

Radial Head Fracture



While using your hands to break a fall is an instinctive action, the result of doing so can cause an elbow fracture. Oftentimes, elbow fractures involve the radius bone. Read this article to learn about the symptoms of radial head fractures and how they are properly treated.

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Approximately one-third of elbow fractures (or broken elbows) involve the head of the radius bone. The elbow is a joint where the upper arm bone (humerus) connects to the two bones of the forearm (radius and ulna). The radial head is the upper part of the radius that connects to the humerus, close to where the elbow bends. The elbow not only allows our arm to bend, but it also allows us to rotate our forearm, like when opening a doorknob.

Radial head fractures happen more commonly in women and often occur at the same time as an elbow dislocation. They may be a sign of a more severe injury to the forearm, and therefore require an examination of the entire upper arm to understand the severity of the injury.

Symptoms

The symptoms of a radial head fracture are often felt immediately at the time of the injury:

- » Severe pain in the elbow
- » Bruising and swelling
- » Difficulty bending or extending the arm
- » Difficulty rotating the forearm
- » Crackling at the site of the broken radial head

Causes

Any impact that twists, sprains, or delivers substantial force to the elbow can cause a radial head fracture, including a fall on an outstretched hand (known as a FOOSH) where the force goes up through the wrist, through the entire radius bone, and fractures the radial head at the elbow. Radial head fractures are usually caused by sudden trauma, such as extending an arm to break a fall.

Diagnosis

Your doctor will first perform a history and physical exam to look for tenderness along the bones of the elbow, elbow range of motion, elbow instability, and signs of other injuries.

Radial head fractures are usually diagnosed with an x-ray. Additionally, doctors may order a CT scan to study complicated fractures in greater detail to help plan surgical treatment.

Radial head fractures are sorted into different types, which helps doctors determine how they will be treated.

- » *Type 1* fractures are small cracks in the bone, but the elbow bones remain in their proper places.
- » *Type 2* fractures have larger cracks in the bone, and the bones may be slightly out of alignment with each other.
- » *Type 3* fractures are serious, with the radial head being broken in multiple places and damage to the elbow ligaments and tendons.
- » *Type 4* radial head fractures mean there has also been an elbow dislocation. Their treatment depends on the severity of the fracture.

Nonsurgical treatment options

Nonsurgical treatment is used for type I and some type 2 radial head fractures—when there is a small crack or break in the bone, but otherwise the elbow is still in proper alignment. In these cases, conservative treatment with a sling to immobilize the arm is used.

While immobilization helps the bones heal, it may also lead to stiffness and reduced dexterity. Therefore, it is important to also consult with a physical therapist after your injury, even if it is only mild. After any radial head fracture that does not require surgical treatment, some range of motion will be lost, but a course of physical therapy can help people reclaim maximum flexibility and function.

Large type 2 and all type 3 fractures require surgery. These fracture types can actually prevent the elbow from bending or cause the elbow to be unstable. Without timely care, there is a chance patients may suffer nerve damage, long-term stiffness, permanent deformity, and chronic arthritis.

How surgery is performed

Dr. Romeo will recommend a surgical treatment plan based on your exam and imaging results. Surgery is the best option to prevent long-term loss of function in the elbow with more serious radial head fractures. He will determine if an open reduction and internal fixation (ORIF) procedure, a fragment excision, or a radial head replacement would be your best option for treatment.

During an open reduction and internal fixation (or ORIF) procedure, the surgeon cuts through the skin and muscle to access the broken bone, mend it, and return it to proper alignment. This is performed with general anesthesia and may take several hours. The term “internal fixation” refers to the way your surgeon reconnects the bone, sometimes using plates and screws.

Depending on how seriously the radial head was fractured, damaged bone fragments from the arm may need to be removed (called fragment excision). These bone fragments can impede proper elbow movement and cause long-term problems.

In some cases, the radial head itself may need to be removed (radial head excision). This procedure by



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itself can only be done if the ligaments remain intact. If the ligaments are not intact, especially the ligament between the two bones of the forearm, then removal of the radial head needs to be immediately followed by a radial head replacement. This ensures that ligaments heal at their normal length.

As with many elbow injuries, there may be damage to other joints, bones, ligaments, tendons, or muscles, so Dr. Romeo will also repair any soft tissue injuries during the procedure.

Dr. Romeo will provide specific instructions to manage any post-op pain.

Recovery time

After surgery, you will be given a sling and possibly a brace to help protect your elbow as it heals. The protective devices will be removed between 4 and 6 weeks. However, range-of-motion activities will begin within a few days after the procedure.

After surgery, you will need to diligently follow a program of range-of-motion exercises followed by strengthening exercises. You will also be encouraged to perform home exercises on a daily basis to rebuild strength and flexibility.

Results

Pain typically starts to ease within two to three weeks after surgery. While recovery times vary depending on the severity of the injury, strenuous tasks should generally be avoided for three to six months to allow the fracture to fully heal.

Long-term issues related to radial head fractures include stiffness, pain, and arthritis of the elbow. The best way to avoid these complications is to have the correct diagnosis and recommended treatment to allow early range-of-motion activities and the return of function of the elbow.

Want to learn more? Find relevant videos, animations, and research material related to this procedure at romeoorthopaedics.com. →



For more information about causes and treatment of radial head fractures, please request an appointment with experienced Chicago orthopaedic surgeon Dr. Anthony Romeo. **Please visit our website to find out how to schedule your appointment.**