HT 6

Yin Xi "Yin Cleft"

Proximal to the wrist on its volar aspect, 0.5 cun proximal to the wrist crease at HT 7, on the radial aspect of the tendon of the flexor carpi ulnaris muscle.

Muscles

• **Flexor digitorum superficialis muscle:** Flexes the middle phalanges of the fingers at the proximal interphalangeal joints. Also flexes the proximal phalanges at the wrist and metacarpophalangeal joints.

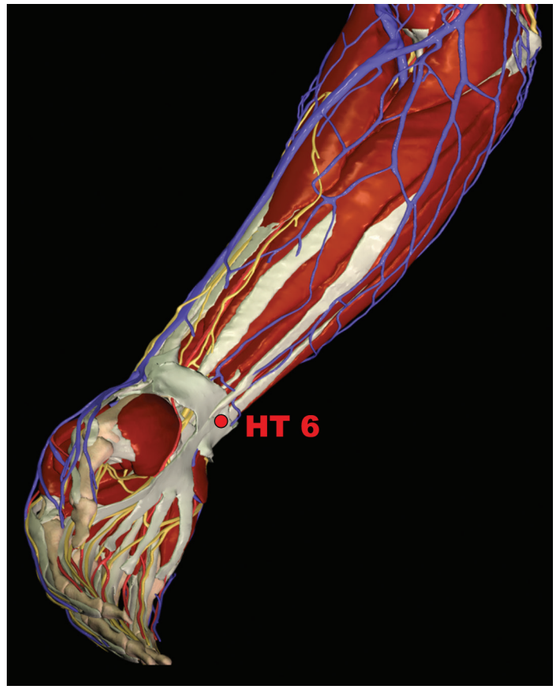

Figure 5-14. Points located at or near myotendinous junctions were historically called "Xi" or "Cleft" points, signifying a division between the muscle and tendon. HT 6, "Yin Cleft" is such a point along the HT channel, considered a Yin channel because it courses along the inner and palmar surface of the thoracic limb. Tender myotendinous junctions signal active trigger points resulting from irritable nociceptors and poor oxygenation relative to normal myotendinous junctions. Myotendinous junctions in the wrist and hand contain a high density of Golgi tendon organs (GTO), particularly in the muscular portion of thejunction (Jozsa L, Balint J, Kannus P, et al. Mechanoreceptors in human myotendinous junction. *Muscle & Nerve.* 1993;16:453-457). GTO's work with muscle spindles to signal position and respond to active contraction in the muscle as well as passive stretch. Free nerve endings in these zones serve as pain receptors. In addition to GTO's and free nerve endings, the myotendinous junction also contains Ruffini and Pacinian corpuscles, i.e., mechanoreceptors that aid the GTO and free nerve endings in orchestrating coordinated and protective control over complex bodily movements. Thus, myotendinous junctions house four types of sensory nerve endings: Type I (Ruffini corpuscles, pressure sensors), Type II (Pacinian corpuscles, also pressure sensors), Type III (GTO's) and Type IV (free nerve endings).

• **Flexor digitorum profundus muscle:** Flexes the distal phalanges at the distal interphalangeal joints of the fingers. Aids flexion of the hand.

• **Pronator quadratus muscle:** Pronates the antebrachium, binds the radius and ulna.

• **Flexor carpi ulnaris muscle:** Adducts and flexes the hand at the wrist.

Clinical Relevance: Prolonged contraction of the forearm and hand flexors can lead to fatigue and myofascial dysfunction. Activities include motorcycle racing and other high-force, repetitive activities.[1] The cross-sectional anatomy visible in Figure 5-15 illustrates the relationships of the local musculature to the entry site at HT 6, suggesting the angle and depth required for local trigger point deactivation.

Tension in the flexor carpi ulnaris muscle contributes to ulnar nerve lesions at the elbow more commonly than does tension in the flexor digitorum profundus.[2] Ulnar neuropathy at the wrist is more rare and difficult to localize with routine electrophysiologic studies than ulnar neuropathy at the elbow.[3] Myofascial palpation of the tissues along the course of the ulnar nerve often reveals the locus of dysfunction and prompts attention to the site through medical acupuncture and related techniques.

Nerves

• **Medial antebrachial cutaneous nerve (C8, T1):** Supplies the skin on the anterior and medial aspects of the forearm.

• **Note: Communicating branches pass between the median and ulnar nerves.**

• **Ulnar nerve (C8-T1):** The ulnar nerve supplies the flexor carpi ulnaris and ulnar half of the flexor digitorum profundus muscle, which sends tendons to the 4th and 5th digits. The ulnar nerve supplies most of the intrinsic hand muscles (i.e., the hypothenar, interosseous, adductor pollicis, deep head of the flexor pollicis brevis, and the medial (IV and V) lumbrical muscles. It provides sensation to the palmar and distal dorsal aspects of the ulnar 1.5 digits (i.e., the little and the ulnar half of the ring finger) and adjacent palmar region. It gives off four branches: the palmar cutaneous, dorsal, superficial, and deep branches. The palmar cutaneous branch supplies the skin at overlying the carpal bones on the ulnar side of the wrist. The dorsal branch supplies the skin on the ulnar aspect of the dorsal hand and the proximal parts of the little and medial ring finger. The superficial branch supplies the palmaris brevis muscle, as well as sensation to the skin of the palmar and distal dorsal aspects of the little finger and the ulnar side of the ring finger, as well as the proximal palm. The deep branch supplies the hypothenar muscles (i.e., the abductor, flexor, and opponens digiti minimi), and the IV and V lumbrical muscles, the adductor pollicis muscle, and the deep head of the flexor pollicis brevis muscle.

Clinical Relevance: Venipuncture can injure the medial antebrachial cutaneous nerve. The nerve becomes subcutaneous just proximal to the medial epicondyle. It follows the HT channel region to provide cutaneous sensation to the ulnar aspect of the antebrachium.[4] Steroid injection for medial epicondylitis, cubital tumor surgery, arthroscopy of the elbow, and routine venipuncture can injure the nerve, along with repetitive motion trauma, soft tissue injury, and subcutaneous lipomas.

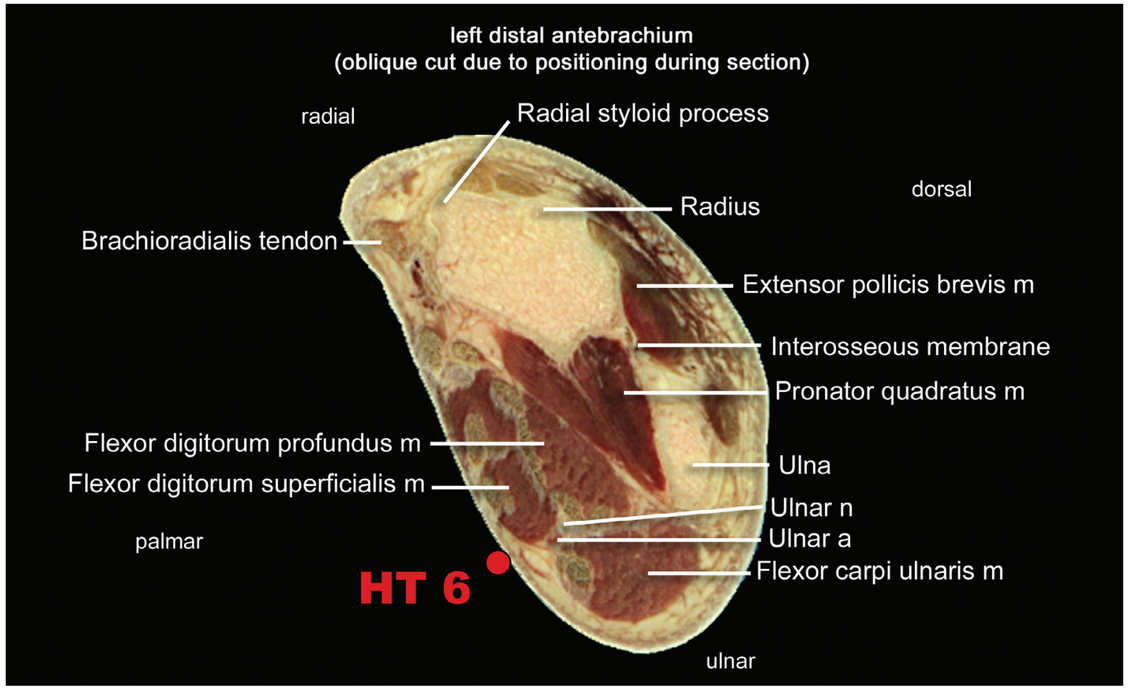

Figure 5-15. As with the other HT points near the wrist, the ulnar nerve and artery stand in close approximation.

A sensory neuropathy can result. Medical acupuncture and related techniques will support neural recovery.

The ulnar nerve suffers compression at the wrist from soft tissue expansions such ganglion cysts.[5] Ulnar neuropathy at the wrist can express itself as a mixed motor and sensory neuropathy, purely motor, or purely sensory.[6]

Following repair of the ulnar and median nerves, sympathetic unmyelinated fibers regrow more quickly than sensory myelinated fibers. The relative amount of autonomic versus somatic nerve endings in an acupuncture point locale colors the kind of response the tissue exhibits.

Vessels

• **Ulnar artery:** Arises near the neck of the radius in the cubital fossa. It provides several branches, including the anterior and posterior (branches of the) ulnar recurrent arteries, the common interosseous artery, the anterior and posterior interosseous arteries, and the dorsal and palmar carpal branches, which anastomose with the radial artery.

• **Ulnar veins:** These paired veins drain the forearm and accompany the ulnar artery. The receive tributaries from muscles lying nearby.

Clinical Relevance: Note the proximity of the ulnar nerve and artery to HT 6 in Figure 5-15. Needling directly into the ulnar artery and nerve at this site could cause hemorrhage and pain. Instead, palpate for the pulse prior to inserting a needle. Angle the insertion toward the muscles instead. That said, nervi vasorum associated with the ulnar artery figure prominently into the cardiovascular and hemodynamic indications of this point.

Indications and Potential Point Combinations

• **Chest pain, angina pectoris, palpitations, chest pressure:** HT 6, with HT 2 or HT 3, PC 6, GV 14, BL 10-BL 15

• **Anxiety, insomnia, night sweats:** HT 6 with PC 4, PC 5, or PC 6, GV 20, LR 3

• **Local pain:** HT 6 if tender, along with other trigger points in the flexor muscles.

References

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4. Asheghan M, Khatibi A, and Holisaz MT. Paresthesia and forearm pain after phlebotomy due to medial antebrachial cutaneous nerve injury. *Journal of Brachial Plexus and Peripheral Nerve Injury.* 2011;6:5.
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