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

January, 2012

ClinicalPearls

No. 17

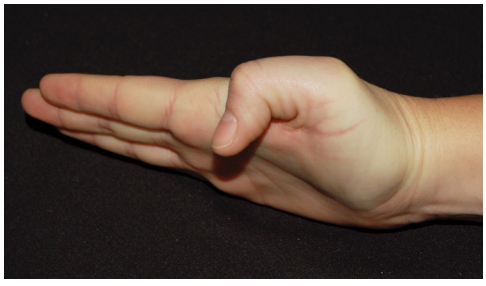
RATIONALE FOR EXERCISE FOR THUMB CMC OSTEOARTHRITIS

Recently when teaching a HandLab thumb course, I received a particularly insightful question:
"The purpose of exercises for thumb carpometacarpal (CMC) osteoarthritis is to maintain full extension and abduction of the CMC joint, since adduction/flexor forces are naturally stronger. Since metacarpophalangeal (MP) joint hyperextension often accompanies CMC joint osteoarthritis, how can you justify focusing on exercises to strengthen the extensor pollicis brevis (EPB)?"
My answer:

- The purpose of active thumb extension exercises is to focus extension power at the CMC joint and not allow it to be used up by extension of the more distal joints.
- The best exercise is to maintain the thumb interphalangeal (IP) and MP joints flexed while extending/abducting the CMC joint (lifting the CMC toward the dorsum of the hand.) This assures that the extensor pollicis longus (EPL), the EPB and the abductor pollicis longus (APL) are all active, but their collective power is directed to the CMC joint.
- It is impossible/difficult to isolate the EPB. Frequently the EPB does not end just distal to the MP joint but rather blends with the dorsal apparatus of the thumb and journeys alongside the EPL to an insertion distal to the IP joint. This means that the MP joint cannot be extended without extending the IP joint.
- Many recommend strengthening the EPL. There are two reasons I would not choose this exercise:
    1. The EPL crosses all 3 thumb joints and is going to be most effective at the loosest joint/s, so it may hyperextend the IP and/or MP joints but not effectively extend the CMC joint (thus the suggestion that the MP & IP joints be held flexed.)
    2. The EPL lies to the ulnar side of the axis of the MP joint. If the patient does not have full passive abduction of the thumb CMC joint, activating the EPL offers an adduction force, which is the opposite of the desired abduction.



Patient with CMC osteoarthritis who hyperextends the MP & IP joints instead of fully extending the CMC joint.



Suggested exercise with MP & IP joints held flexed so the CMC joint receives maximum extension power.

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