Dynamic Chiropractic

MUSCULOSKELETAL PAIN

Cervical Radiculopathy: A Documented Chiropractic Clinical Approach

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I hate these cases: The patient presents with unilateral arm and/or interscapular and/or lower neck pain, usually worse with lateral bending to the involved side. They often can achieve some relief by putting the affected arm on top of their head. The worst part is that they frequently cannot comfortably lie down, so they can't sleep well. Add sleep deprivation to the usually severe pain, and you have a very unhappy patient. These are often cervical radiculopathy cases, frequently with imaging evidence of either lateral canal stenosis or a herniated disc. The patient also may have some degree of cervical spinal cord compression. I have seen many of these cases, and most have resolved with chiropractic clinical management, including (but not limited to) cervical manipulation.

Previously, I've just had my own cases to go on, clinical experience, and other doctor and patient anecdotes. More recently, Donald Murphy, DC, DACAN, has published three papers on cervical radiculopathy in respected peer-reviewed journals.[1-3] Two of the articles are descriptions of case series. The first article is on management of cervical radiculopathy; the second on manipulation in the presence of cervical spinal cord compression. These papers change the evidence base for what we do for these conditions and guide us toward specific diagnostic protocols and therapy. Of the patients in this series, 89 percent described their improvement as "excellent" or "good." The number of treatment visits ranged from four to 24, with an average of 12.

Most of my readers know I am an opinionated writer. In this article, I am going to attempt to mostly get out of the way and summarize Dr. Murphy's approach. When I put in my 2 cents, I'll clearly identify my opinion.

Dr. Murphy's approach is clearly laid out in his many papers and in his text.[4] I suggest that the interested reader take the time to read these three papers to truly deepen their own knowledge of this subject. He starts with history and diagnosis. He states that there are three essential questions of diagnosis:

- Are the presenting symptoms reflective of a visceral disorder or a potentially life-threatening disease?
- What tissue is the primary source of the symptoms?
- What has gone wrong with the patient as a whole to cause these symptoms to develop and persist?

Dr. Murphy outlines four clinical entities that most commonly are pain generators for the cervical spine.[5] These include: joint dysfunction, myofascial trigger points, disc derangement and neural tension/neural irritation. The neural tension model, popularized by David Butler, is a critical piece for both diagnosis and treatment. In looking at the big picture, Dr. Murphy identifies dynamic instability, faulty movement patterns, oculomotor dysfunction, central pain hypersensitivity and fear-avoidance beliefs and behavior. I would add nutritional insufficiencies to this list.

Dr. Murphy recognizes that much of the time, the clinician is going to make a working diagnosis that may or may not be up to gold standards, and then use a trial of treatment with careful observation of outcome. In one of his articles, he references Wainner, et al., and the cluster of four tests for cervical radiculopathy.[1,6] These include:

- upper-limb tension test;
- limitation of active rotation to the involved side (60 degrees or less);
- maximum cervical compression, an active axial compression of the head with the head side bent toward the side of pain; and
- distraction test - relief of pain by long-axis distraction while the patient is sitting.

Dr. Murphy's three recent papers on cervical radiculopathy all follow from a series of cases in his clinic. These articles come out of a "real world" approach using multiple treatment tools, not just one intervention. Once a diagnosis of cervical radiculopathy was established through history, exam and imaging, a treatment plan was formulated.

Manipulation was used in all cases. Other interventions include neural mobilization, end-range loading from the McKenzie model, over-the-door traction, and exercise rehabilitation focused on cervical stabilization, sensorimotor training, aerobic exercise, weight training and graded exposure to feared/pain-provoking activities. Dr. Murphy describes the treatment plans as minimalist. Only the approaches deemed necessary based on clinical findings were applied. I do not have the space here to describe in detail all of the treatment modalities used.

What kind of manipulation was applied? I'll describe the manipulation Dr. Murphy uses, but I'll add this caveat: This is not a technique guru's model. It's not "just do this adjustment, and everything will be fine." About half the time, traditional chiropractic HVLA thrusts were applied. The other half of the time, a muscle energy (post-isometric relaxation applied to joints) technique was used. These techniques seemed to work equally well in this series of cases.

Manipulation used a combination of indicators. First, manipulation was applied only to joints that showed dysfunction on palpation. Palpation assessed abnormal resistance to joint movement, reactivity of the local musculature, and the patient's report of pain. Second, manipulation could be applied to the level that was generating the radiculopathy, but only if joint dysfunction existed at that level. Third, manipulation was applied to other levels the doctors felt were clinically significant. Fourth, pre-manipulative screening was done. The joint was taken in the direction described below. If this caused peripheralization of symptoms, meaning an increase or activation of pain into the arm, this direction would be contraindicated, and another direction was found. The usual direction applied was to correct what Dr. Murphy calls an A-P rotation. This means the involved joint was slightly flexed, laterally bent away from the symptomatic side, and then rotated to the symptomatic side. The manipulation was completed with either a thrust or the contract-relax of muscle energy.

This model for manipulation is different from what most chiropractors use. The key difference is that it is based on provocation. The basis for the direction of manipulation is to find a position during pre-manipulative testing that does not peripheralize the pain. Those of you familiar with the McKenzie model, which uses positioning to guide care for lumbar and cervical discogenic pain, will recognize this approach. In the McKenzie model, one of the main goals is to find motions and positions that centralize the pain (move it proximally or decrease) and avoid motions and positions that peripheralize the pain.

Neural mobilization is aimed at freeing up adhesions along the nerve course. This is usually deferred until the subacute or chronic stage. This modality is not well-known in the chiropractic

world.

Another tool Dr. Murphy uses is end-range loading, also based on the McKenzie model of positioning. End-range loading is used when the exam found specific directions that produced centralization of the patient's pain. I will not describe in detail the other exercise rehabilitation or traction procedures used.

The third article is the most interesting.[3] This is a single case report. This patient had neck pain that became radiculopathy after cervical manipulation. Imaging showed multiple cervical herniated discs. In most instances, this case would have gone on to surgery and would have become another story in the mind of the surgeon about the dangers of chiropractic. In this case, the patient chose to follow up with another DC, Dr. Murphy, who used the same methods described above to reverse the radiculopathy.

I really appreciate Dr. Murphy's patience, tracking of his clinical experiences, and thorough referencing of his material. He has moved all of us forward by documenting that a broad chiropractic clinical approach to cervical radiculopathy is useful and valid. For an overview of his work, I recommend you read his text and his 2004 article.[4,5]

References

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