

## Montreal 1994: ABS Meeting Nets High Scientific Yield -- Part I

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I remember different meetings of the American Back Society (ABS) for different reasons. Some took place in great cities or great hotels, and others did not. Some meetings were dominated by well-known back superstars, and others featured lesser-known individuals. There was the meeting that witnessed an interesting interdisciplinary confrontation, and another which fostered an unexpected meeting of the minds. I will remember this particular June 1994 meeting of the American Back Society in Montreal as one that generated a particularly high scientific yield. At any one moment of my own professional life, there are always a few key issues storming about my brain. It seemed that every one of them came up during this meeting: outcome assessment measures, the function/structure debate, cost-effectiveness, the place of manual medicine, fibromyalgia syndrome, etc. There was also an interesting dose of internecine struggle, fueled by ongoing controversy over the Manga report and the presence of the recently invented orthopractors.

### Structure and Function

The more traditional (and usually older) medical back doctors tend to view the cause of back pain as a pathoanatomic insult, even when it cannot be clearly identified. They say things like "low back pain is a symptom, not a diagnosis" (Simmons). The more avant garde, and usually younger medical doctors tend to see back pain as a functional disturbance, and do not feel the need to arrive at a specific, mechanical diagnosis to initiate clinical care. They say that in the absence of objective findings the only fair diagnosis would be "low back pain of non-specific or unknown cause" (Aronoff).

Both the more traditional and more modern medical doctors would agree that psychosocial factors often loom paramount. It's in the cases where there is no reason to consider psychosocial factors primary that the disagreement sets in: back pain as diagnosis vs. back pain as symptom. It's a little different from the otherwise similar polarization that we see in chiropractic, because the traditionalist subluxation qua structural lesion view is usually incompatible with ascribing much significance to factors such as somatization and ADL under any circumstances. I remember as a chiropractic student being solemnly informed that according to one the Palmers, although heavy drinking may directly injure the liver, even in the absence of a specifically liver-related vertebral subluxation, there would still have to be some spinal subluxation somewhere that had driven the man to drink in the first place.

It is interesting to see how medical doctors handle the now well-known poor correlation between images and patient symptoms. They conclude that images are only useful when they correlate with other clinical findings, and presume that the pathoanatomical, structural causes of back pain are often non-radiographic, greatly modulated by histological and chemical influences. Chiropractic, on the other hand, seems more easily prepared to give up their historical grounding in the structural basis of patient symptomatology. I am not sure if this makes us more honest as clinicians, or excessively rash in leaping to judgment before all the evidence is in.

## Seasoned Response to Muckraking

A few of the medical doctors noted in passing the recent ABC "20/20" segment decrying the hazards of the pedicle screw surgical technique for treating spinal instability. They were very matter of fact about it -- no sense of outrage, no wounded vanity, no defensiveness. Their only purpose in even mentioning the negative publicity was to provide an interesting context for the clinical thrust of their talks, which concerned the avoidable adverse consequences of pedicle screw fixation techniques. There were no calls for satisfied surgical patients to mail testimonials to politicians, no showing off of dramatic open letters published here and there. No one boasted of full page ads in USA Today, and no press conferences were called to denounce the evil tabloid media. How refreshing! If I may summarize the posture assumed by media-muckraked medical practitioners: to the extent the shoe fits, wear it; to the extent it doesn't, don't give the truth to the lie by over-reacting. Very judicious.

## Excessive Legalism in Workers' Comp.

Dr. Termel provided an overview of how the workers' compensation program is administered in the province of Quebec. The problem that has been identified is not merely the increased number of back injuries, but the increased rate of chronicity of injured workers, both with and without rehabilitation. A major part of the problem was that an overly legalistic approach had taken precedence over the fundamental aim of getting the worker back to work as soon as possible. This approach delayed treatment in some cases by an astounding 600 days. In fact, this typical delay in entering treatment is seen as more problematic than the injury itself, in terms of what runs up the long term cost.

## Motivation and Return to Work

Dr. Miller covered some well-trodden territory on what are the best outcome measures for predicting who will respond to treatment for back injuries. There were no surprises in his talk: motivated individuals return to work or competitive sports more rapidly; early intervention is vital. Highly compensated workers have a negative incentive to return to work rapidly. It is a bad idea for a doctor to communicate to the patient the suggestion that he or she will not be able to return to work, due to the tendency for this to become a self-fulfilling prophecy. When injured workers are tested, what predicts return to work are not the values recorded on the diagnostic machines, but the effort expended, as estimated subjectively by observers. Dr. Miller left an indelible impression that deep down, he and many other providers do not think it makes much of a difference what kind of treatment is afforded -- motivated people will do well, poorly motivated people will not, and that's about it. He quoted an unnamed "authority" who had opined that "a warm poultice of camel dung" would be as effective a treatment as well as anything else.

## ULTT (Upper Limb Tension Test)

The SLR is considered the low-tech gold standard for the demonstration of lumbar IVD syndrome. Over the last 15 years, a concerted effort has been made to develop a similar orthopedic test for the cervical spine. Doreen Killens, PT, brought us up to date on these efforts. The trick is to find the patient position in which longitudinal traction on the cervical nerve roots would reproduce shoulder girdle and more distal symptoms. Ms. Killens reminded us that the CNS and the PNS are not so clinically distinguished as we seem to think they are -- in particular, she reviewed the mechanism of double crush syndrome, in which axoplasmic flow interruption in one potentiates the compression pathology which arises in another area. Approximately 3/4 of carpal tunnel sufferers have demonstrable cervical involvement.

The first ULTT (upper limb tension test) described had the supine patient positioned as follows:

- shoulder girdle depression
- glenohumeral joint abducted to 110 degrees, 10 degrees posterior to the coronal plane
- glenohumeral joint externally rotated
- forearm supination
- elbow, wrist, and finger extension
- contralateral head and neck lateral flexion

Subsequent refinements of the patient position have permitted discrimination of medial from ulnar nerve trespass. Since the patient positioning described could produce distal symptoms resulting from peripheral entrapment as well, the differential diagnosis of nerve root tension entails amelioration of these distal symptoms, when the depression of the shoulder girdle is removed from the patient setup. An abnormal orthopedic result is antecubital pain and posterior arm pain radiating to the radial aspect of the hand, with tingling of digit 1-3. None of these would be ameliorated by elevation of the shoulder girdle. The speaker noted that authors Bob Elvey and Butler are prominent in the literature.

### Rectus Atrophy in Whiplash

Many investigators have sought ways to demonstrate objective evidence in "soft tissue injury" cases, especially among patients that fail to improve. Osteopath Philip Greenman proposed a novel method of doing so, born of research related to his observation that although most of his whiplash patients did improve under treatment, especially with muscle energy technique, some would not. When subjected to proton density weighted MRI examination, it was unexpectedly noted that many had very poorly visualizable suboccipital muscles -- not all of the muscles, but specifically the rectus capitus posterior, minor and major. With the proper form of MRI imaging it was possible to demonstrate that they had atrophied to a fat density. How this change comes about, and in what precise way this is associated with failing to respond to treatment, is unclear at this time.

Microdissection of cadavers showed that it was not possible to separate the affected muscles from the posterior atlanto-occipital membrane, suggesting a possible role for them: during extension of the cervical spine, these muscles could possibly prevent movement of the membrane toward the facet joints. In at least one tested subject, abnormal movement was demonstrated. Following his talk, I obtained the following reference from Dr. Greenman: Hallgren, Greenman, and Bechtien, Journal of Clinical Engineering, Sept/Oct 1993.

### Screening the Problem Back

A team featuring PTs Dalzell and Killens was asked to come up with a screening procedure for assessing the functional status of physical therapy patients with problem backs. They were asked to identify the tests and observations which both demonstrated good interexaminer reliability, and were highly discriminatory for a variety of presenting complaints. Of 108 items assessed, which included postural evaluation (standing and sitting), range of motion analysis, hip dropping, SI motion tests, ortho-neuro testing, passive intervertebral motion assessment (i.e. motion palpation, hip movements, muscle flexibility (SLR), isometric strength of paraspinal and abdominal muscles, and endurance capacity (number of reps to fatigue of low back muscles), here are the 10 or so best tests that emerged (as best as I could jot them down in the dark!):

- Active lumbosacral motions: flexion/extension (but NOT lateral flexion or rotation), pelvic tilt,

hip-dropping

- Conditioning measures: hamstring and quad flexibility, abdominal muscle eccentric contraction and contraction to capacity
- Hip movements: internal/external rotation, SLR, Ely's test

The following reference was provided: IRSST Scientific Review, 1991.

#### Abuse of NSAIDs

The overuse of NSAIDs, and persistent underestimation of their toxic effects (especially gastrointestinal) have become major public health issues in North America. Some 20 percent of NSAID takers are asymptomatic, and yet can be shown through endoscopy to have lesions. In the U.S., on any given day 13 percent of individuals older than 65 take a prescription NSAID. Dr. Hyman Tannenbaum provided an overview of the gastroduodenal side-effects of NSAID medication, explaining that as acids, many of them are directly erosive of the mucous membrane. Furthermore, as prostaglandin inhibitors, they simultaneously decrease the protective effects of mucous production. Some less acidic NSAIDs are coming in, and also some strategies for concurrent medications that reduce their erosiveness -- of course, some of these in turn have side-effects, such as diarrhea and worse.

In a somewhat related vein, the current issue of JMPT (17)5 includes the article, "Use of spinal manipulative therapy in the treatment of duodenal ulcer: A pilot study," by MDs Pikalov and Kharin. The study revealed accelerated healing of duodenal ulcers in manipulated patients compared with a control group receiving conventional pharmacological treatment.

#### Pain in Microsurgical Decompression

Dr. Kuslich was involved in a study in which awake patients undergoing microsurgical decompressive surgeries were questioned about the pain that could be evoked by stimulation of the various exposed tissues. A technique called "progressive local anesthesia" was employed, with the operative procedure performed under the surgical microscope. An index was developed called the "tissue sensitivity index." The following tissues were found to be insensitive to pain: subcutaneous fat, fascia, spinous processes, lamina, facetal bone, synovia, and nerves. Somewhat sensitive: the anterior and posterior longitudinal ligaments, and the lumbar fascia. Moderately sensitive: the joint capsule, interspinous ligament, and muscle. Very sensitive: supraspinous ligament, the central lateral annular fibers (not the pulposus), the vertebral endplate, and especially the nerve roots that were stretched, compressed, and/or inflamed.

The disc caused pain in 1/3 of the patients, but the outer annulus only. It was especially pain-provocative to stimulate the nerve and the annulus together; indeed, that turned out to be the single best way to reproduce sciatica. In this study, epidural scars were not themselves pain sensitive, but were thought to tether the nerve roots, which are. The reference provided by Dr. Kuslich reference is *The Microsurgery of the Lumbar Spine* (Williams and McCullogh), chapter 1, pub. Aspen).

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Editor's Note: Part II of Dr. Cooperstein's report will appear in the September 1, 1994 issue of *Dynamic Chiropractic*.

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