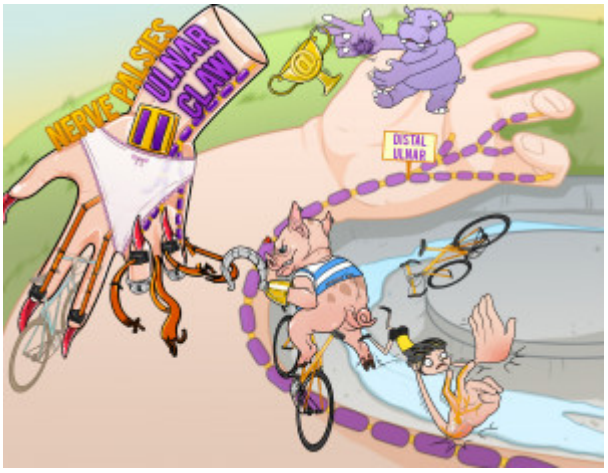
Nerve Palsies - Ulnar Claw

Ulnar claw results from injuries to distal sections of the ulnar nerve. These injuries are seen in FOOSH injuries, which fracture the hook of the hamate bone, and in cyclists who compress the distal ulnar nerve on bicycle handlebars. The distal ulnar nerve innervates the the 3rd and 4th lumbricals, so damage to this nerve prevents digit extension and unopposed flexion of digits 4 and 5, resulting in a claw hand on extension. Although ulnar claw may look the same as the “hand of benediction” or “pope’s blessing”, the ulnar claw is due to ulnar nerve damage and is seen when the patient tries to extend all their fingers. Whereas the “pope’s blessing” is caused by median nerve damage, and occurs when trying to make a fist.



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Nerve

Distal Ulnar Nerve
Ulnar Nerve in the Distance
Comprised of the C8 and T1 nerve roots, this nerve innervates the hypothenar muscles, adductor pollicis, interossei, and 3rd and 4th lumbricals. It courses medially down the forearm and into the hand superficial to the flexor retinaculum. Along with the ulnar artery, it subsequently passes through Guyon’s canal, near the hook of the hamate bone.

Causes

Fracture Hook of Hamate (distal injury)
Fractured Hook of Ham
Fracturing the hook of the hamate commonly occurs when falling down onto an outstretched hand (FOOSH injuries).

Cyclists
Bicycle
Cyclists who constantly compress the distal ulnar nerve, within Guyon’s canal, on bicycle handlebars can injure the distal ulnar nerve and present with ulnar claw.

Compression Guyon's Canal
Guy-on Canal
Ulnar claw can occur in cyclists who constantly compress the distal ulnar nerve, within the Guyon canal, on bicycle handlebars.

Functional Deficit

Unable to Extend 4th and 5th Digits
Extension-cords can't extend 4th and 5th Digits
Because the distal ulnar nerve innervates the 3rd and 4th lumbricals, the 4th and 5th digits cannot extend at the proximal and distal interphalangeal joints.

Presentation

Hand Resembles Ulnar Claw on Extension
Underwear Claw with Extension-cords
On extension, the 4th and 5th digits resemble a claw due to unopposed action of extrinsic flexors, such as flexor digitorum profundus and flexor digitorum superficialis, which are both innervated by the median nerve.

Complications

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Atrophy of Hypothenar Eminence

@-trophy of Hippo's Hypothenar Eminence

Without innervation from the distal ulnar nerve, muscle wasting (atrophy) of the opponens digiti minimi, abductor digiti minimi, and flexor digiti minimi brevis may occur.

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