

Critical New Developments in the Safety and Efficacy of Chiropractic Treatment, Part I

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A paper titled "Chiropractic Manipulation: Reasons for Concern?" recently called attention to three cases of serious complications arising from chiropractic treatment.³ The authors' concerns seemed to focus on the risk/benefit ratio: Was the risk of these serious complications justified by the potential benefits? Their conclusion was that (a) the benefits of chiropractic are not well-established; (b) the "safety profile" has been explored by only one study (which, incidentally, declared it safe); and therefore (c) a "system to signal a risk alert" should be implemented. Although they did not expound on what might comprise this risk alert system, the paper is important because it is emblematic of the new, infinitely more subtle but very effective method of profession-sniping and turf-fighting.

In the past, professional organizations and associations such as the AMA could boldly exhort their members to refrain from professional allegiance with chiropractors. But they soon realized those tactics ran them afoul of the Sherman antitrust laws. Enter the new wave of antichiropracticism: published papers appearing in peer-reviewed literature, calling attention to the risk of spinal manipulation. Unfortunately for many people, if it is published, it must be true. Conveniently, both authors and editors are indemnified against recrimination or legal action. But the effects are corrosive and wide-sweeping, as we have seen. As a result of a few highly celebrated cases of stroke in Canada and the U.S., many patients today are told by their medical doctors, "It's OK to go to the chiropractor, but don't let them adjust your neck." Next, will we see legislation to exclude cervical spine manipulation?

How should we react to this form of attack? While it would be irresponsible to simply turn the other cheek, I think the appropriate way would be to have our own scientists reviewing this literature and writing reasoned and appropriate letters to the editors of the journals that publish this genre of literature. Those letters often do get published and they do have a mitigating effect. Our professional organizations, unfortunately, tend to take a different approach. But it also is important for field practitioners to genuinely understand this literature because they are at the point where the rubber hits the road.

The purpose of this two-part editorial is to introduce two recent papers with which all field practitioners should become familiar. They provide authoritative and scientific evidence that chiropractic has been clearly demonstrated to be not only safe, but also one of the most effective treatment methods for mechanical neck pain and chronic spine pain, contrary to the hollow imputations of Gouveia, et al.³ (And before I leave the topic of Gouveia, et al., we have written to the editor, and I will outline the essential and potential flaws in their logic.)

First and most critically, they did not follow up on any of these cases to determine whether the chiropractors were actually fully trained DCs. There are still many non-DCs in the world who practice in countries where chiropractic is unlicensed or unregulated, calling themselves chiropractors. In England, they have only recently dealt with this problem by grandfathering them

into the NHS. False attribution or information bias is rampant in this literature. Investigating published cases of "chiropractic stroke," we often found that the "chiropractor" was actually a medical doctor, barber, masseuse, spouse or even the victim.

Delays in onset of symptoms in some cases make attribution implausible.⁴ The authors also did not attempt to determine whether the subjects had symptoms of these conditions before going to the therapist. The second "error" was one of omission: an incomplete literature review. They found little support for chiropractic's efficacy and safety only because their search methodology was somehow faulty. Third, they made a fortiori reference to a flawed California survey of neurologists that relied only on the neurologists' recall.⁵

In truth, in any risk/benefit analysis of spine treatment, the medical professions would love to measure up to that of chiropractic, as the articles of this two-part series will demonstrate. Consider that one of the most benign treatments that medicine has for neck or back pain - nonsteroidal, anti-inflammatory drugs - literally kills 3,300 people every year and sends another 44,000 to the hospital with serious gastrointestinal complications, according to the CDC. And that doesn't begin to consider the increased risk for myocardial infarction (MI) with the Cox-2 inhibitors; the risk of addiction to narcotics; accidents and falls due to sedative effects of a variety of drugs; etc. Even ibuprofen nearly doubles the risk of MI. And recent studies have shown that medical treatment for chronic spine pain is not effective in the short or long term, while chiropractic is the most effective (compared to medicine and acupuncture).^{2,6}

I served as an expert panelist on a RAND study several years ago. We published that the risk of serious complications arising from spinal manipulation ranges from one in 400,000 to one in 1,000,000.¹ That stands as probably the most authoritative reference for risk and shows it to be lower than virtually any standard medical procedure or intervention for spine pain management. But in professional turf battles, people who live in glass houses do sometimes throw stones. If you would like a copy of our letter to the editor of *Clinical Neurology and Neurosurgery*, please e-mail me at drcroft@srisd.com.

New Literature

With the Gouveia, et al., paper as a lead-in, let us turn to a new paper that all DCs should acquire, read and keep nearby: Gross AR, Goldsmith C, Hoving JL, et al. Cervical Overview Group. Conservative management of mechanical neck disorders: a systematic review. *J Rheumatol*, 2007;34(3):1083-102.

OBJECTIVE: To determine if conservative treatments (manual therapies, physical medicine methods, medication, and patient education) relieved pain or improved function/disability, patient satisfaction, and global perceived effect in adults with acute, subacute, and chronic mechanical neck disorders (MND) by updating 11 systematic reviews of randomized controlled trials (RCT).

METHODS: Two independent authors selected studies, abstracted data, and assessed methodological quality from computerized databases. We calculated relative risks and standardized mean differences (SMD) when possible. In the absence of heterogeneity, we calculated pooled effect sizes.

RESULTS: We studied 88 unique RCT. The mean methodological quality scores were acceptable in 59% of the trials. We noted strong evidence of benefit for maintained pain reduction [pooled SMD -0.85 (95% CI -1.20, -0.50)], improvement in function, and positive global perceived effect favoring exercise plus mobilization/manipulation versus control for subacute/chronic MND. We found

moderate evidence of long-term benefit for improved function favoring direct neck strengthening and stretching for chronic MND, and for high global perceived effect favoring vertigo exercises. We noted moderate evidence of no benefit for botulinium-A injection [pooled SMD -0.39 (95% CI -0.125, 0.47)]. We found many treatments demonstrating short-term effects.

CONCLUSION: Exercise combined with mobilization/manipulation, exercise alone, and intramuscular lidocaine for chronic MND; intravenous glucocorticoid for acute whiplash associated disorders; and low-level laser therapy demonstrated either intermediate or long-term benefits. Optimal dosage of effective techniques and prognostic indicators for responders to care should be explored in future research.

Comments

This is a very in-depth overview of the level of evidence supporting the various types of management for mechanical neck disorders (MND). It included all major literature databases, including chiropractic and the Cochrane Register of Controlled Trials (Central). This is the largest and most up-to-date analysis available. The levels of evidence were broken down to "strong evidence," "moderate evidence," "limited evidence," and "evidence of no benefit." Here is a summary.

Strong evidence: Multimodal approaches, including stretching/strengthening exercise and mobilization/manipulation for subacute/chronic MND, neck disorder and headache (NDH), and neck disorder and radiculopathy (NDR), reduced neck pain, improved function and resulted in favorable global perceived effect. Interestingly enough, that's all there was under this highest level of evidence. Conspicuously absent: medical or pharmaceutical therapies of any kind.

Moderate evidence: Strengthening and stretching; IV glucocorticoid for whiplash; epidural injections for pain reduction and improved function in neck disorder (although my medical colleagues, Schofferman and Bogduk, disagree⁷). This is all the "medicine" subcategory of evidence. Also included in this general heading was low-level laser therapy (830-904 nm) for pain and functional improvement in the intermediate period for MND. Electrotherapy, although this was an immediate effect and not maintained into the short term. Intermittent traction for MND, NDR and degenerative changes; short-term effects only. Acupuncture for MND and NDR, but short term only. Another issue we won't discuss in this editorial is cost/benefit ratio, but the typical cost for three epidural steroid injections is \$12,000, with only a relatively modest benefit.

Limited evidence: Under this level, we find repetitive magnetic stimulation, traditional Chinese massage, orthopedic pillow and IM injection of lidocaine.

Evidence of no benefit: Under this opprobrious category of shame, we find that home exercise (almost certainly because of noncompliance), hot packs, electromechanical stimulation, ultrasound and combinations of manipulation/mobilization/modalities do not relieve chronic pain or improve function in MND. Others that do not aid in pain reduction: medicines (notably botulinum-A), morphine added to epidural injection, manipulation alone, various massage techniques, laser for myofascial pain, IR light, static traction, spray and stretch, electrotherapies, galvanic current, iontophoresis, magnetic necklace, ultra-reiz, oral splint, neck school; for whiplash, advice to rest for whiplash, advice to activate, and advice on pain- and stress-coping skills.

The significance of this document is huge. Gross, et al., have been doing this kind of thing for a while and serve as pretty much the definitive word on these subjects. In fact, one of the authors (Peter Aker) was also part of the RAND study I referenced earlier. Here is the take-home point: If, as a practitioner, your management comes under the scrutiny of a utilization review board or

individual peer reviewer, having this document may be helpful in justifying your care. In the past several months, I have received quite a few reviews written by this kind of individual from all over the U.S. Typically, the reviewer has seen only the treating doctor's records and is generally critical that the treater's diagnosis is not based on valid tests, notes are inadequate, various tests are invalid and there is no evidence to support the various therapies applied (including, in some cases, manipulation and various other modalities). They tend to cite a number of obscure government data sources and dated literature, entirely outside the area of the health care system of the practitioner in question. These citations are perhaps conveniently difficult to find and obtain.

The paper by Gross, et al., should aid in disabusing this practice of selective citation and obfuscation. In part two, we'll look at another very important document that reaches beyond the rigid review methods employed by Gross, et al., and offers up even more useful gems. In the meantime, balancing the issue with facts is the easiest and most effective way to work with intransigent reviewers or insurance representatives who insist on relying on outdated theories, misinterpreted literature, industrially inspired dogma, or patent junk science.

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