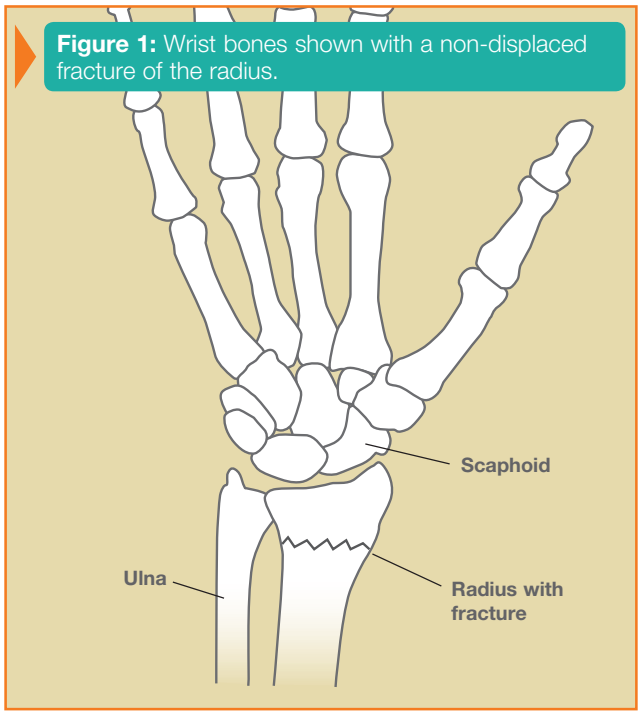

Figure 1: Wrist bones shown with a non-displaced fracture of the radius.

Causes

A fracture occurs from an injury such as falling down onto your hand. Car accidents or falls from a ladder can cause more severe injuries. Osteoporosis is a common condition that makes bone weaker, causing them to break more easily.

Symptoms

The most commonly broken bone of the wrist is the radius **(see Figure 1)**. Many people think that a fracture is different from a break, but they are the same. When the wrist is broken, there is pain and swelling, making it difficult to use your hand and wrist. The wrist may look crooked and deformed when the radius is broken **(see Figure 1)**. Deformity is not usually seen with breaks in the scaphoid bone.

Some fractures are simple, with the bone pieces aligned well. Simple fractures are less likely to move position during the time it takes the broken bone to heal. Other fractures are unstable. In unstable fractures, the bone fragments tend to move or shift. This can make the wrist appear more crooked.

Some fractures are more severe than others. Fractures that break the smooth joint surface or where the bone shatters into many pieces are examples. These conditions make the fracture unstable. An open fracture occurs when a bone fragment breaks through the skin. There is some risk of infection with open fractures.

Diagnosis

A physical examination and x-rays are needed so that your doctor can tell if there is a fracture. They also help to determine the best treatment. Sometimes a CT scan or MRI may be used to get better detail of the fracture fragments and other injuries. In addition to the bone, other wrist structures may be injured. Ligaments (the soft tissue that hold the bones together), tendons, muscles, and nerves may also be injured when the wrist is broken. These injuries may need to be treated in addition to the fracture.

Treatment

Treatment depends on many different factors. The type of fracture, whether it is displaced, and whether it is unstable are all factors used in determining the best treatment. Other important factors include your age and overall health. What hand you write with, work and leisure activities, and the presence of other injuries also play a part.

A splint or cast may be used to treat a fracture that is not displaced or to protect a fracture that has been set. Other fractures may benefit from surgery to put the bone back together and stabilize it. Fractures may be fixed with many devices. Pins, screws, plates, rods, or external fixation can all be used **(see Figure 2)**. External fixation is a method in which a frame is placed outside of the body. The frame is attached to pins placed in the bone above and below the fracture site. Sometimes arthroscopy is used to help position the small fracture pieces located inside the wrist joint. Your hand surgeon will discuss the options that are best for your fracture.

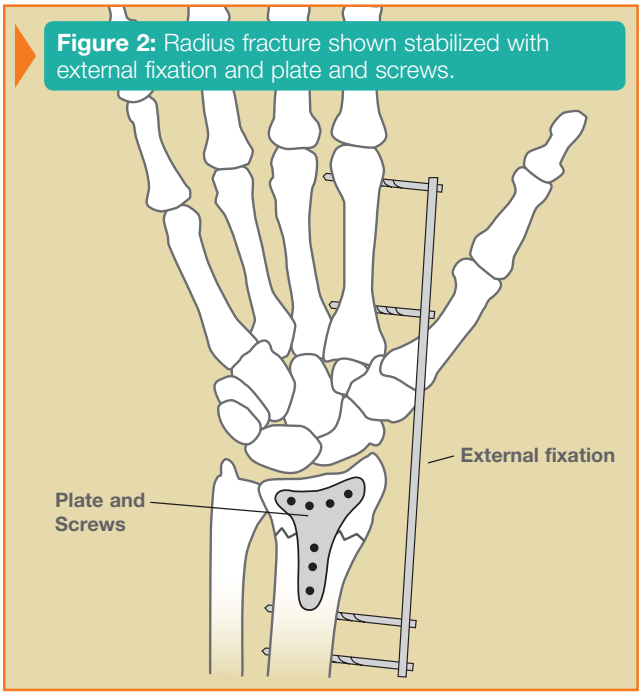

Figure 2: Radius fracture shown stabilized with external fixation and plate and screws.

Sometimes the bone is so severely crushed that there is a gap in the bone once it has been re-aligned. In such cases, a bone graft may be necessary. Bone may be taken from another part of the body to help fill in the defect. Bone from a bone bank or synthetic bone may also be used.

During healing, it is very important to keep your fingers moving if they are not also injured. Without careful attention, your fingers might become stiff. This can hinder your overall recovery. Your hand surgeon will have you start moving your wrist at the right time for your fracture. Hand therapy is often used to help you recover motion, strength, and function.

Prognosis

Recovery time varies, depending on how severe the injury is and many other factors. It is not unusual for recovery to take several months. Even then, some patients may have residual stiffness or aching. Severe wrist fractures can result in arthritis of the joint. On occasion, additional treatment or surgery is needed.