Dynamic Chiropractic

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American Back Society meetings remind me of the alien bar in the first Star Wars movie: All of the characters look and talk weird, but nobody seems to notice. Maybe it's because they're all blitzed on the same drink; more likely, no one notices the generalized weirdness because they know it can be very dangerous to look up when an alien walks by.

Anyway, at ABS meetings, I almost always seek out the aliens and avoid the chiropractic workshops, so I can return to earth (or at least to *Dynamic Chiropractic*) and say it was a wild ride. I dodged meteors at planet Osteopathy, passed through a black hole at space station Surgery, and traveled at warp speed through the Physical Therapy asteroid belt. And I sampled a new energy bar that tasted like desiccated compost.

At some point, a weird psychology takes hold, whereby anything new seems better than everything old. For researchers and clinicians, it is what the placebo effect is for patients: Anything new gets a good result, at least for a while. How quick we chiropractors are to discount the results of dozens of RCTs showing manipulation to be safe and effective, whenever a technique alien is beamed up!

The X-STOP Revisited

To tell the truth, I was not going to cover Dr. Hsu's talk on the X-STOP, an interspinous decompression device designed to treat neurogenic claudication related to spinal stenosis, simply because I have covered it before.[1,2] However, while I was working on this article, I read a publication by Murphy, et al.,[3] reporting "clinically meaningful" results treating spinal stenosis nonsurgically. In this practice-based research, all patients meeting the inclusion criteria received distraction manipulation (as described by Cox), neural mobilization (essentially, nerve stretching) and exercises taught to the patient that mobilized the lumbar spine and the involved nerve root(s).

The X-STOP is a titanium implant used to create interspinous process distraction, so as to maintain spinal flexion. Insertion of the X-STOP is an outpatient surgical procedure, using local anesthesia and requiring less than one hour. A recent randomized trial conducted by Zucherman, et al.,[4] found that patients receiving the X-STOP achieved better clinical results than a control group receiving epidural steroid injection, analgesics, and physical therapy: 45.4 percent improvement compared to 7.4 percent improvement in symptom severity scores using the Zurich Claudication Questionnaire.

On the other hand, Wiener wrote a letter to the editor[5] detailing the reasons why an FDA panel reviewing the device (including Zucherman's data) found it "not approvable," meaning this FDA panel thought the data did not support using the X-STOP at this time.

The study by Murphy, et al., used the Roland Morris low back pain and disability instrument and a three-level numerical rating scale for pain intensity, rather than the Zurich Claudication Questionnaire used by Zucherman's group. This complicates comparing the relative outcomes. On the other hand, the improvement the Murphy group saw in nonsurgical patients appeared more

substantial than that reported for nonsurgical patients in other studies. Thus, the combination of treatments used by Murphy, et al., may improve upon the outcomes obtained by other conservative treatment approaches, such that surgical interventions (including the X-STOP) may be made less necessary for some patients.

Haldeman on Practice Guidelines

As he has been wont to do in recent years, Dr. Haldeman spoke on the advent of practice guidelines. How does a skeptical and reluctant clinician get along with them? First, recognize that practice guidelines are here to stay. Second, don't get angry about guidelines, and then wind up having ignored the basics and stopped thinking. Third, understand the criteria for acceptable evidence-based guidelines.

More in the program syllabus than in his talk, Dr. Haldeman stressed the importance of clinicians being proactive by being aware of and modifying their practices in accordance with guidelines, taking into account their inherent limitations. For one thing, guidelines may not address all of the questions physicians and patients may have prior to the initiation of care. Furthermore, they rapidly become outdated, and can't always be revised, published, distributed and implemented in a timely manner. Therefore, in order to provide truly evidence-based care, clinicians must become aware of relevant published studies'*before* they have been incorporated into guidelines.

As if remaining current weren't daunting enough, it is also incumbent upon clinicians that they *participate* in the process of guideline production, to ensure that they adequately address common clinical situations and are not overly critical of current practices. Clinicians should attend more meetings and learn to critically analyze the literature, if they don't already have the requisite skills to do so. Chiropractors in particular will find many helpful resources at www.chiroevidence.com, the home page of the Institute for Evidence-Based Chiropractic. In addition, the Council on Chiropractic Guidelines and Practice Parameters keeps us abreast of its best practices initiative. [*Editor's note:* For more information on this ongoing initiative, please read the article on page 1 of this issue.]

The Artificial Disc: Clinical Experience at the St. Mary's Spine Center

Since I already commented on the 2005 ABS report on the X-STOP surgical device, I thought it would be consistent to comment on this year's presentation on the artificial disc, which I also have discussed in previous columns.[1,6] The clinical context in which the artificial disc seems viable, in spite of the controversy often surrounding it, is that conventional spinal fusion surgery has its own set of problems: The studies do not bode well for it when compared with less invasive methods.

Early artificial discs, dating to the 1960s, failed due to endplate collapse. The 1980s Acroflex was withdrawn from the market due to bad reactions to the hexene-based polyolefin rubber core it uses. The primary discs out there today include the Charite Link III, an unconstrained prosthesis that depends on the body's soft tissues to limit movement. Insurance companies are fighting implementation, and it is FDA-approved only at one level. The Prodisc device is constrained, with a ball-and-socket joint, allowing translation, even though this is not a normal spinal motion. At St. Mary's Spine Center in San Francisco, good outcomes were reported with the Prodisc in more than 90 insertions, although the benefits obtained are not as high as those reported by French investigators. The Maverick device uses a constrained ball-and-socket design, featuring metal on metal, which in itself raises some questions among the surgeons. The Flexicore, currently being used at St. Mary's Spine Center is completely constrained, a "captured" ball-and-socket device. It is used for both single and double levels. Cervical disc replacements are just starting; so far, the data are quite varied. As always in the case of surgery, the key for successful use of this technology is

patient selection.

Lee on the Sacroiliac Joint

Another year has gone by and I still have not done what I promised myself to have done within one year: really figure out what Diane Lee and the Vleeming group[7] are talking about in their research on the sacroiliac group and clinical management of sacroiliac conditions. I have reported on two previous Lee presentations in *Dynamic Chiropractic*.[8,9]

According to Lee, the sacroiliac joint is capable of 4-6 degrees of angular motion and 2-3 mm of linear translation. (Her estimate for angular motion seems a bit high.[10]) The major ligaments of the pelvic girdle can control this motion, but only when the SI joint is in the close-packed position, entailing posterior innominate rotation and nutation of the sacrum. At other times, such as during movement, it takes coordinated muscular function to stabilize the sacroiliac joint, principally the transversus abdominus (TrA) and the deep multifidus (dMF) fibers, right and left. Contraction of the dMF compresses the ilia posteriorly; contraction of TrA compresses the ilia anteriorly. Failure of "load transfer" may lead to excessive SI motions, as may be evidenced by sudden giving way (presumably, Dorman's "slipped clutch" syndrome[6]). Failed load transfer also may lead to exaggerated bracing activity by other muscles, such as in the rib cage or low back, raising intra-abdominal pressure and creating symptoms such as urinary and/or fecal incontinence.

The supine active straight-leg test has been found to be reliable, sensitive and specific for pelvic girdle pain after pregnancy, and may be found useful in other circumstances. (Although the interpretation is most different, the test is like a supine version of the Thompson technique's "sacral leg check.") Difficulty in raising one leg that may be suppressed through the therapist's compression of the ilia suggests dysfunction of the TrA, whereas suppression of difficulty resulting from the therapist's approximation of the PSISs suggests dysfunction of the dMF.

A positive active straight-leg test is followed by a confirmatory test in which the patient is asked to lift the vagina/testicles while the examiner palpates medial to the ASISs (for TrA function) and then bilaterally near the lower lumbar spinous processes and medial sacral crest (for dMF function). Asymmetry in left/right muscle function is not only manually palpable, according to Lee, but also may be visualized using real-time ultrasound imaging.

Treatment requires retraining the patient to move such that all of the muscles involved in stabilizing the SI joint during movement are activated sufficiently and at the right time, so that load transfer is optimized, and so that there is harmony between the need for mobility and for stability (yes, all that Janda stuff).

I attended Ms. Lee's afternoon hands-on presentation as well. Arriving at the meeting room fairly early, I found her alone, making sure her PowerPoint slides, including several with long video clips, would work. Introducing myself, I told her that I always attended her workshops, but that to incorporate her analysis and methods into my clinical practice and teaching could very well require that I attend a "technique seminar," as we call it in chiropractic. She laughed at my suggestion, but went on to confirm it. I told her, as an advocate of manipulation in many low back cases that she treats differently, that I felt ill at ease in Janda's universe of functional disability and muscle re-education. Very reassuringly, she let on that manipulation quite often does get the job done for her - indeed, that was the crux of one of the three cases she was to present at this work shop - but that she was glad to have expanded her therapeutic repertoire to include functional examination and related treatment methods.

The Functional Anesthetic Discogram

Dr. Alamin, after reviewing the controversy that continues to surround the discogram, described a recent enhancement called the functional anesthetic discogram (FAD). Briefly, critics have stated that provocative discography (as I described it in last year's ABS commentary) lacks specificity and thus validity. In provocative discography, reproduction of the incoming pain during injection is judged a positive for discogenic pain. Thus, a positive test result evokes pain like the usual pain, which is more intense than would be the case in normal subjects; it is analogous to manually palpating for tenderness. Along with MR, it has become the gold standard for proving a surgical lesion.

The FAD first takes subjects tested with a conventional discogram and subjects them to another test. The study patient is asked to engage in physical activity that reproduces the incoming pain, and then receives either anesthetic solution or saline injection. Reduction in pain is defined as a positive FAD; no change is a negative FAD. Thus, FAD is an anesthetic rather than a provocative test. In the study described by Alamin, the results of FAD were not identical to provocative discography: Fifty percent of the patients received a different diagnosis using the functional test, compared with discography. Surgery (fusions) based on these altered diagnoses is so far showing good Oswestry and VAS improvements, suggesting the use of FAD may result in improved patient selection. A search on FAD found nothing in the PubMed database and just one Google comment on a Stanford Web site[11] that perhaps declares prematurely: "Using studies not done elsewhere, such as the functional anesthetic discogram used to pinpoint the source of pain, Stanford physicians focus on the proper initial execution of surgery and long-term post operative follow up to ensure the best outcomes possible." I hope we'll see at next year's ABS meeting if that is true.

Editor's note: Part 1 of this article appeared in the April 10, 2006 issue. To review Dr. Cooperstein's previous reports on the American Back Society Meeting, visit his online columnist page (www.chiroweb.com/columnist/cooperstein) and enter "ABS" in the search box.

References

1. Cooperstein R. American Back Society 2004, part II. *Dynamic Chiropractic* 2005;23(15).
2. Cooperstein R, Morschhauser E. ABS meets in Orlando, part II. *Dynamic Chiropractic* 2002;20(14):16, 26-29.
3. Murphy DR, Hurwitz EL, Gregory AA, Clary R. A non-surgical approach to the management of lumbar spinal stenosis: a prospective observational cohort study. *BMC Musculoskeletal Disorders* 2006;7(16):electronic access.
4. Zucherman JF, Hsu KY, Hartjen CA, Mehalic TF, Implicito DA, Martin MJ, et al. A multicenter, prospective, randomized trial evaluating the X-STOP interspinous process decompression system for the treatment of neurogenic intermittent claudication: two-year follow-up results. *Spine* 2005;30(12):1351-8.
5. Weiner BK. Interspinous process decompression system (X-STOP) device affords superior outcomes and equal safety to nonoperative therapy. *Spine* 2005;30(24):2846-7.
6. Cooperstein R, Morschhauser E. The ABS meets in Orlando, part I of II. *Dynamic Chiropractic* 2002;20(12):1, 16, 20.
7. Vleeming A, Mooney V, Dorman T, Sniders C, Stoeckart R. *Movement, Stability & Low Back Pain*. New York: Churchill Livingstone, 1997.
8. Cooperstein R. American Back Society Meeting: Vancouver, Dec. 7-9, 2000 (Part I). *Dynamic Chiropractic* 2001;19(4):10-11, 32.
9. Cooperstein R. American Back Society 2004, part I. *Dynamic Chiropractic* 2005;23(7):30-1.
10. Cooperstein R, Lisi A. Pelvic torsion: anatomical considerations, construct validity, and chiropractic examination procedures. *Topics in Clinical Chiropractic* 2000;7(3):38-49.
11. Stanford web site. Accessed May 8, 2006.