Dynamic Chiropractic

SOFT TISSUE / TRIGGER POINTS

Cervical Radiculopathy -- Myelopathy

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The chiropractor often treats cervical radiculopathy with excellent results. One of the questions in treating this condition is whether there is an associated myelopathy. "Cervical radiculopathy may be defined as pain in the distribution of a specific cervical nerve root as a result of compressive pathology whether from disc herniation, spur formation or hypermobility states."[1] Myelopathy is "a general term denoting functional disturbances and/or pathological changes in the spinal cord."[2] The symptoms of cervical radiculopathy are due to nerve root compression, while cervical myelopathy is usually due to spinal cord compressive pathology.[3]

Rarely does a radiculopathy progress to a myelopathy,[4] but the practitioner must be aware of the differentiation since early spinal cord compression may not be obvious. In the course of cervical spondylosis, while there may be no symptoms, occasionally neurological complications such as root or cord compression may result.[5] MacNab[6] discusses cervical spondylosis as a product of cervical disc degeneration which he divides into stages. He describes the first stage of cervical disc degeneration as an unstable segment and, therefore, vulnerable to trauma and involvement of injured ligaments or damaged joints. He states that the presenting symptom is just a pain in the neck with possible referral to the shoulder, suboccipital area, occipital headache, interscapular pain or pain down the arm or into the chest. The patient may also have blurring of vision, tinnitus or dysphagia. Early on, these symptoms are not necessarily due to nerve root irritation since they can be reproduced by injection into the supraspinous ligament. He feels that the later stages of disc degeneration with its associated bony outgrowths, especially from the joints of Lushka, will affect the nerve roots. Progressive myelopathy may result if a diffusely bulging disc forms a transverse bar of bone and protrudes posteriorly, narrowing the AP diameter of the cervical spinal canal. This cord compression combined with possible vascular compromise of the radicular arteries creates the myelopathy.6

Garvey and Eismont[3] recently differentiated the signs and symptoms of radiculopathy and myelopathy. They state that regarding pain, cervical radiculopathy has significant arm pain with little neck pain, while cervical myelopathy presents with local cervical and referred interscapular pain, or very little pain unless there is an associated radiculopathy. They state that the deep tendon reflexes (DTRs) in a radiculopathy are diminished, while myelopathy causes hyperactive reflexes below the level of the lesion or lesions. But if a radiculopathy is also present, a local diminished reflex may be associated with generalized hyperreflexia. With regard to motor weakness, radiculopathy presents with, for example, a diminished triceps reflex, a weak triceps muscle, and numbness down the forearm into the middle finger (C7 radiculopathy), while the weakness of a myelopathy is typically more generalized and bilateral rather than unilateral.[3]

Typical signs of myelopathy include Hoffman's sign, Babinski, Lhermitte's sign (electric shock with cervical flexion, and compression) and an inverted radial reflex. The inverted radial reflex is reflex flexion of the fingers from a testing stimulus to the biceps or brachioradialis (DTR) indicating C5 lesion.[3] Kubota, et al.,[7] describes a myelopathy case due to ossification of the ligamentum flavum of

the cervical spine. Presenting symptoms were numbness of the fingers of the right hand for one year which gradually became extensive in area and severe in degree. Eventually gait disturbance occurred (spasticity) with slight bladder and rectal disturbances. Sensory tests showed hypesthesia of both hands and from the ninth thoracic spinal segment down. Measurement of the spinal cord canal on lateral cervical views from the posterior aspect of the vertebral body to the posterior lamina showed that normal cords fell above a canal diameter of 15 mm.[8]

Typical signs of radiculopathy are a positive cervical compression test, valsalva, and Spurling (cervical hyperextension and lateral rotation) sign. Davidson, et al.,[9] describe an excellent test to diagnose extradural compressive monoradiculopathies (cervical radiculopathy) called the shoulder abduction test. When a patient abducts his shoulder, they found that in 68 percent of patients with cervical and arm pain with significant extra dural defects (osteophytes, etc.), found on myelography, that the patient experienced relief. This test correlated with radicular paresthesias (73 percent) and motor weakness (100 percent.) They felt that the main reason for relief was the reduction in nerve tension during shoulder abduction. They feel that this test indicates that surgery will be effective if conservative therapy fails.

Reference:

1. Dillin, W., Booth, R., Cuckler J., et al.: Cervical radiculopathy: a review Spine 1986; 11:988-991.

2. Dorland: Medical Dictionary, 26th ed. Philadelphia, W.B. Saunders 1981.

3. Garvey, T.A., Eismont, F.J. Diagnosis and treatment of cervical radiculopathy and myelopathy. Orthop Rev 1991; 20:595-603.

4. Lees, F., Turner, J. Natural history and prognosis of cervical spondylosis. Br Med J 1963; 2:1607.

5. Clarke, E., Robinson, P.K. Cervical myelopathy: a complication of cervical spondylosis. Brain 1956; 79:483.

6. MacNab, I. Degenerative disorders: symptoms in cervical disc degeneration. In Bailey, R.W., Sherk, H.H., Denn, E.J., et al.: The Cervical Spine: The Cervical Spine Research Society. St. Louis, J.B. Lippincot 1983; 388-402.

7. Kubota, M., Baba, I., Sumida, T: Myelopathy due to ossification of the ligamentum flavum of the cervical spine. Spine 6 1981; 553-559.

8. Veidlinger, O.F., Colwill, J.C., Smyth, H.S., Turner, D.: Cervical myelopathy and its relationship to cervical stenosis. Spine 6 1981; 550-552.

9. Davidson, R.I., Dunn, E.J., Metzmaker, J.N.: The shoulder abduction test in the diagnosis of radicular pain in cervical extradural compressive monoradiculopathies. Spine 6 1981; 441-445.

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