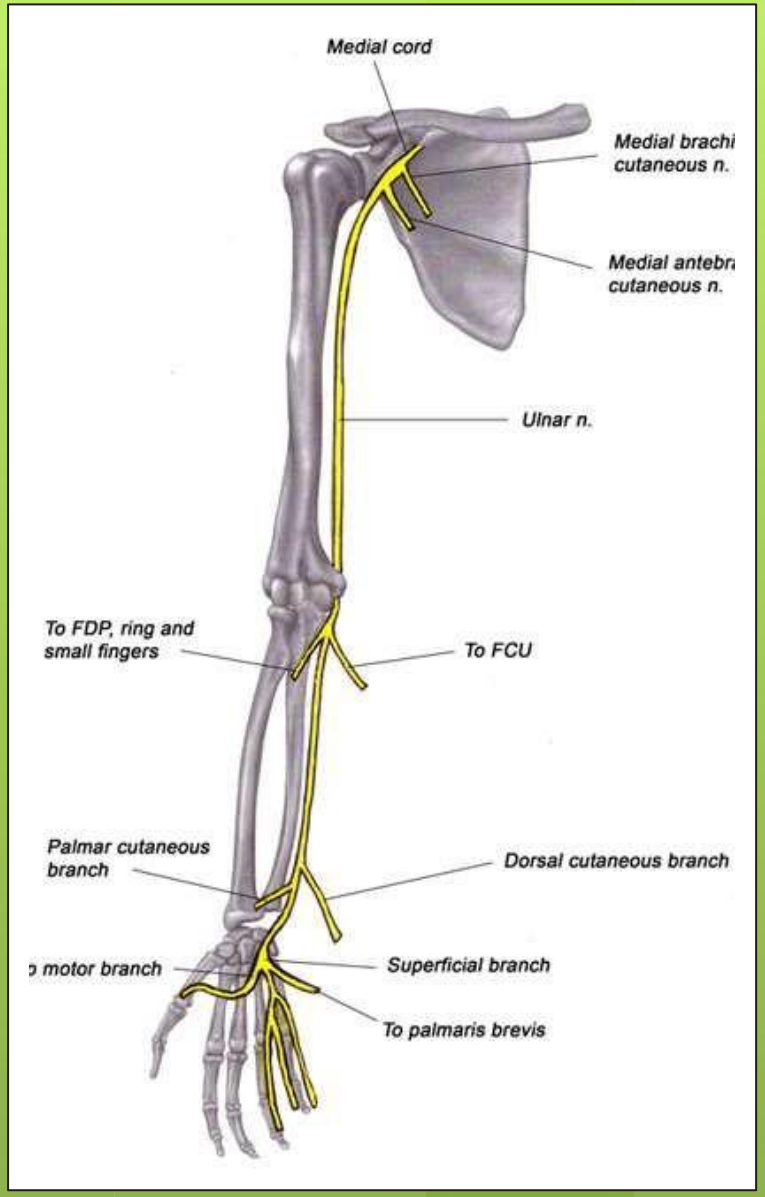
Cubital Tunnel Syndrome

What is Cubital Tunnel Syndrome

- This is where the ulnar nerve is compressed the cubital tunnel of the elbow.
- It can cause numbness, tingling,weakness and /or pain in the arm and in the 4^{th} and 5^{th} fingers

What is Cubital Tunnel Syndrome

- There are many areas in the Cubital Tunnel in which the Ulnar Nerve can be compressed:


Medial cord
Medial brachi
cutaneous n.
Medial antebr
cutaneous n.
Ulnar n.
To FDP, ring and
small fingers
To FCU
Palmar cutaneous
branch
Dorsal cutaneous branch
motor branch
Superficial branch
To palmaris brevis

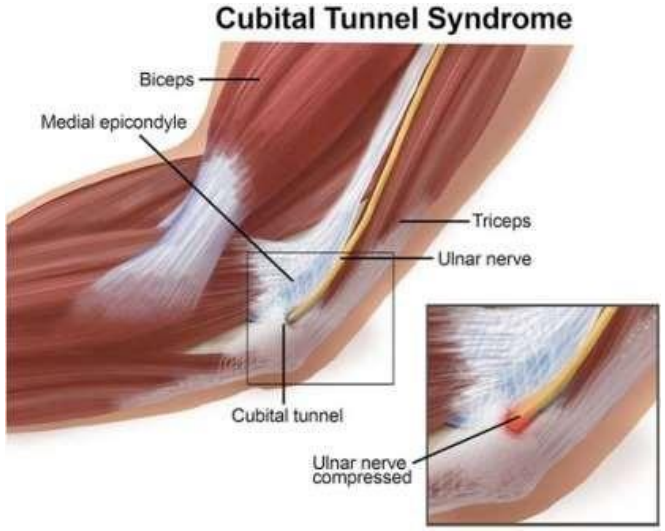
Anatomy

Anatomy

- The ulnar nerve controls most of the intrinsic muscles in the hand that help with fine movements
- It also give innervations to some of the extrinsic muscles in the forearm that help you make a strong grip.

Anatomy

- At the elbow the ulnar nerve travels through a tunnel of tissue called the cubital tunnel that runs under the medial epicondyle of the elbow



What causes Cubital Tunnel Syndrome?

- Repetitive use of the arm or elbow (including leaning on the elbow)
- Leaning on your elbow for long periods of time can put pressure on the nerve.
- A direct blow to the inside of the elbow

Clinical Features

- Tenderness in the elbow joint at the medial epicondyle.
- Numbness, tingling or decreased sensation in the palm or last two fingers. This may be worse at night while sleeping.
- Weakening of the grip and difficulty with finger coordination.

Clinical Features (cont'd)

- If the nerve is very compressed or has been compressed for a long time, muscle wasting in the hand can occur
- Pain in the elbow, palm and/or last two fingers. Activities that use the arm may increase the pain.
- Sensitivity to cold

Risk Factors

There are some risk factors in developing cubital tunnel syndrome

- Swelling of the elbow joint
- Bone spurs or arthritis of the elbow
- Fracture or dislocations of the elbow
- Repetitive or prolonged activities that require the elbow to be bent
- Sex: Women are more likely to develop Cubital Tunnel Syndrome than men.

Diagnosis

- The diagnosis is established by the history and physical examination, along with the findings of nerve conduction tests and imaging
- Physical examination includes: Observation and inspection of the elbow and forearm

Diagnosis cont’d

- Tapping the nerve at the elbow (the Tinel's sign test)
- A sensory examination that includes both light touch and a test of the ability to distinguish between sharp or dull stimulus and temperature
- Checking the strength of specific muscles of your hand

Diagnosis cont'd

- Checking your pinching and gripping ability
- Nerve Conduction Test
- Imaging – X-rays be taken of the elbow to look to see if bone spurs or arthritis can cause compression

Diagnosis con’td

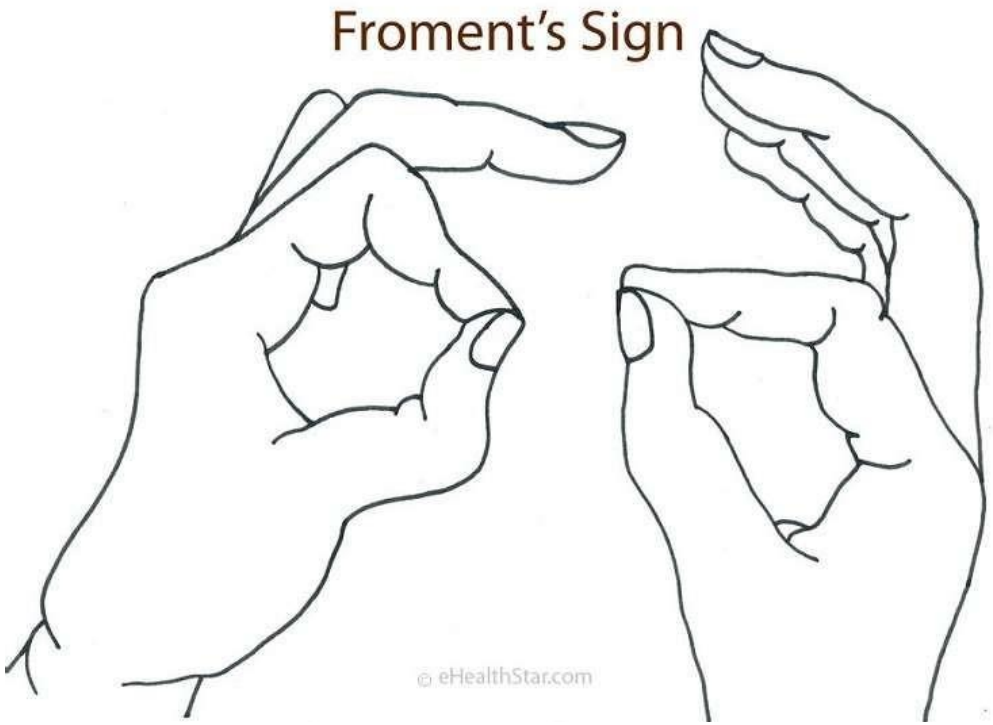
- There are special tests that can are done to confirm that someone has Cubital Tunnel Syndrome

1) Tinel Sign at the Elbow

Diagnosis cont'd

2. Elbow Flexion Test

Diagnosis cont'd



Differential Diagnosis

- Cervical Radiculopathy C8-T1 – Motor and sensory deficits in a dermatomal pattern including 4th-5th digits, associated weakness of intrinsic muscles of the hand, and associated painful and often limited cervical range of motion.
- Thoracic Outlet Syndrome – Compression of the structures of the brachial plexus potentially leading to pain, paresthesias, and weakness in arm, shoulder, and neck.

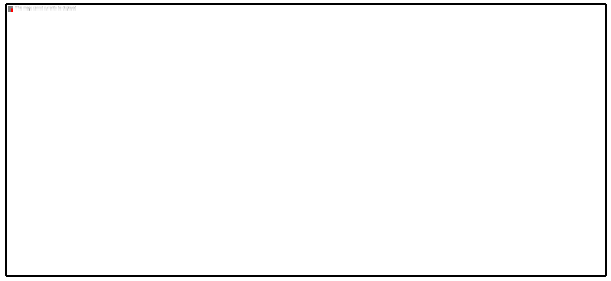
Treatment

- Non Surgical means includes:

- NSAIDS – If the symptoms have just started, anti- inflammatory medicine such as Ibuprofen is recommended which can be use to reduce any swelling around the nerve
- Ice: This can help reduce the swelling

Treatment cont'd

- The pt can use a towel to wrap around the arm

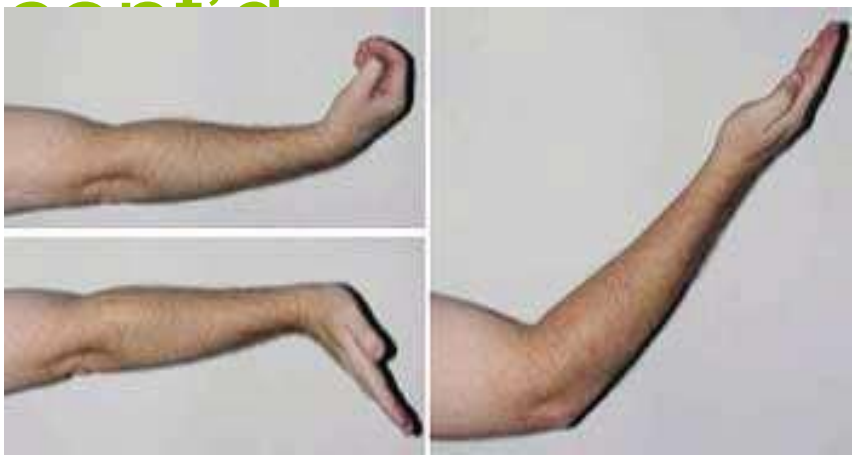


Treatment Cont'd

- Brace or Splinting – these can be worn in the nights to help to keep the elbow straight

- Nerve Gliding Exercises – Ulnar Nerve glides can help the nerve slide through the cubital tunnel at the elbow in which there can be improvement of symptoms.

Treatment cont'd



Treatment cont'd

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- Surgical Treatment may be recommended if:

1. Non- Surgical means have not improve the condition
2. The ulnar nerve is very compressed
3. The nerve compression have caused muscle weakness and damage

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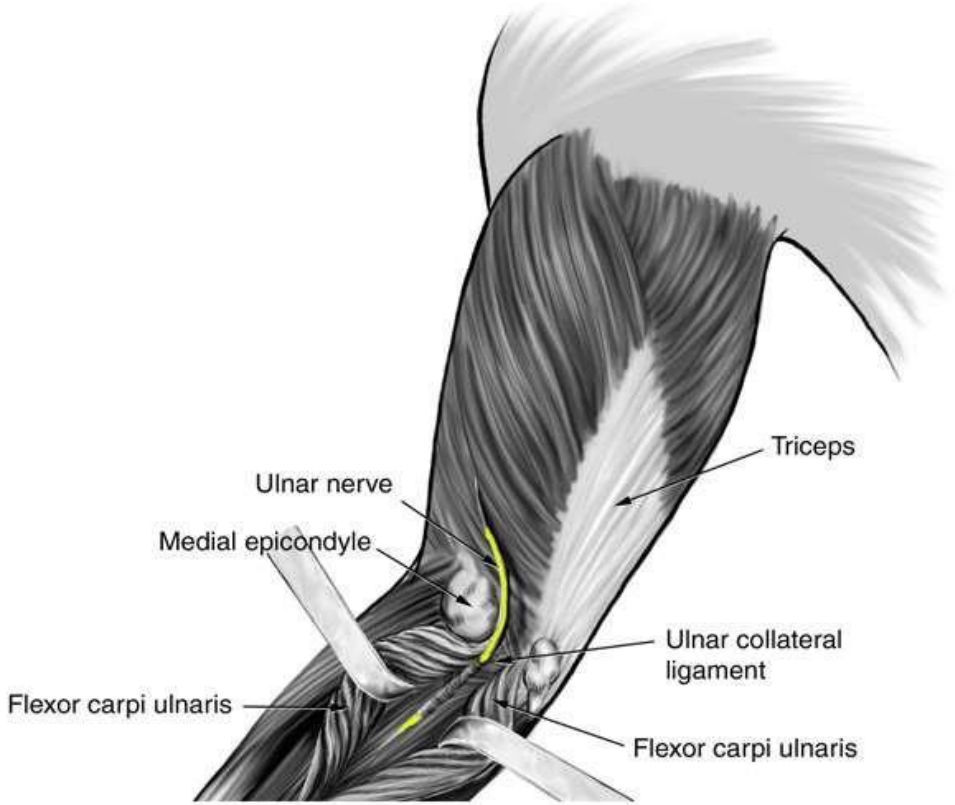
- Surgical means include:

- Cubital Tunnel Release -In this operation, the ligament "roof" of the cubital tunnel is cut and divided.

Treatment


Triceps
Ulnar nerve
Medial epicondyle
Ulnar collateral ligament
Flexor carpi ulnaris
Flexor carpi ulnaris

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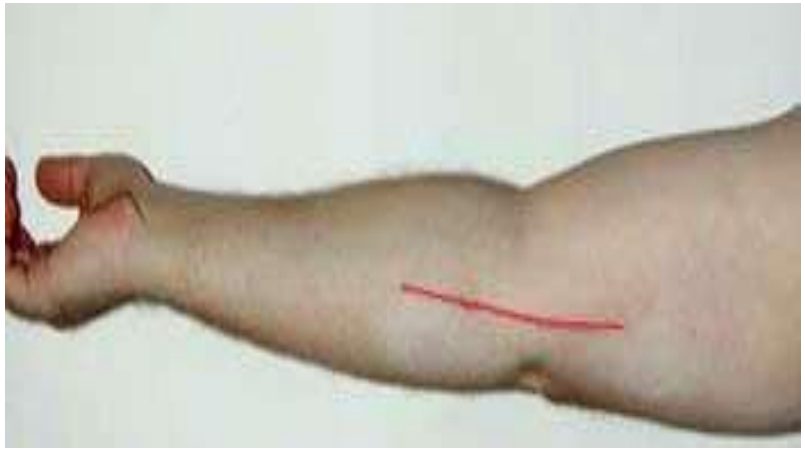
- Ulnar Nerve Anterior Transposition

The ulnar nerve is moved from its place behind the medial epicondyle to a new place in front of it.



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- Medial Epicondylectomy - Another option to release the nerve is to remove part of the medial epicondyle.
- Like ulnar nerve transposition, this technique also prevents the nerve from getting caught on the boney ridge and stretching when your elbow is bent.

Summary

- Cubital Tunnel Syndrome is where the Ulnar nerve enters the cubital tunnel and is compressed in that area.
- There are five areas in the tunnel that the ulnar nerve can be compressed
- Activities such as prolonged bending of the elbow and a direct blow to the elbow can be causes of CTS

Summary

- Special Test such as Tinel sign at the elbow, Elbow Flexion test and Froment's sign are use to diagnose the condition.
- Physical Therapy management is geared towards reducing the tingling sensation, pain and/ or numbness, improving strength, and reducing swelling.