DIFFERENCE BETWEEN FROMENT'S SIGN AND JEANNE'S SIGN IN ULNAR PALSY

Thumb stability is possible because of coordinat-ed contraction of the thumb muscles. Imagine three people pulling equally on three guy wires attached to the top of a pole that is resting on the ground. If any one individual alters tension on a guy wire, the pole moves. The thumb is similar to the pole, but more complex since the muscles (guy wires) have to maintain balance at three joints simultaneously.

When the ulnar nerve is not functioning, the thumb loses the pull of the adductor pollicis (AP), as well as one belly of the flexor pollicis brevis (FPB). These losses remove one of the essential “guy wires” and the balance is thrown off.

Many think the adductor pollicis only brings the first metacarpal toward the second metacarpal (adduction). The AP insertion into the ulnar sesamoid/volar plate is indeed primarily responsible for adduction, but the insertion into the base of the proximal phalanx/dorsal apparatus also directs power to both metacarpophalangeal (MP) joint flexion and IP joint extension.

Froment's Sign (1)

When the patient grasps a piece of paper between the thumb & index fingertips of both hands and the examiner pulls on the paper, the thumb with ulnar palsy flexes at the interphalangeal (IP) joint, while the uninjured thumb will not flex [or only minimally]. The absence of the AP power removes one of the MP joint flexion/IP joint extension forces, so the flexor pollicis longus (FPL) power becomes more dominate.

Jeanne’s Sign (2)

Similar to Froment’s sign, Jeanne’s sign is also seen in response to pinch forces. Instead of isolated thumb IP flexion, the IP flexion is accompanied by MP joint hyperextension.

Some individuals have normal MP joint volar plate laxity, allowing hyperextension of the joint. Therefore if Jeanne’s sign is seen, one must determine whether it is related to a normally lax volar plate or to the absence of part or all (innervation is variable) of the FPB—or both.

The most vital observation is the comparison to the contralateral uninjured thumb. If both thumbs are fully innervated it is likely (but not absolute) that the pinch pattern will be similar.