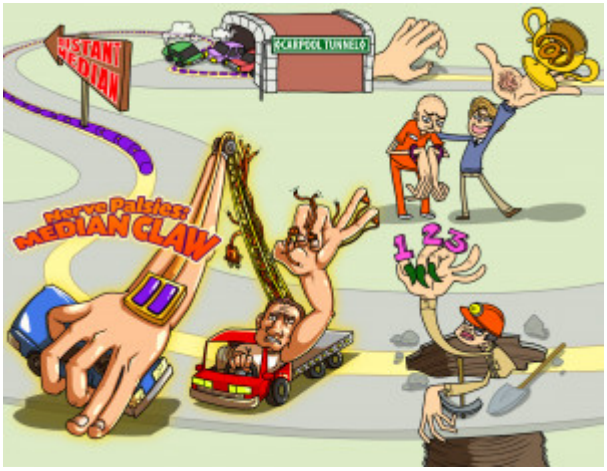
Nerve Palsies - Median Claw

Injuries to the distal median nerve may cause median claw. The distal median nerve runs through the carpal tunnel and is at risk for compression, especially in patients who sleep on their wrists, have hypothyroidism or rheumatoid arthritis, or are pregnant. Patients with median nerve compression may have a positive Tinel’s sign or Phalen’s sign. Because the distal median nerve innervates the first two lumbricals patients have difficulty extending the second and third digits, creating the appearance of a “median claw”. These patients may also demonstrate atrophy of the thenar eminence.



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Nerve

Distal Median Nerve
Distal Median Nerve in the Distance
The distal median nerve courses through the carpal tunnel to innervate the the first and second lumbricals, opponens pollicis, abductor pollicis brevis, and flexor pollicis brevis.

Causes

Carpal Tunnel Syndrome
Carpool Tunnel
This syndrome is caused by compression of the median nerve, which runs with nine tendons through the tight the carpal tunnel. Median nerve compression causes numbness, tingling, and pain over the palmar side of the thumb and second, third, and half of the fourth digits. It commonly occurs in patients who sleep with pressure on the wrist, pregnancy due to the state of fluid overload, hypothyroidism due to GAG accumulation, and rheumatoid arthritis due to tendon inflammation.

Deficit

Unable to Extend Thumb, Pointer and Middle Finger
Extension-cords can't extend Thumb, Pointer and Middle Finger
The distal median nerve innervates the first and second lumbricals, which allow flexion at the metacarpophalangeal joint and extension at the proximal and distal interphalangeal joint. With distal median nerve compression and unopposed flexion by the flexor digitorum profundus, the pointer and middle finger are unable to fully extend at the proximal and distal interphalangeal joints. Therefore, the pointer and middle finger appear flexed, or clawed, on extension.

Presentation

Clawing of Digits 1-3
Clawing 1st through 3rd Digit
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Tinels Sign
Tunneler
When tapping on the median nerve, patients with a positive Tinel’s sign experience numbness and tingling over the sensory distribution of the median nerve, which encompasses the palmar side of the thumb and second, third, and half of the fourth digits.

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Phalens Sign

Felon

Phalen test involves having a patient forcefully press the dorsal side of both hands together and flex at the wrist for 30 seconds; this maneuver causes the lumbrical tendons to slide further into the carpal tunnel and compress the median nerve. Patients with a positive Phalen's sign experience numbness and tingling over the sensory distribution of the median nerve, which encompasses the palmar side of the thumb and second, third, and half of the fourth digits. This sign may indicate that the patient has distal median nerve compression.

Complication

Atrophy of Thenar Eminence

@-trophy of Thumb-near-palm

Because the proximal median nerve innervates the muscles of the thenar eminence, median nerve damage may result in muscle atrophy. These muscles include opponens pollicis, abductor pollicis brevis, and flexor pollicis brevis.

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