

Muscular Component of the Subluxation Complex

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Chiropractors enjoy theoretical discussions about the subluxation complex and its various aspects. Before I became a chiropractor, I practiced for nearly 20 years as a licensed physical therapist. Nearly half of that time was spent in a private practice, rheumatology clinic, under the direction of an MD whose ideas and treatment techniques were much different from those of his medical colleagues. His concepts of musculoskeletal care evolved over decades of serious thought and clinical experience. Having spent such a long time under his direct tutoring, I naturally became familiar with his way of thinking, and I was well practiced in applying his techniques to countless patients. I present some of these thoughts for your consideration in the hope that you may find them interesting to think about as you ponder the conditions of the patients you see every day. What do you really think about this?

A human being is in good health as long as his body, mind, and spirit function within a certain range of "normal limits." This, we generally call homeostasis. Changes in our "environment" demand subsequent changes in our functioning, sometimes to the point of disrupting our homeostasis. These environmental changes can be chemical, physical, or mental, and take many forms, such as an auto accident, falling off a roof, divorce, death of a spouse, drug abuse, lifting injuries, and many more.

As we attempt to adapt to these insults, one of our most basic and universal responses is increased muscle tone. We instinctively tighten our muscles in accordance with the now famous "fight or flight" response. This adaptive behavior is very important to our survival. However, many people under varying circumstances tend to overrespond, allowing this adaptive muscular tightening to become "maladaptive behavior." Long after the damage of the original insult has been repaired, the maladaptive muscular tightening persists as a well-practiced habit pattern. As this habitual tightening continues well beyond the time period during which it may have been of benefit, the involved muscles become fatigued. A sufficiently fatigued muscle becomes "cramped" and can no longer be voluntarily relaxed to its normal resting state.

The patient is now incapable of fully relaxing the involved musculature. As the tightening persists, ischemia develops and produces increasing pain. The instinctive response to increasing pain is increased tightening, leading to more fatigue, more cramping, more ischemia, more pain, more tightening, and the "pain/spasm" cycle is born and maintained. The situation just described now becomes the underlying source of many potential problems still to come.

The sustained hypertonicity in the tense muscles generates increasing levels of proprioceptive signals which begin to bombard the central nervous system. These signals register in the reticular formation (the alerting mechanism of the brain), and create a state of hyper-awareness or abnormally high level of alertness. Feelings of shakiness, jitteriness, and uneasiness may be noticed. The proprioceptive "tension" signals reach the hypothalamus and begin to alter the autonomic nervous system. The patient begins to complain of any number of related symptoms, such as sweating, flushing, chilling, constipation, indigestion, upset stomach, diarrhea, blurred

vision, dry mouth, sweaty hands and feet, lump in the throat, and more. These may progress to actual circulatory and gastro-intestinal disease states and may be classified as forms of "functional" illness. Through the hypothalamus-pituitary mechanism, the endocrine (hormonal) system becomes disturbed with its own set of symptoms. The excess of tension signal arrives at the limbic system which governs our mood or emotional tone. The resulting disturbances give rise to feelings of irritability, urgency, apprehension, and anxiety. Proceeding even further with this scenario, the tension impulses reach the cerebral cortex with its perception and association areas. Interference in these areas leads to confusion, altered judgement, depression, neurotic, and even psychotic disturbances. As any or all of the above type symptoms begin to appear, the patient's sense of uncertainty increases, leading to increased instinctive muscular tightening which started the problems in the first place. Does any of this sound familiar?

Meanwhile, the muscles continue their relentless tightening and cramping. The patient complains of back pain, headaches, neck pain, lumbago, stiff neck, hip pain, TMJ pain, lameness, soreness, and more. Since peripheral nerves wind around and through the hypertense muscles, "peripheral neuropathies" develop with complaints of sciatica, neuritis, neuralgia, carpal tunnel syndrome, and others. With very few exceptions (facial muscles), muscles cross movable joints. The abnormal hypertonicity produces sustained compression forces at these joints leading to "arthritic" complaints. Continuous pulling forces are produced at the origins and insertions where the muscles attach to tendons and bones, resulting in a constant strain of these tissues. These attachment areas, tendons, and periosteum are often more sensitive to pain than the muscles themselves, thus we hear about tendinitis, arthritis, rheumatism, fibrositis, bursitis, periostitis, and other vague enthesopathies which are extremely common. The inflammatory response initiated and sustained by the continuous sprain is often quite resistant to treatment and may become chronic.

Since muscles cross joints, this continuous contractile tension of muscle restricts joint mobility and produces a "fixation" in one or all planes of movement. If the muscular hypertonicity around a joint is asymmetrical, the uneven pull will result in a "malposition" of the involved bones. This "fixation/malposition" represents the physical signs of the chiropractic subluxation. The fixated and malpositioned bones, through stimulation of rich proprioceptive nerve beds in joint capsules and ligaments, add to the abnormal proprioceptive bombardment of the central nervous system described earlier. This further sustains the painful and dysfunctional scenario being considered here and increases the myriad of symptoms mentioned earlier.

My comments about treatment will be brief here. The joint fixation/malposition must be treated with chiropractic adjustments. The state of fatigue responds only to rest. Weakness, loss of endurance, and decreased flexibility respond to appropriate individualized therapeutic exercise programs. The hypertonic (cramped) muscles must be treated with appropriate physical measures to relieve spasm, (vapo-coolant spray and stretch, ultrasound, electrical stimulation, heat, massage, ice, and others). If the patient continues to practice his well-established habit of instinctive muscle tightening, all of the above treatment will fail to provide anything more than a temporary relief of symptoms, causing frustration for the patient and the doctor. In such cases, a serious educational program must be undertaken to train the patient to relax and control the level of tension in his muscles. This requires an instructor experienced in these techniques. A fast cure should not be expected in most cases, but a series of treatments should result in progress. It is my opinion that after the patient no longer complains of symptoms, periodic maintenance or preventative treatment sessions should be carried out to prevent the return of muscle cramp and to monitor the patient's progress in learning to keep his muscles relaxed.

It is understood that before using this approach exclusively, other sources of pathology have been considered and ruled out.

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