

## Cervical Spondylitic Myelopathy: Useful Clinical Signs

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Cervical spondylitic myelopathy has been identified as the most common cause of spinal cord dysfunction in patients over 55 years of age and may be the single most underdiagnosed spinal disorder.<sup>1,2,3</sup> In addition, this condition is one of the most common findings in a chiropractic setting. The usual course for the onset of symptoms in cervical spondylitic myelopathy is one of increasing disability over a period of several months. The three most common initial symptoms are dysesthesia in the hands, clumsiness of the hands, and weakness and unsteadiness in the lower limbs, affecting gait.<sup>3,4,5</sup>

There are several clinical tests which involve the hands that may aid in the clinical diagnosis of myelopathy: The inverted radial reflex, the finger escape sign, deficient opening and closing of the hands, and the dynamic Hoffman's sign. The inverted radial reflex may be present when cord and nerve root compression are present at the C5 level. The reflex is seen during testing of the brachioradialis reflex. As the brachioradialis tendon is struck with the reflex hammer at the distal end of the radius, a diminished response is noted in the brachioradialis along with a reflex contraction of the spastic finger flexors, hence, the term "inverted radial reflex."<sup>3,4,5</sup> The "finger escape sign" is noted in the patient who has deficient adduction, extension, or both in the ulnar two or three digits of the affected hand.<sup>5,6</sup>

Deficient hand closing is also a feature noted in patients with cervical spondylitic myelopathy. The normal individual can open and close the fist as many as 20 times in a 10 second period, while the patient with myelopathy has much difficulty performing this maneuver. The opening and closing of the fist is typically slow, difficult, and incomplete.<sup>3,5,6</sup> Hoffman's sign, elicited by nipping the nail of the middle finger and observing a reflex contraction of the thumb and index finger, is evidence of an upper motor neuron lesion. In a normal patient, the Hoffman's sign is absent. Recently, a dynamic element has been suggested to add to the Hoffman's sign which may increase the ability to detect early spinal cord involvement in cervical spondylosis.<sup>7</sup> It was noted that if the Hoffman's sign was checked during active flexion to extension movements of the cervical spine as tolerated by the patient, that the Hoffman's sign could be elicited in subjects that did not elicit the sign in the resting position. Therefore, the dynamic Hoffman's sign may prove of use in diagnosing early cervical spondylitic myelopathy.

### References

1. Rothman RH, Simeone F: The Spine, ed 2. W.B. Saunders, Philadelphia, 1982.
2. Connell MD, Wiesel SW: Natural history and pathogenesis of cervical disc disease. Ortho Clin North Am., 23(3):1992.

3. Montgomery DM, Brower RS: Cervical spondylitic myelopathy: Clinical syndrome and natural history. *Ortho Clin North Am.*, 23(3):1992.
4. Lestini WF, Wiesel SW: The pathogenesis of cervical spondylosis. *Clinical Orthopedics and Related Research*, 239:69-93, 1989.
5. Heller, JG: The syndromes of degenerative cervical disease. *Ortho Clin North Am.*, 23(3), 1992.
6. Ono K, et al: Myelopathy hand -- new clinical signs of cervical cord damage. *JBJS*, 69-B(2), 1987.
7. Denno JJ, Meadows GR: Early diagnosis of cervical spondylitic myelopathy -- a useful clinical sign. *Spine*, 16(7), 1988.

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