

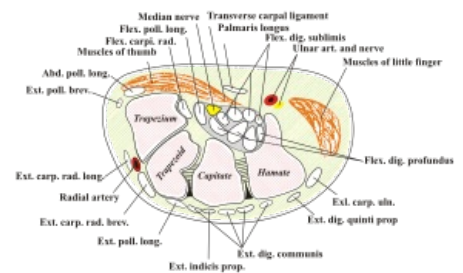
Examination of the median nerve

Anatomy

Nervus medianus arises from the C5–Th1 segments of the cervicobrachial plexus. It runs along the inside of the arm, near the elbow it dives deep, in the wrist area it runs just below the retinaculum flexorum to the fingertips. It has both a sensory and a motor component, so it is a mixed nerve.

Motor innervation area

- m. flexor digitorum superficialis
- m. flexor digitorum profundus
- m. flexor pollicis longus et m. flexor pollicis brevis
- m. abductor pollicis brevis
- m. opponens pollicis
- m. pronator teres
- m. pronator quadratus
- m. flexor carpi radialis
- m. palmaris longus
- mm. lumbricales I. et II



Transverse section of the wrist. Based off Gray's anatomy diagram of the same.

Sensitive innervation area

The median nerve sensitively innervates the entire II on the dorsal side of the hand. and III., the ulnar side of IV. and I. finger. On the palmar side, it innervates I.–III. finger and radial side of finger IV. and much of the thenar.

Examination of a patient with paresis

Thumb abduction test

We invite the patient to place the hand with the palm on the table and move the thumb away from the other fingers. However, he can't handle this move due the m. abductor pollicis brevis being weakened.

Thumb opposition test

We invite the patient to place the hand dorsally on the table and connect the thumb and little finger with the end of the nail. Because of the weakening of the m. opponens pollicis, the patient is unable to perform this movement.

Thumb circling test

We invite the patient to interlace his fingers and then circle his thumbs around himself. It will happen that on the paretic limb the thumb will not move and will be encircled by the thumb of the non-paretic hand.

Compass test

we invite the patient to place the back of the hand on the table and to circle the tips of the fingers with the thumb. It will happen that by IV. and the V. finger will not reach the thumb, thanks to the weakening of m. opponens pollicis.

Connected hands test

We invite the patient to join the hands with the palms together while simultaneously flexing the MP joints, DIP and PIP. It will happen that I.–III. the finger will remain extended.

Fist test

We invite the patient to hold his hand into a fist. Thanks to the weakening of m. adductor pollicis, m. flexor pollicis longus, m. flexor pollicis brevis and m. opponens pollicis and m. flexor digitorum longus et brevis the patient is unable to hold a fist, I.–III. fingers will be semiflexed or unmoved.

Bottle test

We invite the patient to hug the body of the bottle with the thumb and forefinger. What happens is that the thumb does not completely wrap around the bottle and the patient is unable to lift the bottle.

Muscle test

A muscle test for the relevant muscles is the most objective indicator of the extent of damage.

Clinical image of lesion

The lesion begins insidiously, at first with only classic tingling in the thumb and thenar area, then sensitive denervation is added. A typical symptom is the so-called *monkey hand*, where the thumb is dragged by m. adductor pollicis (inervation: n. ulnaris) in line with the other fingers, II. and III. the finger is in semiflexion to extension.

Causes of lesion

The most common place where the lesion occurs is the wrist, where the median nerve is located relatively superficially. Here also under the retinaculum flexorum oppression can occur due to overload, then we are talking about the so-called **carpal tunnel syndrome**. Furthermore, compression may occur in the axilla or in the elbow area due to impact supracondylar fractures.

Links

Connected articles

- Examination of the radial nerve | Examination of the tibial nerve | Examination of the ulnar nerve
- Carpal tunnel syndrome

Literature

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