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Complex made Simple...clinically relevant education by Judy C. Colditz, OT/L, CHT, FAOTA

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THE LINBURG-COMSTOCK ANOMALY

Anatomical variations in the upper extremity are common and often confound our precise understanding of the anatomy of a single individual. In 1979 Richard Linburg and Brain Comstock wrote about anomalous tendon slips between the flexor pollicis longus (FPL) and the flexor digitorum profundus (FDP) muscles/tendons.(1) This interconnection prevents the thumb interphalangeal joint from flexing without the distal interphalangeal (IP) joint of the index finger also flexing, and vice versa. Linburg and Comstock found that 31% of 194 patients had this anomaly in one extremity and 14% in both extremities. Yu, Chase and Strauch describe five possible presentations of this connection.(2) Although this occurs commonly, (I have it in both hands) I do not recall this being discussed during my years of anatomy and kinesiology.

How do you test for it?

The examiner maintains the index finger in full extension with the wrist also extended. Ask the patient to actively flex the thumb IP as far as possible. Next, the examiner holds the thumb in full extension with the wrist also extended and asks the patient to actively flex the index finger as far as possible, being sure the patient is flexing with the FDP muscle. If the Linburg-Comstock anomaly is present the examiner will feel tension in the digit being held as it also flexes and the patient will report pain in the volar forearm during attempted flexion.



Thumb flexion creates index finger flexion



Index finger flexion creates thumb flexion

What difference does it make if it is present?

- If you are performing a manual muscle test of either the FPL or the FDP to the index finger and you hold the other digit in full extension (which often seems convenient) you will be unable to accurately access the ability of the muscle and you will not receive an accurate result.
- Allowing unrestricted motion (or resistance) of the index finger or thumb if the other has undergone repair of the FPL or FDP tendon can provide excessive resistance to the active flexion and result in rupture of the repaired tendon. (3)
- If your goal is to increase the active excursion of the FDP of the index finger or the FPL of the thumb, it is prudent to instruct the patient to simultaneously flex the other digit to maximize the concurrent proximal excursion of both of the tendons.
- If a patient complains of forearm pain, this anomaly can be the cause.

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