



Cubital Tunnel Syndrome



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What is cubital tunnel syndrome?

Cubital tunnel syndrome is caused by pinching of the ulnar nerve at the elbow and is manifested by numbness, tingling, and pain in the small and ring fingers. There can be weakness of the grip and loss of fine motor control of the fingers. The cubital tunnel is a groove in the bones at the elbow with a ligament comprising the roof of the tunnel. The ulnar nerve passes through the cubital tunnel on its way around the elbow. The ulnar nerve is responsible for sensation to the small and ring fingers. It is about the size of a pencil and also controls the muscles for grip strength in the small and ring fingers and it controls the small muscles in the hand that coordinate the fine movements of the hand except for some of the muscles of the thumb. Many patients note a tingling in their small and ring fingers when this area of the elbow is bumped—they may say they have “hit their funny bone.”

The complaints related to cubital tunnel syndrome can be from sensory or motor causes or both. The problem is often made worse by holding the elbow in a bent position, such as holding a telephone. You may be aware that the hand is weaker causing difficulty in opening jars; you may have trouble with dropping things; or you may note that the hand cannot do things as easily as before, like playing a musical instrument or typing.

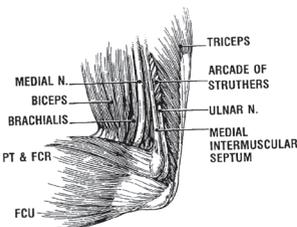


Diagram 1

The ulnar nerve is stretched during elbow flexion.

What causes it?

Many times we do not know what has occurred to cause cubital tunnel syndrome. Sometimes it can be related to an injury to the elbow, such as a fracture or dislocation, forceful twisting of the elbow, or a fall on the elbow. Some occupations that require significant amounts of elbow flexion may be contributory. Cubital tunnel syndrome is more common in patients with arthritis, diabetes, thyroid problems, and alcoholism than in the general population.

What are the signs and symptoms?

Cubital tunnel syndrome usually causes numbness and tingling in the small and ring fingers and on the back of the hand next to the small finger. The numbness or tingling occurs in the fingers innervated by the ulnar nerve—the small and ring fingers. The numbness is often worse at night because the elbow is frequently held in flexion (in a bent position) while sleeping. Some patients report dropping things and weakness in the hand.

How is it diagnosed?

An accurate history of the onset and duration of symptoms as well as prior injuries and how the hand was used is very important. Several diagnostic tests are performed during the examination that usually recreate the symptoms of numbness and tingling. Sometimes X-rays will be required if there is a possibility of fracture or arthritis. Specific laboratory tests may be indicated if an unproven medical condition is suspected. Many patients are referred to a neurologist for nerve tests (nerve conduction and electromyograms-EMG) to assure that there are no other sites of compression of the ulnar nerve.

How is it treated?

Sometimes the symptoms can be relieved without surgery. Nonoperative treatment includes avoiding repetitive use of the elbow and keeping the elbow from bending completely in a flexed position. It is difficult to function or to sleep with the elbow straight. Placing a rolled small towel in the elbow and wrapping an ace bandage around the elbow to hold it in place prevents complete flexion and helps many patients with problems that interrupt their sleep. An injection of cortisone into the cubital tunnel can also relieve the symptoms by reducing the swelling around the nerve.

In cases of severe compression of the nerve or symptoms that persist, surgery may be necessary to open the cubital tunnel. All surgical procedures are designed to open the roof of the cubital tunnel and place the nerve in a more favorable position. This is accomplished by incising the ligament that comprises the roof of the cubital tunnel and transposing the nerve to a more anterior position. After surgery, the elbow will be sore around the incision for several weeks. The numbness and tingling often disappears quickly, but several months are necessary for strength of the hand and wrist to return to normal. Some symptoms may continue after surgery. Returning to repetitive or strenuous activity may cause symptoms to return.

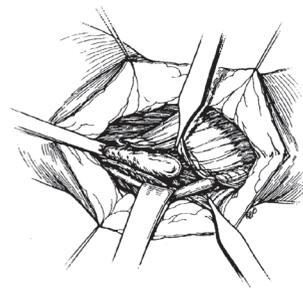


Diagram 2

Surgery consists of opening the roof of the cubital tunnel and moving the nerve more anterior