Elbow Dislocation (1/2)

A dislocation is an injury to a joint. A joint can be defined as two bones that are connected by the shape of the bones and also by soft tissue such as ligaments and capsule. A dislocation of a joint occurs when there is complete lack of contact between the two bones. In order for that amount of change in position of the bones to occur, there is tearing of ligaments and capsule. Partial discloation occurs when the bones have lost some but not all contact with one another and may completely or partially tear the soft tissue.

Elbow dislocations can be separated into simple and complex. Simple dislocations occur when there is no fracture. They are considered "simple" since there is only ligamentous injury. These are more likely to be successfully treated without surgery. Complex dislocations have one or more fractures in addition to the soft tissue injury. The loss of both bone and soft tissue support makes this injury more complicated. The injury is more likely to need surgery. It places the joint at risk for worse stiffness and recurrent instability or pain.

Causes

Dislocations often happen after a trauma. This can result after a fall, car accident, or a sports injury. The elbow is a very stable joint because of strong ligaments and the way the bones are shaped like a door hinge. Thus, it takes a lot of force to cause the elbow to dislocate.

Having loose ligaments (aka being very flexible or "double jointed") may put you at risk for dislocation, even with small injuries. If you had a previous fracture that did not heal properly and the shape of the bone was changed, you are at risk for a new injury. The abnormal bone shape may change the stability of the joint. If you had a previous dislocation, you are at the greatest risk.

Signs and Symptoms

The signs and symptoms of an elbow dislocation may include:

- Severe pain in the elbow
- Noticeable deformity or irregular appearance to the elbow joint
- Inability to move the joint
- Bruising and swelling of the elbow within the first few minutes to hours from internal bleeding
- Tearing of the skin (caused by severe dislocations), which results in visible external bleeding
- Numbness and tingling or weakness in the arm and hand, which is due to stretching of the nerves that pass over the elbow to the hand

Diagnosis

In evaluating an elbow for a possible dislocation, a history of events leading up to the injury will be asked for by your health care provider. Then an examination of the injured elbow will take place. If there is any further concern for a dislocation, x-rays will be taken.

X-rays are helpful because they will show in which direction the bones are dislocated (Figures 1 and 2). X-rays may also reveal a fracture (broken bone). In some cases, a CT scan or MRI can assist in determining other important injuries associated with the elbow dislocation that is not seen on x-rays (ligaments, nerve, cartilage). These advanced tests often follow any initial treatment. Sometimes, a surgeon may examine the joint under a video x-ray machine, called fluoroscopy, to see if the proper position of the bones stays in place during motion or when gentle stresses are applied to the joint.

Treatment

It is unlikely for elbow dislocations to "pop" back into place on their own. The joint should be put back into place as quickly as possible by a doctor. It is helpful to try to realign the bones before swelling and nerve stretch increases. If you sustain this injury, promptly seek medical care. An experience health care provider will need to realign the dislocated elbow. This is most often a physician. It may also be an athletic trainer if the injury occurs during a sporting event.

With larger joint and even smaller joint injuries, it is often helpful to have an x-ray before and after the dislocation. This helps understand how to maneuver the bone back into place. Some dislocations have one or more fractures which are also important to recognize. Immediate treatment involves "setting" or reducing the bones. Getting the bones back into position (reduction) as soon as safely possible helps decrease the risk of long-term nerve problems. It also helps decrease pain and improves arm swelling. Your health care team may inject numbing medicine into the joint. This will lessen your pain. You may also need intravenous medicine. Sedation and muscle relaxers may be necessary to correct your elbow dislocation. A gentle pull and push and the elbow could be back in place. On the other hand, some dislocations may not go back into the socket through manipulation. They could require surgery to open the joint. Then, soft tissue or bone that is blocking the realignment is removed. The torn or broken structures are then repaired to regain joint stability.

Most elbow dislocations do not require any surgery. After the joint reduction, early motion is critical. Elbows tend to stiffen up quickly. Although early motion is very impor-

Elbow Dislocation (2/2)

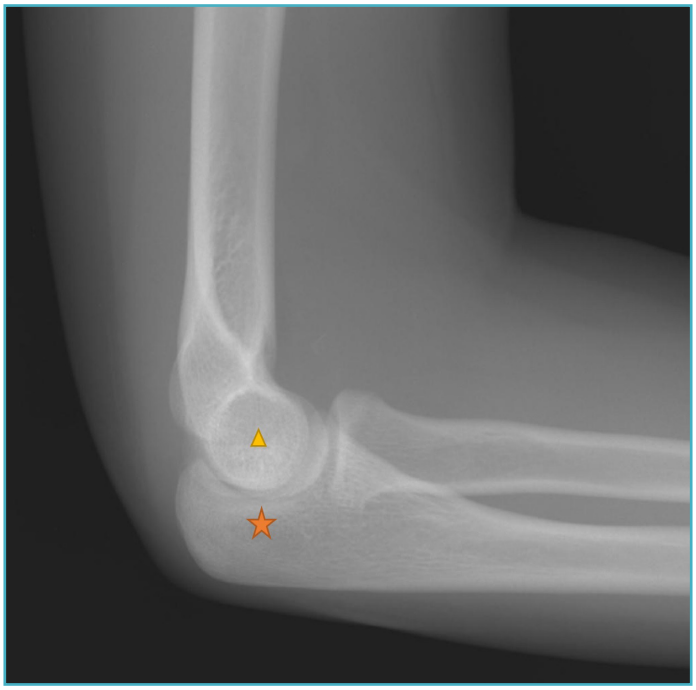

Figure 1: An x-ray showing a normal elbow joint from the side. The "spool" or trochlea of the humerus (yellow triangle) is sitting in the normal groove of the olecranon cup (orange star) of the ulna. This resembles a door hinge.

Figure 2: An x-ray of the elbow taken from the side showing a dislocation. The olecranon cup is empty (orange star).

tant, it is also necessary to support the joint with a brace, splint and/or sling between exercise sessions in order to avoid repeated dislocation or minor strains of the ligaments.

Surgery may be indicated if the joint is not stable after reduction. It may also be needed if there are associated displaced or unstable fractures of the bones or cartilage of the elbow. Your surgeon will discuss this with you soon after the reduction.

Recovery

Therapy to regain motion and strength will maximize recovery, but the elbow may never be equal to the other side. The elbow will often stiffen up to some degree after this injury, even if your recovery is smooth. Sometimes, late nerve problems can develop from such injury to the nerve and the development of scarring. Since the "funny bone" or ulnar nerve is closest to the elbow joint, it is most likely to develop a problem after elbow dislocation. Ulnar nerve symptoms include elbow pain and numbness and tingling in the ring and small fingers. These symptoms may increase with elbow flexion and improve with the elbow straightening.

The best treatment results occur when the injury is diagnosed and treated early. It is important to find a health care provider experienced in treating these injuries.