

CNS Block

Anatomy Team-430



5th Lecture

MEDIAN & ULNAR NERVES

This Lecture is done by:

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MEDIAN & ULNAR NERVES

MEDIAN NERVE

<u>Origin:</u>	<u>course</u>
<ul style="list-style-type: none">• By 2 roots from the medial and lateral cords of brachial plexus.• The medial root crosses the 3rd part of axillary artery to join the lateral root.	<ul style="list-style-type: none">• It runs downward on the lateral side of the brachial artery.• At the middle of the arm, it crosses the brachial artery from lateral to medial and continues downward on its medial side.• At the elbow, it lies medial to the tendon of biceps & it is crossed by the bicipital aponeurosis.• It has no branches in the arm.• In the cubital fossa it lies deep to the bicipital aponeurosis.• It leaves the fossa between the 2 heads of the pronator teres.• Then it descends between the flexor digitorum superficialis & the flexor digitorum profundus.• It passes to the palm deep or through the carpal tunnel lateral to the tendon of flexor digitorum superficialis, and deep to the tendon of Palmaris longus.

BRANCHES OF THE MEDIAN NERVE IN THE FOREARM

Muscular:To

- Pronator teres
- Flexor carpi radialis
- Palmaris longus
- Flexor digitorum superficialis

Palmar cutaneous branch:

-It arises at the distal part of forearm.. It descends superficial to flexor retinaculum to supply skin of the **lateral 2/3** of the palm.

-Articular: To elbow joint

Anterior interosseous nerve:

-Descends **between** flexor pollicis longus and flexor digitorum profundus, anterior to the interosseous membrane.

-It supplies : FPL+PQ+ lateral half of FDP.

-It gives an **articular branches** to wrist & distal radioulnar joint.



Median nerve in the **palm**

- enters the palm through the carpal tunnel, **deep** to the flexor retinaculum.
- Then it divides into **lateral & medial** branches.
- Lies a **fingerbreadth distal** to the tubercle of scaphoid.



Muscular: To (5 Muscles).

- Abductor pollicis brevis.
- Flexor pollicis brevis.
- Opponens pollicis.
- Lateral 2 lumbrical.



Cutaneous:

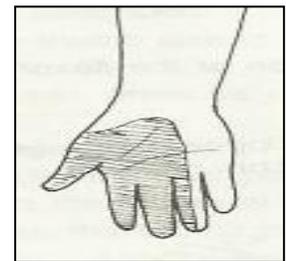
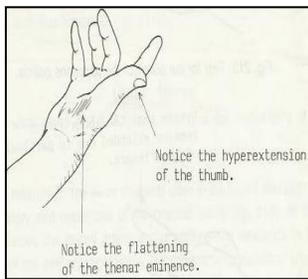
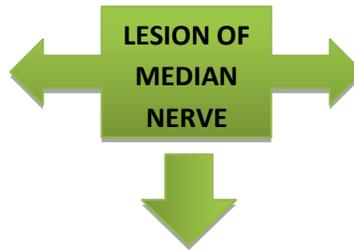
Cutaneous branches to the palmar aspect of the **lateral 3 ½ fingers**.

I- ABOVE THE ELBOW

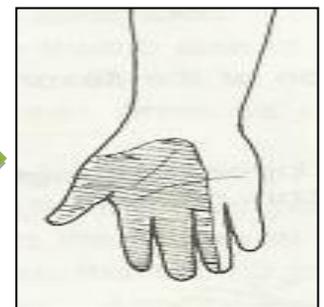
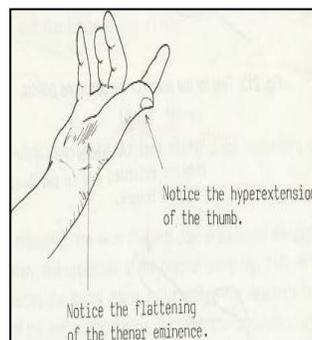
- Weakness of flexion of wrist due to paralysis of flexor carpi radialis & Palmaris longus.
- Loss of pronation due to paralysis of pronator teres & pronator quadratus.
- Loss of flexion of middle phalanges of medial 4 fingers due to paralysis of flexor digitorum superficialis.
- Loss of flexion of terminal phalanges of index & middle fingers due to paralysis of lateral 1/2 of the flexor digitorum profundus.

II- ABOVE THE WRIST

- Loss of opposition of thumb due to paralysis of opponens pollicis.
- Flattening of the thenar eminence due to atrophy of thenar muscles.
- The characteristic deformity 'APE HAND' is present.
- Loss of cutaneous sensations on the palmar surfaces of the lateral 3 1/2 fingers.

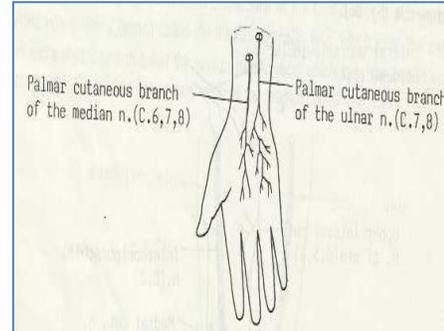
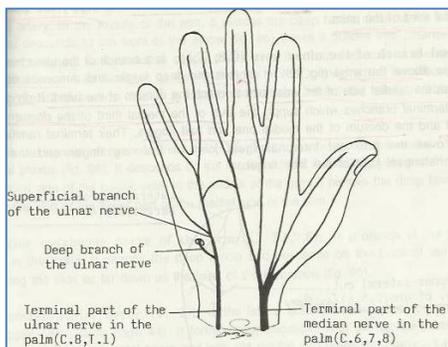


- Loss of flexion of thumb due to paralysis of flexor pollicis longus & brevis
- Loss of opposition of thumb due to paralysis of opponens pollicis.
- Flattening of the thenar eminence due to atrophy of thenar muscles.
- The characteristic deformity in the hand 'APE HAND' because the thenar eminence is flattened and the thumb is hyperextended.



CARPAL TUNNEL SYNDROME

- It results from **compression of median nerve** in the carpal tunnel.
- **Slight flattening of thenar eminence** due to wasting of ms. of thenar eminence supplied by median nerve.
- This is accompanied by **burning pain** or 'pin and needles' and diminished cutaneous sensations on **palmar aspect of lateral 3 ½ fingers**.
- No paresthesia occurs **over the thenar eminence** (because this area of skin is supplied by palmar cutaneous branch of median N.) in the forearm..



ULNAR NERVE

Origin:	course:
From the medial cord of the brachial plexus, (C7,8& T1).	<ul style="list-style-type: none"> • It runs downward on the medial side of the brachial artery as far as the middle of the arm. • At the insertion of the coracobrachialis, it pierces the medial intermuscular septum and, accompanied by the superior ulnar collateral artery, to enter the posterior compartment of the arm. • Then it passes behind the medial epicondyle. • It has no branches in the arm. • Having pierced the medial septum it descends behind it, covered posteriorly by the medial head of the triceps. • At the elbow, it lies behind the medial epicondyle on the medial ligament of the elbow joint. • It continues downward to enter the forearm between the two heads of the flexor carpi ulnaris.

Muscular: To one & half muscles.

-Flexor carpi ulnaris.

-Medial ½ of FDP

Articular: To elbow joint.

Dorsal posterior cutaneous branch:

To the **medial 1/3rd** of dorsal surface of the hand and **1½** fingers.

Palmar cutaneous branch : to supply skin of palm of hand.

ULNAR NERVE in the
Forearm

• It runs down the forearm between **FDP** and **FCU**.

• In the lower half of the forearm it lies **medial** to the ulnar artery.

• It enters the wrist superficial to the flexor retinaculum, between the tendons of **FDS & FCU**.

ULNAR NERVE in
The Hand

- Enters the palm **superficial** to the flexor retinaculum, close to the **lateral border of pisiform bone**.
- Then it divides into **superficial & deep** branches.

- **Superficial branch:**
- Runs between **pisiform & hamate**.
- It supplies **palmaris brevis & palmar aspect of the medial 1½ fingers**.

- **Deep branch:**
- Runs between **abductor digiti minimi & flexor digiti minimi**.
- It pierces **opponens digiti minimi**.
- Then **passes laterally** within the concavity of deep palmar arch.
- It lies **deep** to the flexor tendons.
- **It supplies 14 muscles**
- Three **hypothenar muscles**.
- **Adductor pollicis**.
- **All dorsal & palmar interossei**.
- **Medial 2 lumbrical**.

LESION OF ULNAR NERVE

ABOVE WRIST:

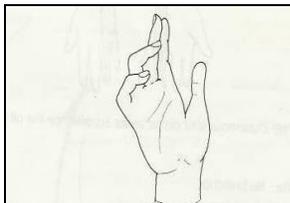
Motor:

- It leads to paralysis of intrinsic muscles of hand as described above.
- The deformity is called '**claw hand**'



sensory:

- Loss of cutaneous sensations.



lesion of ulnar nerve



Ulnar nerve	
Sensory	Motor
	Small muscles of the hand except abductor pollicis brevis Ulnar flexors of little and ring finger and wrist

ABOVE ELBOW:

Motor:

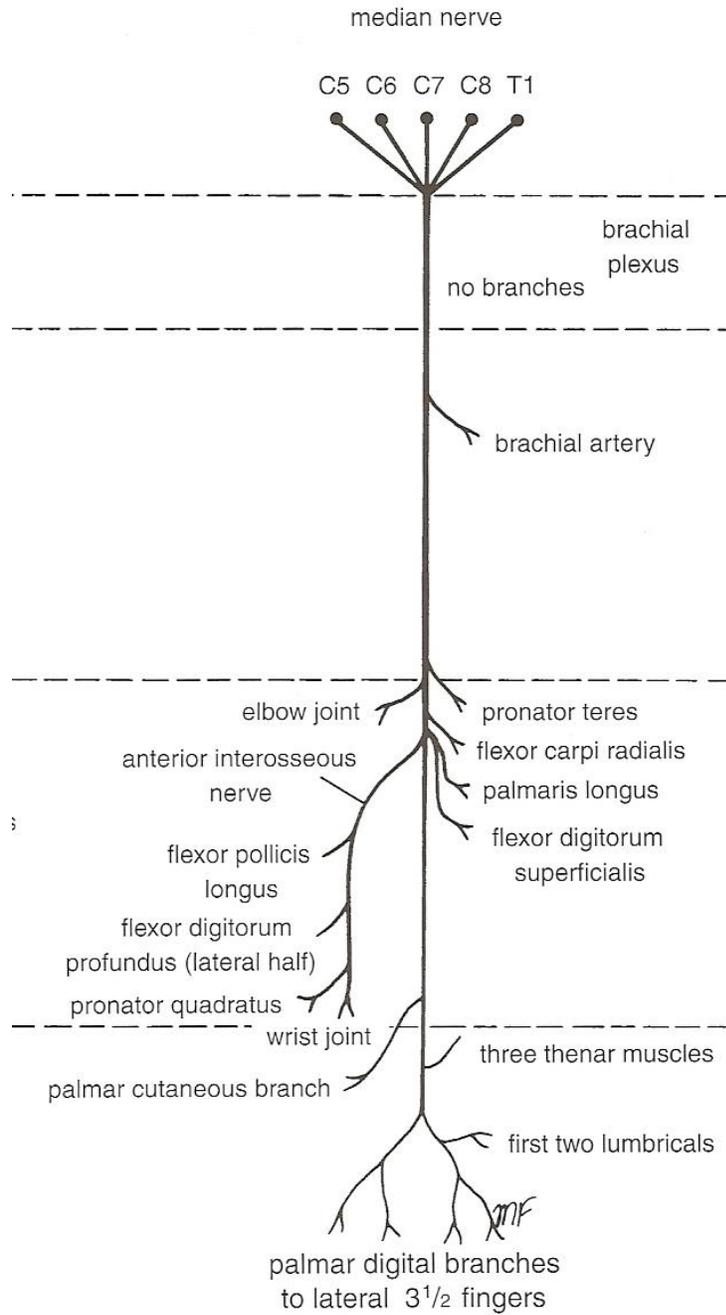
- Weakness of flexion of wrist due to paralysis of **flexor carpi ulnaris**.
- Loss of flexion of terminal phalanges of **ring & little** fingers due to paralysis of **medial 1/2 of flexor digitorum profundus**.
- Paralysis of all interossei & medial 2 lumbricals
- The characteristic deformity is called '**partial claw hand**'.
- Atrophy of hypothenar muscles.
- The fingers are hyperextended at **metacarpophalangeal** joints and flexed at **interphalangeal** joints in the ring & little finger.
- Loss of adduction of hand & thumb due to paralysis of **flexor carpi ulnaris & adductor pollicis**



sensory:

- Loss of cutaneous sensations on the front & dorsum of medial 1/3 of hand + medial 1 1/2 fingers.

Branchs Nerve Median The All THE Diagram Show You



The diagram Show You All The Ulnar Nerve Branches

