



Vasu Pai MS, MCh, FRACS

ELBOW DISLOCATION

When the joint surfaces of an elbow are separated, the elbow is dislocated. Elbow dislocations can be complete or partial.

In a complete dislocation, the joint surfaces are completely separated. In a partial dislocation, the joint surfaces are only partly separated. A partial dislocation is also called a subluxation

Dislocation can be associated with fractures around the elbow. Careful radiological assessment is essential.

Once dislocation, reduction can be achieved under sedation or general anaesthesia

Present trend is to mobilise early within a week in case of stable dislocation. In the presence of fracture dislocation, it is essential to stabilize the fracture to achieve stable reduction

What is an elbow dislocation?

Complete dislocation



Partial dislocation



The elbow is stable due to bone surfaces, ligaments (which connect bones) and muscles. When an elbow dislocates, all of these can be injured to different degrees. A simple dislocation does not have any major bone injury.

A complex dislocation can have severe bone and ligament injuries. In the most severe dislocations, there is injury to the blood vessels and nerves that travel across the elbow.

The most common age for an elbow dislocation is 30 years old.

Mechanism of injury

Elbow dislocations typically occur when a person falls onto an outstretched hand. When the hand hits the ground, the force is sent to the elbow. Usually there is a turning motion in this force. This can drive and rotate the elbow out of its socket.

Elbow dislocations can also happen in car accidents. When the crash happens, the passengers often

reach forward to cushion the impact. The force sent through the arm can dislocate the elbow, just as in a fall.

How Do I recognise dislocation?

When the elbow is dislocated, the deformity of the arm is obvious.

Elbow is quite painful

Movements are stiff

It is important to evaluate the circulation of the arm and to check pulses at the wrist after an elbow dislocation. If the artery is injured at the time of dislocation, the hand will be cool to touch and may have a white or purple hue. This is due to the lack of warm blood getting to the hand.

It is also important to check the nerve supply to the hand. If nerves have been injured during the dislocation, some or all of the hand may be numb and not able to move.

Further testing such as an X-ray is necessary to determine if there is a bone injury. X-rays can also help show the direction of the dislocation.

X-rays are the best way to confirm that the elbow is dislocated. Reduction is surgical emergency.

If the bone detail is difficult to evaluate on an X-ray, sometimes a computer tomography (CT) scan will be done.

If it is important to evaluate the ligaments, a magnetic resonance imaging (MRI) can be helpful.

However, the doctor will set the elbow first, without waiting for the CT scan or MRI. These studies are usually taken after the dislocated elbow has been put back in place.

Risk Factors/Prevention

Some people are born with greater laxity or looseness in their ligaments. These people are at greater risk for dislocating their elbows.

Some people are born with an ulna bone that has a shallow groove for the elbow hinge joint. They have a slightly higher risk for dislocation. Nothing can be done to alter these risk factors.

Treatment Options:

Nonsurgical

The goal of immediate treatment of a dislocated elbow is to put the elbow back in joint.

First the alignment of the elbow must be restored. This can usually be done in an emergency room.

The patient will receive sedation and pain medications. Reduction should be done gently and slowly and usually takes two people to perform.

Simple elbow dislocations are treated with early motion after a short period in a splint for two weeks.

Complex dislocation needs immediate reduction and fixation of the fragment in a day or two.

Keeping the elbow immobile for a long time usually results in poor range of motion for the recovered elbow. Physical therapy can be helpful during this period of recovery. Some people will never recover full elbow extension even after a course of therapy.

The long term goal is to restore function to the arm. Fortunately the elbow can work very well even without full motion.

Interval X-rays may be necessary while the elbow recovers. This helps to ensure that the elbow joint remains well aligned.

Surgical

In a complex elbow dislocation, surgery may be necessary to restore bone alignment and repair ligaments.

There is an increased risk for arthritis in the joint if reduction is nonconcentric and unstable.

If there are associated blood vessel or nerve injuries with the elbow dislocation, multiple surgeries may be necessary. These surgeries repair the blood vessels and nerves in addition to reducing the joint. They also fix the bone and ligament injuries.