Clinical Integration of Osteopathic Manipulative Medicine

Family Medicine: Disc Herniation Syndromes

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Introduction:

Spinal disc herniation occurs when there is a tear in the outer ring (annulus fibrosis) of an intervertebral disc with bulging out of the central content called nucleus pulposus. The bulging disc is usually posterolateral in position. Spinal disc herniations mostly occur in patients in their 30s or 40s when the nucleus pulposus is still a gelatin-like substance. Dehydration of the nucleus pulposus occurs with aging and greatly reduces the risk of herniation.

Spinal disc herniation is a common disease entity and can occur in any disc in the spine. Since lumbar and cervical disc herniations are the two most common types, we will be focusing on the clinical presentation and treatment of these two entities.

Patient presentations:

Clinical presentation of a herniated disc can vary depending on the location of the herniation and can range from little or no pain to severe and unrelenting neck or low back pain that will radiate into the regions served by compressed nerve roots.

Radiculopathy — The clinical presentations of radiculopathy vary according the level of nerve root or roots involved. The most common cervical disc herniations occur between the C5/6 and the C6/7. The most common levels for a lumbar herniated disc are L4-5 and L5-S1. Patients present with pain, sensory loss, weakness, and reflex changes consistent with the nerve root involved.

Sciatica — A sharp or burning pain radiates down the posterior or lateral aspect of the leg, usually to the foot or ankle. Sciatic nerve pain is often associated with numbness or tingling and increased with coughing, sneezing, or performance of Valsalva maneuver.

Cauda equina — Bowel or bladder dysfunction may be a symptom of severe compression of the cauda equina, which is a medical emergency. Urinary retention with overflow incontinence is typically present, often with associated saddle anesthesia, bilateral sciatica, and leg weakness. The cauda equina syndrome is most commonly caused by a massive midline disk herniation.
Differential diagnosis:

- Muscular strain
- Compression fracture
- Spondylolisthesis
- Discitis
- Osteomyelitis
- Ankylosing spondylitis
- Spinal stenosis
- Cancer

Clinical pearls:

- Diagnosis of disc herniation syndromes is made based on the history, symptoms, and physical examination. Nerve root tension signs are often used in the evaluation of patients suspected of having a herniated disc. In patients with cervical disc herniation, pain is exacerbated by neck extension and rotation or by the Spurling maneuver (patient's neck is extended, laterally bent, and held down) designed to elicit radicular symptoms. In the lumbar disc herniation, the straight-leg raising test is performed with the patient in the supine position.
- The gold standard imaging study for herniated disc is MRI which can reveal degenerative and bulging discs in asymptomatic persons.

OMM Integration: Osteopathic manipulation with an exercise program or physical therapy provides relief once the acute phase has subsided. A major goal of manipulation is the relaxation of regional muscles that may be contributing to compression of the vertebra on the disc. Although high-velocity, low-amplitude spinal manipulative therapy is relatively contraindicated in treating disc herniation syndromes osteopathically, a recent study performed by Peterson et al. has shown significant decreases in the pain level at one month after the first treatment.

Osteopathic Structural Examination: Structural examination of the upper and lower extremities, cervical and lumbar regions should be performed, looking for:

- Marked hypertonicity of the trapezius, supraspinatus, rhomboids and other back muscles
- Flexion / Extension somatic dysfunction was found at C5 - T1 (cervical region) or L4 - S1 (lumbar region) with associated tender points
- The range of motion of the cervical / lumbar spine is decreased in rotation and side-bending
- First rib somatic dysfunction

Possible Treatments Options:

- Soft tissue myofascial techniques
- Facilitated positional release techniques for discogenic pain
- Counterstrain
- High-velocity, low-amplitude spinal manipulative therapy

References:


