

Chiropractic Forensics Library

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**Modern Technologies that Validate Subluxation Based
Chiropractic**

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Why "Subluxation-Based" Chiropractic ?*A preface*

There is a great deal of controversy within the chiropractic profession around the terms "subluxation", "subluxation complex", "Chiropractic Subluxation", "Medical Subluxation", and of course the "Vertebral Subluxation Complex".

Is it no wonder, that the profession remains divided, apathetic and confusssssssssed. The division of chiropractors is the key ingredient in the soup mix packaged by chiropractic's adversaries. Prior to a discussion of "Outcome Assessment" technologies (evidence based chiropractic), I will define these terms as I view them from a forensic standpoint, so at least, in interpreting the data I will present to the reader, a commonality of terminology within the context of this article can be achieved.

Subluxation: A pathologic entity relating to the loss of juxtaposition between two articular surfaces (joints). This is a condition short of a dislocation and by definition, it can occur at any point in the body where articular surfaces present.

Vertebral Subluxation Complex: This is a complex biomechanical pathology which includes several separate yet related entities including, a) Vertebral mal-alignment with resultant loss of function (osseous component), b) Myopathology with concomitant muscle dysfunction (myopathic component), c) Neurologic Abnormality and Dysfunction (neuropathic component), d) Degenerative Changes to Tissue (histopathic component) and e) Loss or restriction of movement (kinesiopathic component)

It is this definition which best characterizes the chiropractic approach to spinal subluxation and its devastating consequence to humankind.

Chiropractic and Medical Subluxation: Myths. These are terms which have crept into the literature and used by educators to attempt to differentiate the two professions. I feel very little merit in further delineating these terms and support their non-use globally.

Therefore, this article will address an outcome assessment, evidence based approach at quantifying and monitoring the effects and the treatment of the chiropractic entity known as the vertebral subluxation complex.

Background: A number of years ago, I had the opportunity to diagnose and treat a small child who was involved in an automobile accident with potentially dangerous injuries. Following approximately 4 months of treatment, I was challenged by the insurance carrier as to my "rights" to treat as a chiropractor. a pediatric patient. Board Disciplinary action was threatened if I did not waive my fees, and the medical specialists who reviewed the case told the child's parents that I had treated the child for a condition that did not exist. They claimed that I was a fraud and a quack and recommended that they too, file charges against me.

Well, needless to say, the scope of chiropractic in California addressed the issue of treating children so there was no worry about that issue. The parents and I however, were very concerned about the accusations made by the insurance companies MD's. We simply could not fathom the conclusions they reached when there was significant case file documentation and xray plates nullifying their findings. A little investigation proved to be very helpful.

I learned that the carrier, while sending my patient file to these "specialists" had not requested the x-rays I took of the child. SO guess what? That's right, the orthopedist ordered a new set. Post Treatment, Lying Down, Pillow under the neck. Getting the picture? (excuse the pun)

During his physical examination, the neck was supple, range of motion was normal, ortho and neuro tests were non-conclusive but mostly within normal limits. The child was happy, well nourished, pain free and told the doctor it was "fun to get my back cracked!"

Sound like a routine post-treatment preinjury patient to you? Well the icing on the cake was that the medical films (remember they were taken recumbent with a pillow under the neck) were interpreted as normal, and this of course meant that there could never have been an injury. The case must then be fabricated and I was therefore, a criminal and that my manipulating this normal neck in a child so young (age 7) could have very serious consequences.

(SIDE BAR) I found it curious that the c-spine was read as normal, the exam as normal and yet they were concerned I had hurt the child's neck??

The Quest for Truth Well by golly, I was a board certified disability evaluator, had a great file on the patient and couldn't for the life of me determine how these MD's could be so wrong. I determined, that a call to the radiologist was the first place to start, and he agreed to review my documentation. All I sent to him was the actual x-rays (copies of course, never release your originals to anyone), and a computer report from the Spinal Health Data program. (x-ray Digitizing).

A few days later I received a call from the radiologist, who had just had a conference with the orthopedic pediatrician.

"I have to hand it to you doctor, you are right on target with the diagnosis and treatment of this child". I must admit, either your argument about the recumbent nature of our hospital films is the culprit or our analytical technique, but one thing is certain, your intake x-rays reveal a significant c-spine injury at C4-5, C5-6, and the treatment you rendered is amazing. This cervical curve now shows no evidence of abnormality. I must say, if all chiropractors are practicing the way you do I need to rethink my opinion of your profession.

WOW!

I couldn't believe my ears. Ultimately the three medical reviewers involved all sent letters of clarification validating my initial diagnosis and prognosis, and the parents received a handsome settlement for the injuries sustained which was put into a college saving account.

What was so different about what I did, compared to the rest of my colleagues that have similar stories? Its' simple. I had objective documentation not heresay opinion.

Within a few years (this is the mid 80's we are talking about), I got very involved with computers and technology that could validate my work as a DC. No one was ever going to accuse me of fraud again, nor deny my patients access to needed care. Damn the cost of technology- full speed ahead.

I began to review the literature. legal cases, my past patients files, interviewed the doctors in my state association who were "in the know" and came up with some interesting conclusions. The most significant of which, and a conclusion that is even more apparent today, was that the desk top PC was making this technology and opportunity available and soon the price of the technology would reach a point where all DC's cold afford it. I couldn't wait so I went into debt, but that was fine, because what a difference it made to my practice and my referral base. It didn't matter what insurance companies would pay, whether there were procedure codes or not, I now knew I needed the data, liked the data and could no longer accept practicing without it.

At the end of this paper I will be very frank about what has gone wrong with this technological application in our practice. This discussion should provide some insights into how we have damaged, misunderstood and perhaps abandoned the very tools demanded of us to progress as a profession.

For now I want to tell you what I did in this "evidenced based model" and how I feel the devices benefitted my patients.

First Step: X-ray Digitizing (Osseous Component)

I determined that detection and correction of vertebral subluxation was my principle role as a doctor of chiropractic. This of course, is verified by state and national laws. Regardless of personal opinions or widely varying ideologies, the osseous component of the VSC, a bone malaligned, can be seen on x-ray and should be analyzed - quantitatively.

This is the sole purpose of x-ray digitizing. It is the primary and foundational tool of objective choice. It is not however, a stand alone tool, as some have perpetuated. It is adjunctive in the overall diagnosis/analysis of patients.

I have published numerous paper on the history of spinography, the clinical utility, accuracy and legal aspects of the device so I will provide only a brief explanation of the procedure here. I f you would like more information on these papers or my objective outcome in clinical chiropractic manual, simply drop me an email.

Digitizing is performed by first making sure that you have superior quality x-ray films, taken at the correct focal film distance. The x-ray is then "landmarked" by placing very small dots at the corners of the vertebral bodies and the spinous ossification center (for AP views) or spinolaminar junction (for lateral views).

Next the film is secured by tape to a CAD digitizing tablet. These tablets are capable of measurements to .001", but standard default software reconciles these measurements to .1mm which is impossible by human hand/eye methods. Following a logical and simple sequence, each "dot" or landmark is input to the computer software and a graphic reconstruction of the patients x-ray for biomechanical assessment is provided for both analysis and hard copy printout.

I personally recommend that while valuable data can be obtained from sectional static and full spine radiology, end-point motion studies provide the ultimate in osseous component assessment.

The biggest problems with x-ray digitizing are the costs and the entrepreneurialism which have plagued this essential and important tool for years. Systems range from \$25,000 to \$40,000 and compared to the costs of other computerized diagnostic tools, this is excessive, placing systems far beyond the reach of the average clinician, especially in today's managed care environment.

As the cost of these systems is high, billings are high and entrepreneurial so called "service" companies have sprung up nation wide. In reviewing x-ray digitizing from some of these labs, the landmark placement and comparison studies performed are at best laughable and at worse pose significant malpractice liability for doctors sending to and relying upon these studies. Caution should be exercised if you are not doing digitizing yourself. When in doubt about any exam digitized, get the opinion of an expert in the field.

None the less, digitizing when properly performed and interpreted is an invaluable addition to the chiropractic practice and lays a solid foundation for determination of need for care, outcome of treatment and disability rating when appropriate. (see AMA Guides to the Evaluation of Permanent Impairment, 4th edition, Loss of Motion Segment Integrity)

Second Step: Comparative Muscle Testing (Functional)

The next procedure I became intrigued with was computerized comparative muscle testing. At the time there were only two of these devices available. one an inflatable air bag on a floor stand (CMT 1000) and the other a piston driven plate (DMG).

I felt that now that I had found a reliable, clinically useful tool in x-ray digitizing, a functional assessment device that could measure comparative strengths one side of the body to the other as well as between antagonists muscle groups would give me a "wrap" to my diagnosis. Well, as will become obvious from the rest of the paper, my "wrap" turned into the need for several other devices, but none the less, I had a great start in objectifying my patients need for care, and I had a much better handle on what to do, when to do it and how well I did.

I will not dwell on the actual technique of muscle testing with or without a computer in this paper. As with other objective devices, when performed properly with calabratable equipment, the findings can be relied upon, are graphic and provide wonderful file documentation concerning a patients status.

So now I could correlate a subluxation on x-ray with a supplied muscle group in an extremity. Correlations were high and I was asked to start teaching at seminars as my results invariably started ending up in the worst place they could for the era, high insurance settlements for PI patients. I think this in it's own right is the downfall of most of the technologies I describe. They were devastating to a carrier in a court of law.

Third Step: Thermography (Neuropathology)

Just say that word THERMOGRAPHY, and about as many definitions, ideologies, axioms are brought to mind as there are with the word subluxation. This is in my opinion, one of the greatest weapons in the war on disease that any clinician could ever use. It is also perhaps, the single, most devastating device at proving autonomic nervous system damage available, and I witnessed the highest awards ever by the evidence provided with this tool. The all out war against thermography has virtually ruined it as a court admissible tool, and that is unfortunate.

As a diagnostic tool, I simply viewed thermography as a device that could reliably tell me something about the neurophysiology of my patient as that physiology related to trauma and the VSC. AND IT DID!

Approved for workers compensation, medicare, general insurance - thermography quickly became my favorite instrument. I studied, published papers (even in peer reviewed European medical literature) and was amazed at this devices ability to differentially diagnose a host of ailments. From vascular damage in the lower legs mimicking a dermatomal low back related finding, to toxic headache as opposed to cervical spine related, this tool was incredible.

By measuring very fine differences in heat (.1C) and by providing highly graphic and objective data output that was easily explainable, thermography soon became a course in some chiropractic colleges, and remains to this day, a wonderful outcome assessment tool.

Pitfalls include tremendous adverse literature, on the whole taken out of context. Also vendor wars and competition damaged the procedure as did the use of untrained individuals in courts of law defending or promoting the procedure in litigation cases.

When utilizing appropriate equipment (unfortunately the cost exceeds 40K) and by following rigorous protocol, thermography remains a highly objective and useful clinical tool for the neuropathic component of the vertebral subluxation complex.

Fourth Step: Surface Electromyography (myopathology)

When SEMG first came on the scene, I had great doubt about its clinical utility. Several companies emerged rapidly. Failure of software and hardware components were high and then an all out war between some of the manufacturers occurred severely damaging the credibility of the procedure. As more data became available and refinement of the technology was in progress. I reached a point wherein I determined that a second look was in order.,

Here was a device that could accurately and reliably measure surface potentials from underlying paraspinal activity. Unlike needle emg, it was painless, safe, easy to interpret with new software that had been developed, and patients could see dramatic changes in their condition.

Finally, motion or "dynamic" SEMG capabilities were developed and I was now convinced of its clinical utility. I was able to measure electrical activity, without pain, and compare both sides of the spine at the same moment in time. The myopathic component had been added to my armamentarium,, and a new addition to my "wrap" was in hand.

SEMG when used correctly provides valuable data that is useful in the day to day practice environment. It is inexpensive relative to other devices. It is easy to perform and the new software provided by most manufacturers is highly graphic and exciting. Once again, it is only an adjunctive tool, as there are no stand alone(s), but it gets high overall marks for clinical utility. Once we get over the SEMG vendor

wars, the procedure should become a mainstay in chiropractic practices everywhere.

Fifth Step: Computerized Inclinometry (kinesiopathology)

What would appear to be one of the most obvious devices, was actually one of the very last to be perfected, range of motion inclinometry.

I had the most wonderful opportunity to be invited to Portland Oregon by John Gerhardt, MD, one of the contributing authors to the range of motion segment of the AMA Guides. Dr. Gerhardt is an incredible human being, and I was so honored to be invited for a day of personal training in inclinometry.

I began to think about the missing link in the "wrap". If I had a bone out of alignment on an x-ray which was causing high electrical activity in a paraspinal muscle group, and observable heat was measured in the pathologic region of the spine in question, wouldn't a decrease in range of motion be consistent with the vertebral subluxation complex?

I had to have one! The software amazed me. It spoke to you for positioning the patient. It wouldn't allow a test to be saved or printed unless it was deemed reliable, and then it automatically produced a report based on the AMA Guides. I was in heaven.

Using these devices over the years has given me a wonderful opportunity to view the living dynamic essentials of the vertebral subluxation complex and its change or lack of change through chiropractic care.

In this world of evolving managed care, perhaps the financial incentives some have used in the past will be replaced with the determined utilization of these devices where they fit best:

Improved patient diagnosis and care

Decreasing cost of said care

and validating the chiropractic profession, objectively, quantitatively - once and for all!

Besides, that's why I got into this "stuff" in the first place.

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