

## A Unique Neuromobilization Technique for Treating Spinal Pain

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A particular neuromobilization technique is fast becoming the technique of choice following the chiropractic adjustment (billed as Chiropractic Manipulation Therapy) for spinal pain with or without upper/lower extremity pain. Why? Simply because the results are predictable, reproducible and consistent for the vast majority of patients presenting at the chiropractic office. The complete technique involves the performance of three specific elements:

- chiropractic manipulation therapy (CMT);
- spinal centration procedures; and
- spinal stabilization procedures.

Whenever a patient's symptoms extend into the shoulder, arm and/or hand, an irritation of one of the cervical nerves must be considered. Additionally, when a patient's symptoms extend into the hip, thigh, leg and/or foot, irritation of one of the lumbar nerves must be considered. Radiculopathy is a dysfunction of a nerve root in the spine, commonly manifesting as sensory (and occasionally motor) disturbances in the upper or lower extremity. In order to plan the best course of care, it is helpful to know both the location and the type of structure that is likely to be causing the nerve irritation.

### Location and Structures

A careful clinical examination, followed by appropriate imaging procedures, will identify the level of involvement. The seventh cervical nerve root, between C6 and C7 (60 percent), and the sixth cervical nerve root, between C5 and C6 (25 percent), are the most commonly affected for cervical radiculopathy, with L4, L5 and S1 being the most commonly affected lumbar nerve roots.<sup>1</sup> The two structures that are most likely to irritate and impinge on nerve roots are the intervertebral disc, due to disc pathology, and lateral canal stenosis irritation, generally due to osteophytes and/or enlarged facets. Some evidence suggests disc herniations in the spine may regress, relieving the radiculopathy. However, determining which patients will regress is a consistent challenge.<sup>2</sup> Osteophytes that encroach on the intervertebral foramen, causing lateral canal stenosis, generally result in a more constant presentation. Occasionally, a nerve root is acutely injured by traumatic pinching or traction.<sup>3</sup>

### Diagnosis

MRI has become the method of choice in the evaluation of radiculopathy because it can accurately identify disc degeneration, thinning and herniations, as well as the impact of osteophytes on adjacent nerve roots. However, it is appropriate to combine electrodiagnostic testing with MRI, which is then the "gold standard" in radiculopathy diagnosis.

Recently, Wainner, et al.,<sup>4</sup> reported the following cluster of cervical tests that have a 90 percent post-test probability that the patient has cervical radiculopathy when all four test positive:

- upper-limb tension test A;
- Spurling test A;
- distraction test; and
- cervical rotation (<60 degrees on ipsilateral side).

The best clinical cluster of lumbar tests with calculated positive/negative likelihood ratios for lumbar radiculopathy include:

- contralateral straight-leg raise (+7.2 / -.61);
- patellar (+7.14 / -.54) and Achilles (+4.7 / -.59) reflex;
- hip flexors weakness (+4.35 / -.36);
- extensor hallucis longus weakness (+4.9 / -.52); and
- reflex/weakness/sensory all positive (+4.0 / -.90).

## Procedures

As mentioned, this neuromobilization technique combines chiropractic manipulation, centration and stabilization procedures. Murphy, et al.,<sup>5</sup> reported that "manipulation when applied by properly trained and experienced practitioners is a potentially safe option for patients" and that there is "no difference in outcome between patients treated with HVLA manipulation and those treated with non-HVLA technique." Following carefully applied spinal manipulation, the patient is placed in a position of spinal centration during specific neuromobilization of the specific long tract nerve (sciatic, femoral, median, radial or ulnar). This process begins passively and progresses to home activation. This process gradually releases the nerve from its impingement, perhaps by breaking down perineural adhesions. In many cases, there are immediate results with improved, pain-free nerve root sliding and lengthening.<sup>6</sup>

The complete technique can be performed on any adjusting table, but particularly one with a cervical headpiece that accommodates cervical/lumbar passive motion during the specific neuromobilization procedure.<sup>7</sup> Spine stabilization procedures are progressive, meaning basic procedures are performed prior to intermediate and advanced procedures. You can give the patient a handout of the actual procedures. It is best to demonstrate the procedures, performed correctly and incorrectly, to the patient before they leave the office. Here are the cervical and lumbar spine stabilization progressions:

## Neck Stabilization Procedures

- diaphragm breathing
- spine sparing strategies
- cervical centration
- diaphragm breathing/bracing
- median neuromobilization
- radial neuromobilization
- ulnar neuromobilization
- active cervical centration
- wall pushup (scapula stability)
- standing plank
- neck lift
- bird dog extension (beginner)
- bird dog extension (intermediate)
- bird dog extension (advanced)
- isometric cervical strength
- neck-torso extension

- eye to hand movement

#### Back Stabilization Procedures

- diaphragm breathing
- spine sparring strategies
- lumbar centration
- diaphragm breathing/bracing
- sciatic neuromobilization
- femoral neuromobilization
- standing plank
- standing side bridge
- knee plank
- knee side bridge
- toe plank
- feet side bridge
- plank to side bridge
- bird dog (beginner arms - legs)
- bird dog (intermediate arms - legs)
- bird dog (advanced arms - legs)
- forward lunge
- star lunge
- squat
- torso extension (beginner)
- torso extension (intermediate)
- torso extension (advanced)
- abdominals (beginner)
- abdominals (intermediate)
- abdominals (advanced)
- cat-camel

#### Conclusion

An appropriate and progressive rehab program should be started early in the treatment of patients with radiculopathy, disc pathology and/or canal stenosis. In my opinion, the specific neuromobilization technique outlined in this article can help many patients avoid more invasive procedures.

#### References

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