

Carpal Tunnel Syndrome: Conservative Care

Charles L Blum

Narrative: A contributory factor in Carpal Tunnel Syndrome (CTS) is overuse of the wrist with repetitive grasping, possibly shortening the flexor muscles and related connective tissue. This shortening may reduce the size of the tunnel or modify the passageway and compromise the median nerve's pathway creating entrapment and irritation.

Since the main use of our hands involve grasping, touching, and holding it is common to overuse our wrist flexor compartment possibly creating a chronic flexed wrist joint.

I describe a method of assessing and conservatively treating this type of CTS (flexion overuse), which incorporates chiropractic extremity adjusting, using KT ProX tape, and rehabilitative exercises.

Indexing terms: Chiropractic; SOT; carpal tunnel syndrome; wrist rehabilitation.

Introduction

Carpal tunnel syndrome (CTS) is one of the most common peripheral entrapment neuropathies, (1) relatively commonly needing surgical intervention, (2) but surgery is not fraught without secondary side effects. (3)

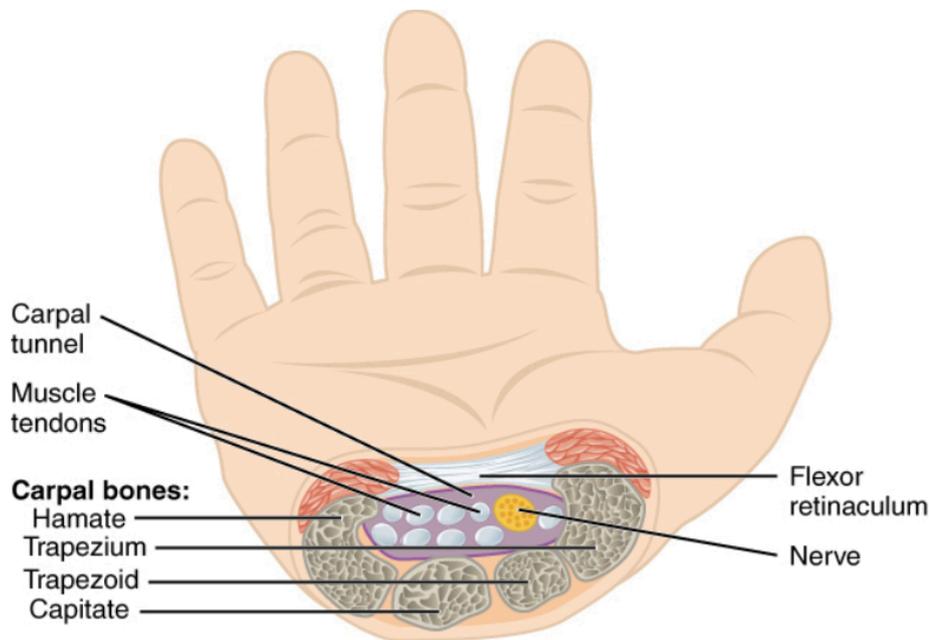
Developing an effective conservative method of caring for this condition is something doctors in healthcare are regularly investigating.

... A positive finding for CTS will note strength with opposing thumb and 5th digit extension and ulnar/radial deviation with asymmetrical weakness on wrist flexion...

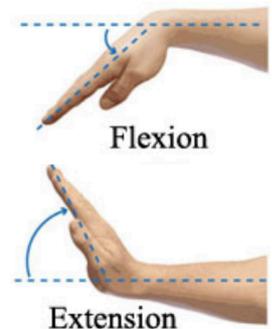
What is carpal tunnel syndrome (CTS)?

Carpal means the wrist joint and on the palm side (flexor) surface of the wrist there is a tunnel of connective tissue that allows for a nerve to the hand (median nerve) to pass. While there can be various causes of CTS such as from local inflammation, connective tissue disorders, and repetitive trauma, one aspect that can contribute to CTS is how the joint is positioned and used.





One contributory factor in CTS is overuse of the wrist with repetitive grasping, possibly shortening the flexor muscles and related connective tissue. This shortening may reduce the size of the tunnel or modify the passageway and compromise the median nerve's pathway creating entrapment and irritation. Since the main use of our hands involve grasping, touching, and holding it is common to overuse our wrist flexor compartment possibly creating a chronic flexed wrist joint.



The following is a method of assessing and conservatively treating this type of CTS (flexion overuse), which incorporates chiropractic extremity adjusting, using KT ProX tape, and rehabilitative exercises.

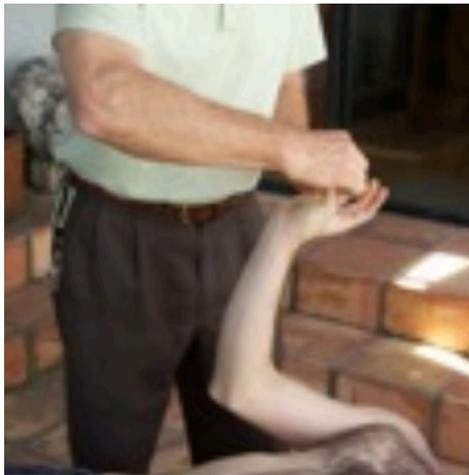
One paradigm of Chiropractic, sacro occipital technique (SOT), has a methodology for assessing wrist flexion malpositions, which can relate to CTS. Generally it can be found by a muscle test, which will provocatively exacerbate any wrist flexion malposition and cause a muscle (thumb and 5th digit approximation) to weaken on testing.

Chiropractic Assessment and Treatment

The patient is asked to approximate his/her thumb and 5th digit and resist their separation while having the hand and wrist in a neutral position. Once baseline strength is noted the patient is then tested with the wrist in flexion, extension, ulnar deviation and radial deviation. A positive finding for this CTS condition will note strength in extension and ulnar/radial deviation with asymmetrical weakness on wrist flexion.



Testing strength in a neutral position



Testing strength in wrist extension



Testing strength in wrist flexion

Chiropractic adjusting involves creating some gentle distraction of the wrist joint in slight flexion with pressure on the extensor surface of the wrist bone(s) (malpositioned in flexion) and maintaining this pressure as the wrist joint is brought gently into an extension position. The concept is that the wrist joint is in too much flexion and the joint and its related bones need to be allowed to move into their normal extension position. Once gently adjusted into position the joint will move in a balanced way both in flexion and extension with equal strength on finger approximation.

KT ProX Taping for CTS

The KT ProX tape is the perfect tape for this type of CTS patient presentation since it minimises the amount of tape needed as well as creates the exact amount of pressure to support the wrist into an extension position. Once the wrist joint is functionally positioned through the chiropractic adjustment and when re-testing the thumb and 5th digit approximation is strong during wrist flexion then taping can be used to maintain the correction.



With the wrist in slight extension the central part of the tape is first placed with 50-75% stretch from the back of the hand to the top of the forearm, maintaining slight extension at the wrist joint. Once in place then the sides of the KT ProX tape are stretched at 50-75% to add tension right at the back of the wrist joint. This will inhibit wrist flexion, which while important during the day and is especially an issue for nighttime when sleeping.

Rehabilitative exercises

Since the wrist is most commonly used for flexion activities, such as grasping and holding, this often creates an imbalance in muscle use. So it is important to encourage the patient to pursue muscle activities that involve wrist extension. Since hand extension activities are rare at best it is important to find activities that patient can perform on their own.

The simplest and most cost effective exercise involves using a rubber band place around the patient's fingers with the wrist in slight extension and having the patient open their fingers into extension. The rubber band's resistance will help stimulate the hand and wrist extensors which neurologically and physically will calm down the 'over-flexion' of the wrist joint. Generally it is recommended that 5-times a day the patient perform 3-sets-of-10 rubber band extension stretches with a 30-60 rest in between each set of 10-stretches.



Case

A 42-year-old female patient was seen at this office for a left sided 'over-flexed' CTS related wrist joint. She reported chronic wrist pain which was worse when awakening in the morning and on repetitive grasping, holding, and using a computer keyboard. She was assessed and treated for a wrist flexion malposition, was taped with KT ProX tape, and given rubber band exercises to perform.

The patient was seen once a week for 4-weeks at which point with the KT ProX tape removed there was no weakening of her thumb and 5th digit approximation on wrist flexion, which coincided with her having almost no wrist pain and full wrist function.

She was instructed to continue with the exercises and be seen in 2-weeks to be re-assessed. Her condition was stable at that 2-week mark and she was instructed to continue with the exercises, particularly after she performs repetitive activities (e.g., grasping and computer keyboard use), and be seen in 1-month. When she was seen at 1-month her condition was relatively stable and she was told to continue with the rubber band exercise for prevention, particularly after performing repetitive wrist activities and contact this office if there were any flare-ups.

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