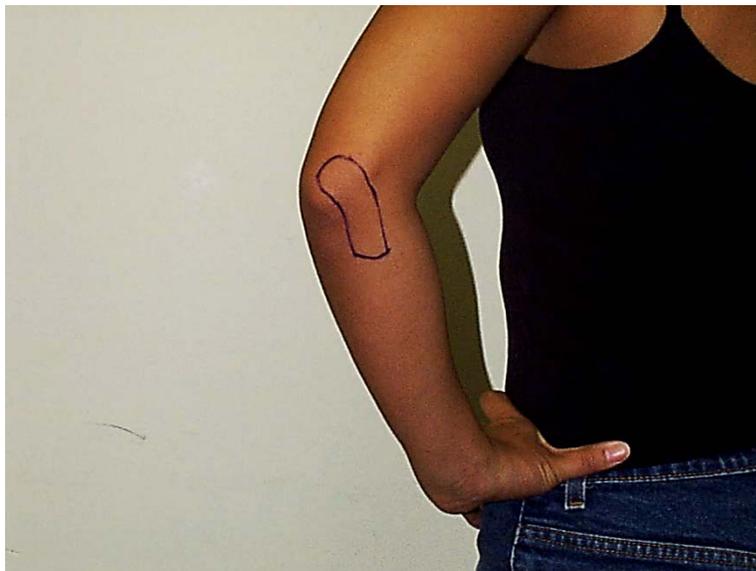


## ULNAR CHANNEL SYNDROME

The ulnar channel is otherwise known as the cubital tunnel. It begins at the condylar groove between the medial humeral epicondyle and the olecranon process. The triangular arcuate ligament forms the roof, and the ulnar lateral ligament forms the floor of the ulnar channel. The two heads of the flexor carpi ulnaris muscle form the sides. The main significance of the ulnar channel is that the ulnar nerve passes through it on its way to innervate its end organs in the forearm and hand. Acute and sub-acute external or internal compression may result in the *Ulnar Channel Syndrome*.

External compression of the ulnar nerve may result from external pressure or blows directed into the ulnar channel. Acute flexion of the elbow during sleep and “hitting the funny bone” are prime example of external vectors of injury. Internal compression may come from fascial bands, interstitial swelling, adhesion formations, or lesions within the ulnar channel, resulting from arthritic spurs, rheumatoid synovitis, muscle anomalies, ganglia, lipomata, or other soft tissue tumors. The most common source of the *Ulnar Channel Syndrome* seems either a direct blow or simply prolonged pressure on the ulnar channel (leaning on the forearm with the palm down).



**The high skin resistance pattern commonly associated with inflammation of the Ulnar Channel Syndrome**

Patients suffering from the *Ulnar Channel Syndrome* initially complain of sharp or aching pain on the medial side of the proximal forearm. The pain may radiate either proximally or distally, and may be accompanied by paresthesia, dysesthesia, or anesthesia in the fourth and fifth fingers. In extreme cases, the patient may complain of weakness and loss of dexterity in the involved hand. There may be some atrophy of the intrinsic muscles with “clawing” of the fourth and fifth fingers.

In most simple cases of the *Ulnar Channel Syndrome*, DSR survey of the ulnar channel area will demonstrate a characteristic pattern of high skin resistance, as illustrated below. The inflamed zone may cover the entire extent of the channel or simply a part of it. In the latter case, the pattern is usually at and just distal to the medial epicondyle of the humerus. It should be noted that inflammation of the olecranon fossa might produce interstitial swelling to the extent that the ulnar channel may be affected and the *Ulnar Channel Syndrome* may be produced.

### **Treatment**

Treatment of the *Ulnar Channel Syndrome* is centered on decreasing the inflammation and swelling within the ulnar channel, as well as eliminating any adhesions that might be present.

### **Application:**

- Place a negative electrode over the ulnar channel and a positive electrode over the medial head of the triceps muscle. Preset an electrical stimulation unit to deliver a visible contraction, at 7 Hz. Stimulate for 10 minutes.
- Then set the unit to deliver a medium frequency current, with a duty cycle of 10-seconds on and 10-seconds off, sufficient to produce a visible near tetanic contraction of the involved muscles. Stimulate for 10 minutes.
- Manipulate the soft tissues in and around the ulnar channel to eliminate any adhesions that may be present (refer to Soft Tissue Manipulation in Tight Areas).
- Preset the ultrasound unit to deliver a 1 MHz pulsed waveform, at 1.5 W/cm<sup>2</sup>. Ultrasound the ulnar channel, utilizing an effective non-steroidal anti-inflammatory as a coupling agent, for six minutes.

***The following treatment forms have also been effective.***

### **Variation:**

- Preset the ultrasound unit to deliver a 1 MHz pulsed waveform, at 1.8 W/cm<sup>2</sup>. Ultrasound the inflamed zone, utilizing an effective non-steroidal anti-inflammatory as a coupling agent, for six minutes. This procedure is designed to soften the adhesions that may be present.
- Manipulate the tissues in and around the inflamed zone to eliminate any adhesions that may be present.
- Twenty minutes after the first ultrasound, preset the ultrasound unit to deliver a 1 MHz pulsed waveform, at 1.5 W/cm<sup>2</sup>. Ultrasound the inflamed zone, utilizing an effective non-steroidal anti-inflammatory as a coupling agent, for six minutes. This is performed to “cool off” the manipulated zone by effectively halting the production of prostaglandins by the stressed tissues.
- Apply mechanical vibration, delivered at 60 to 120 Hz, into the ulnar, for two minutes. Apply the vibration at a relatively high but tolerably comfortable level for the patient. This is performed to increase capillary circulation in the involved tissues.

### **Variation:**

- Preset the ultrasound unit to deliver a 1 MHz pulsed waveform, at 1.8 W/cm<sup>2</sup>. Ultrasound the inflamed zone, utilizing an effective non-steroidal anti-inflammatory as a coupling agent, for six minutes. This procedure is designed to soften the adhesions that may be present.

- Manipulate the tissues in and around the inflamed zone to eliminate any adhesions that may be present.
- Apply cold laser (with or without simultaneous electrical stimulation provided by the laser applicator) to the inflamed zone for approximately 6 minutes. This is performed to “cool off” the manipulated zone by effectively halting the production of prostaglandins (or facilitating enzyme destruction of **all** inflammatories being produced) by the stressed tissues.
- Apply mechanical vibration, delivered at 60 to 120 Hz, into the ulnar channel, for two minutes. Apply the vibration at a relatively high but tolerably comfortable level for the patient. This is performed to increase capillary circulation in the involved tissues.

If there are no unsuspected, more proximal, soft tissue problems, successful treatment may take no more than one or two sessions. If arthritic spurring is present (a very rare occurrence), success may take a lot longer, and will depend on how long it takes to dissolve the calcification (bone spurring).

#### **Post Treatment Suggestions:**

The patient should be instructed to refrain from leaning or resting on the involved elbow for two weeks after the cessation of the symptomology.

#### **Trigger Points**

The following trigger point formations may, singly or in combination, imitate or contribute to the pain accompanying an *Ulnar Channel Syndrome*: Latissimus dorsi (upper portion), Serratus posterior superior, Serratus anterior, Subscapularis, Pectoralis major (sternal portion), Pectoralis minor, Sternalis, Medial triceps (deep fibers), Flexor digitorum sublimis (humeral head), and Abductor digiti quinti.