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The Progression of Cervical Stenosis toward Cervical Spondylotic Myelopathy, Part 2

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In the previous article you were invited to consider:

▪ that there is a relationship between upper and lower extremity somatic difficulties mediated by the cervical reflex arc of C5-6

▪ that cervical stenosis (narrowing of the spinal canal) progressing toward cervical spondylotic myelopathy (CMS) may underlie many of the chronic somatic complaints that our clients bring to us.(1)

▪ that the prevalence of this progression is estimated to express itself functionally in approximately 80% of the general population over 55 years of age.

▪ that familiarity with the early indications of this progression may assist us to make timely referrals of our clients for appropriate medical testing, especially encouraging the consideration of a cervical MRI. (1)

This article will expand on the clinical indications that we need to become more familiar with, the theories that exist describing why and how this progression may occur, and some hands-on suggestions for what I have found to be effective to assist clients exhibiting the early and moderate stages of CMS progression.

However, at a certain point in this pathological progression, surgery does appear to be the best remedy. I have worked with 2 clients who have needed surgery for advanced CMS with positive results. For both of them I was unable to stem the tide. My best efforts and all the research I have done failed to prevent its progression. Many other clients have now identified this progression for themselves and are proactively adjusting their lives with common sense and grace to maintain their quality of their lives. Together they have been my teachers.

Let's begin by further elaborating the many possible somatic indications that may highlight this progression. The number one tip-off to my sensibilities is when a client presents with a history of same-sided somatic complaints of the neck, upper extremity, and lower extremity pain or dysfunction, including sciatica. The possible somatic combinations are quite varied; yet, when the pain or dysfunction is on the same side, this is my clinical flag. Another subtle clue that a client may not volunteer is occasional or frequent urgency or difficulty with urination.

Just today, a client who has had surgery for CMS and is an orthopedist specializing in knees, shoulders, and Sports Medicine, recounted that his fellow spinal surgeons have suggested to him that when an individual experiences an inability to stop their urinary stream this is one of the reliable indicators that the progression of CMS has become clinically significant.(2) The following paragraphs offer three different sets of symptomatic indicators which may trigger your perceptions to the varied functional expressions of this progression.

One medical journal article offers the following concise description of CMS: 'patients will generally report neck stiffness, a unilateral or bilateral deep aching of the neck, arm, or shoulder and possibly stiffness or clumsiness while walking. CMS usually develops insidiously. Other common complaints include crepitus in the neck with movement, occasional stabbing pain into the arm, elbow, wrist, or fingers or, report a dull achy feeling into the arm with intermittent

numbness or tingling into the hands. The hallmark symptom of CMS is weakness or stiffness in the legs. Patients with CMS may also present unsteadiness of gait. Weakness or clumsiness of the hands in conjunction with the legs is also characteristic of CMS. Loss of sphincter control or frank incontinence is rare, however, some patients complain of slight hesitancy on urination'. (3)

Another medical article references the following additional symptoms:

- Heavy feeling in the legs

- Inability to walk at a brisk pace

- Intermittant shooting pains into the arms and legs (like an electrical shock), especially when bending their head forward (known as Lermitte's phenomenon)

- Arm pain

Often it is the arm or neck pain that prompts someone with this condition to seek medical treatment and then the myelopathy is discovered through medical history, physical exam and a MRI scan. (4)

Myelopathy is distinguished from the many forms of radicular pain in that the discomfort is more generalized and doesn't necessarily follow the established sensory and motor maps for dermatomes(skin) and myotomes(muscles) that are generally accepted.

Finally, another medical article references the typical symptoms in yet a different fashion:

- Weakness, numbness, or clumsiness of the upper extremities (arms, hands, fingers)

- Altered walking ability perceived as either poor balance, weakness, heaviness, or numbness in the legs

- Variable degrees of radicular arm pain

Though CMS is painless in more than 50% of patients, when pain is present it may be described as a stabbing burning sensation or a persistent dull ache radiating throughout the arms to the forearms. At times the pain will extend into the fingers, associated with "pins and needles" paresthesias. Patients often comment about dropping objects accidentally or having trouble fastening their clothes. If prolonged, there may be associated muscle wasting and overt loss of sensation to vibration, pinprick sensation, pain and thermal sensation. As the impairment to spinal cord function progresses, both legs weaken and become progressively spastic. Bowel and bladder control may then be altered. In advanced cases, gait will become progressively more difficult without aid by a cane or walker. (5)

Wow! The above descriptions sure reflect some of my own somatic complaints, and they may also describe yours as you read them. Let's be real. A fair number of us within our profession are going to be part of that 80% of the population who experience the somatic complaints of this progression-- not just our clients. Some of these indications began popping up for me in my

middle thirties whereas now, at age 55, I experience them more often. To the best of my memory the occasional clumsiness in my general balance was the first indication to attract my attention at about age 35. Admittedly, my accumulated trauma history is well beyond the average and yes, I have a cervical MRI scheduled for myself.

Obviously, these identical somatic complaints may be indications of other forms of pathological progressions. I have listed these in Appendix 1 at the end of the article for your further consideration. More acute presentations of CMS often include visual disturbances and bilateral pain symptoms that are similar to the early and moderate stages of Multiple Sclerosis. (2)

We all know our role as massage therapists is not to diagnose anything, but rather to encourage our clients to seek medical attention that may provide them with the timely opportunity to make appropriate lifestyle or medical choices. We are part of our clients' early detection and prevention team. Aging occurs within us all, injury for some of us, and not everyone is dealt an equal hand in the genetic shuffle of the cards. Early detection and prevention are our best hedges to maintain the "quality of all of our lives".

According to Rene Calliet M.D., in 1956 cervical spondylotic myelopathy (CMS) was distinguished from myelopathy based on the presence of acute disk prolapse. The principal pathology is encroachment of bony protrusion(s) into the spinal canal or the intervertebral foramen or foraminae, or both. The resulting encroachment may apply direct pressure to the spinal cord itself and/or to one or both of the exiting spinal nerves. (6)

Let's now review the general theories offered to explain how the progression of CMS may occur:

Most common among the references I have gathered is the notion of a congenitally narrow spinal canal. Such a diminished diameter for the spinal cord accentuates the probability of eventual stenosis and myelopathy and hastens its functional and clinical expressions.

The second most offered theory, which builds on the first, is that nearly all of us eventually develop some degree of arthritis (spondylosis) between our cervical vertebrae, most commonly between the C4 – 7 levels of the spinal cord. Such spondylosis is often accompanied by varying degrees of osteophyte/spur formation, disc thinning and desiccation, disc protrusions/ herniations, vertebral remodeling and compression of the foraminal openings through which the spinal nerves deliver their electrochemical vitalization to their somatic and visceral end organs.

The third most cited reason for this central compression of the spinal cord is related to traumatic cranial/cervical events with their resulting vertebral subluxations and scar tissue formation. Also, the effects of wear and tear of repetitive head/neck movements are cited as contributing to and hastening the expression of somatic complaints and clinical symptoms.

Additionally proposed as contributors to spinal cord compression is the thickening of the ligaments surrounding the spinal canal including the pleating of the ligamentum flavum and the ossification of the anterior or posterior ligaments. The latter notion of ossification of the posterior longitudinal ligament has a particular designation of OPLL and is more often appreciated in non-asians.(5,6)

Vascular insufficiency and edema are also considered to be part of the degenerative progression usually thought to be associated with this fibrosis of ligaments as they may affect the anterior and posterior spinal arteries that supply the spinal cord.(7)

All of these notions have obvious merit and make sense logically, yet, in my opinion there seem to be missing pieces of the puzzle. It is a “both / and” rather than an “either / or”. Not a right or wrong. The body is both complex and quite simple, simultaneously. There is rarely a singular causative agent in chronic somatic profiles in my experience. Rather there are multiple streams flowing into a river of an unrelenting somatic expression. My next article will propose some additional streams that I believe also contribute to the progression of CSM.

Clinically, what has made the most sense to me is that anatomically most of our internal visceral organs are suspended forward and down from the spine and cranium. I owe a debt of gratitude to Dr. Jean Pierre Barral D.O., the developer of Visceral Manipulation and to Jon Zahourek, the developer of the Maniken style of anatomy study for illuminating this elegantly simple aspect of human anatomy. (8, 9)

Thus, what I have consistently observed to assist clients is to relieve the forward and downward pull of the head and neck upon the trunk. This may be accomplished by releasing the tensions associated with the suspension of the viscera themselves and by attending to the musculoskeletal flexor muscles, especially those whose attachments span from the posterior aspect of the body to an anterior mooring.

I would encourage you by whatever style of bodywork and massage that is your training base to release the tension of and to enhance the fascial ease of the SCM’s, the scalenes, the longus colli, the muscles of the jaw, the subclavius muscles, the pectoralis minor muscles, both sides of the diaphragm muscle, the rectus abdominus, the iliopsoas muscles, the piriformis muscles and the rectus femoris muscles and, to enhance the range of motion of your clients’ ankles.

Releasing any existing tension of muscular contracture and enhancing the fascial ease of these flexor muscles will reduce the forward and downward pressure on the neck and will soften the need for the extensor musculature of the posterior neck and upper back to develop varying states of contracture or spasm. Additionally, I recommend attending to the ease of the of the body’s transverse diaphragms at C0 – C1/2, C7, T1 & 2, T12 – L1 and L4-5/S1. It is through these transverse diaphragms that lymphatic and circulatory flow is most often impeded.(10) Also, apply your experience and knowledge of enhancing blood flow to the cervical vertebrae. This is a significant approach through which we may offer some assistance. It is not technique per se, rather where we place our attention and intention mediated by the quality of our touch. Place your attention and intention inside the body. Work from the “inside-out”.

Appendix I

Conditions that Mimic Cervical Spondylotic Myelopathy on Presentation (2)

Amyotrophic Lateral Sclerosis

(Lou Gehrig's disease, a progressive neurodegenerative disease that affects nerve cells in the brain and the spinal cord)

Extrinsic Neoplasia (metastatic tumors)

Hereditary Spastic Paraplegia (also called Familial Spastic Paraplegias or Strumpell-Lorrain disease, is not a single disease but is a heterogeneous group of genetic disorders in which the main feature is progressive spasticity in the lower limbs due to pyramidal tract dysfunction.

Intrinsic Neoplasia (tumors of spinal cord parenchyma)

Multiple Sclerosis (asymmetric paraparesis with sensory ataxia and hyperreflexia)

Normal Pressure Hydocephalus (Cerebral Spinal Fluid congestion)

Spinal Cord Infarction (Spinal cord infarction is a stroke either within the spinal cord or the arteries that supply it. It is caused by arteriosclerosis or a thickening or closing of the major arteries to the spinal cord)

Syringomyelia (where fluid filled cysts form within the spinal cord)

Vitamin B12 Deficiency (central to the body's ability to make new red blood cells)

Rheumatoid Arthritis and Myelopathy (condition usually afflicts the hand(s) first) (6)

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6. Neck and Arm Pain, Rene Cailliet, M.D., F.A. Davis Company, 1988.

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8. Visceral Manipulation I & II and, Trauma, Jean-Pierre Barral D.O., Eastland Press,1988, and seven years of class notes spanning from 1986 – 1993.

9. Jon Zahourek, Developer of the Zoologik System Kinesthetic Anatomy Maniken, Atlas of Human Musculature in Clay, Books 1 -5, Zahourek Systems Incorporated, 1995 and class notes from courses 1986 – 1991.

10. CranioSacral Therapy and Muscle Energy courses with Dr. John Upledger D.O. and Dr. Richard MacDonald D.O. at the Upledger Institute, 1986 – 91.