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Hand

Scaphoid (wrist bone)Fracture

Most of the time, a broken bone is obvious. The area around the break may be painful, swollen or deformed. But sometimes a bone can break without your realizing it. That's usually what happens to the scaphoid (skaf'-oyd) bone in your wrist. Many people with a fractured scaphoid think they have a sprained wrist instead of a broken bone because there is no obvious deformity and very little swelling.

The scaphoid bone is located on the thumb side of your wrist, close to the lower arm bones. It is shaped like a cashew nut. The blood supply to the bone enters from the top, but most fractures occur in the middle or lower portion of the bone. This presents a problem because the blood supply cannot reach the injury to encourage rapid, adequate healing.

Who's at risk?

Scaphoid fractures account for about 60 percent of all wrist (carpal) fractures. They usually occur in men between ages 20 and 40 years, and are less common in children or in older adults. The break usually occurs during a fall on the outstretched wrist. It's a common injury in sports and motor vehicle accidents. The angle at which the wrist hits the ground determines the injury. If the wrist is bent at a 90-degree angle or greater, the scaphoid bone will break; if the angle is less than 90 degrees, the lower arm bone (radius) will break.

Signs and symptoms

- Pain and tenderness on the thumb side of the wrist.
- Motion (gripping) may be painful.
- May be some swelling on back and thumb side of wrist.
- Pain may subside, then return as a deep, dull aching.

- Marked tenderness to pressure on the "anatomical snuffbox," a triangular-shaped area on the side of the hand between two tendons that lead to the thumb.

Diagnosis

If you've fallen and think you've sprained your wrist, see your doctor as soon as possible. Your physician will ask you to describe what happened, examine your hand and wrist, and order X-rays of the area. Unless the fracture is displaced (the bone ends no longer touch each other), it may be difficult to see a scaphoid fracture on the first set of X-rays. Even if the initial X-rays do not show a scaphoid fracture, your physician may immobilize your wrist in a cast or splint for a week or so.

A bone scan taken two or three days after the injury can confirm the diagnosis. Or your physician may request a second set of X-rays after a week to ten days. Other diagnostic imaging tests that may be used include magnetic resonance imaging (MRI) and computed tomography (CT) scan.

Treatment

Treatment is determined by the fracture site, the degree of displacement, and any associated injuries. Most scaphoid fractures are treated with immobilization in either a cast that covers the lower arm, the wrist and the thumb or one that covers the full arm, wrist and thumb. Healing time can range from six weeks for fractures in the top portion to six months for fractures in the lower portion. The cast must be checked regularly to make sure that it fits properly and prevents movement. After the cast is removed, a rehabilitation program helps restore range of motion and strength.

Even with immediate cast immobilization, however, not all scaphoid fractures will heal properly. Surgical bone graft placement with internal fixation is usually recommended when the scaphoid fails to heal (non-union). This is successful in approximately 75 percent of cases.

Surgery is also required if the fracture is displaced or if there are other injuries. During the operation, the surgeon will align the bone and stabilize it with screws or pins. Sometimes a bone graft is used to promote healing.

Scaphoid fractures often take a long time to heal. Any delay in getting a diagnosis increases the risk of poor healing and the probability of more problems later. An untreated scaphoid fracture can lead to severe arthritis and eventually require surgery to fuse or replace the joint.

January 2001

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