

Hot Topics in Spine: Worker's Compensation

Lumbar Disc Nomenclature

Recently, a generalized consensus has been developed between the North American Spine Society and the American Society of Neuroradiology regarding lumbar disc nomenclature. This allows physicians and providers to more clearly and concisely convey imaging study findings and their likely etiology. Nomenclature is divided into five distinct categories: normal, congenital or developmental variation, degeneration, trauma and inflammation or infection. Terms including "annular tear" have been abandoned for more descriptive terms such as annular fissure (which is further divided into concentric fissure, radial fissure and transverse fissure). Additionally, disc herniation and high intensity zone's (HIZ) on MRI have been further defined allowing increased understanding of acuity. For complete details, please see the attached referenced article.

Reference

1. D.F. Fardon et al. "Lumbar Disc Nomenclature: Version 2.0 Recommendations of the Combined Task Forces of the North American Spine Society, the American Society of Spine Radiology and the American Society of Neuroradiology." *The Spine Journal* 14 (2014): 2525-545.

Cervical Spine Stenosis and Trauma

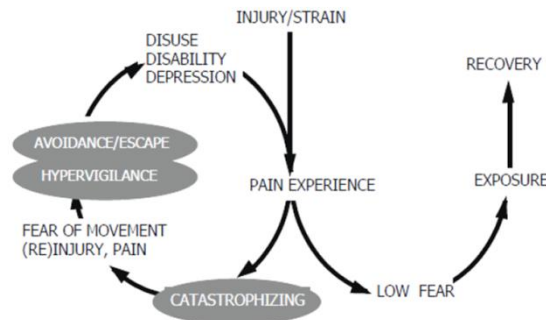
Cervical spondylitic myelopathy (CSM) is a complex yet common condition that is the result of compression of the spinal cord in the neck. Multiple factors contribute to this condition including the bones, discs, joints and ligaments. Of these contributing factors, they must be further divided into static and dynamic or motion mechanisms. Static mechanisms include normal age-related or degenerative changes. Dynamic mechanisms include excessive motion such as trauma or motor vehicle accidents. Individuals with underlying static mechanisms or CSM are at a significant increase for exacerbating this condition if they suffer an acute dynamic event. The biological occurrence when a dynamic event happens occurs on both a visualized level and on a microscopic level. Changes in blood vessels and lack of oxygen may cause irreversible changes in the nerves. Although surgical decompression does not guarantee improvement in nerve damage, it is often warranted given the slow step-wise deterioration of the condition if left untreated. For further details and explanation, please see the attached referenced article.

Reference

1. Etheridge, Julie and S. Babak Kalantar. "The pathophysiology and biological mechanisms of cervical spondylotic myelopathy." *Seminars in Spine Surgery* 26.2 (2014): 62-67.

Fear Avoidance and Disability

The Fear Avoidance Belief Questionnaire and Tampa Scale of Kinesiophobia have recently been used as a tool in medicine in order to screen for individuals who may have underlying psychosomatic dysfunction explaining their constellation of symptoms. These questionnaires allow providers to objectively and systematically evaluate individuals and refer for additional testing or screening as necessary. The fear avoidance model (pictured below) outlines the cyclical events and perceived disability in individuals with high fear avoidance. For further details, please see the referenced articles below.



Reference

1. Fritz, Julie M., Steven Z. George, and Anthony Delitto. "The Role of Fear Avoidance Beliefs in Acute Low Back Pain: Relationships with Current and Future Disability and Work Status." *Pain* 94 (2001): 7-15. Web.
2. Vlaeyen, J. W. S., Kole-Snijders, A. M. J., Boeren, R. G. B., & Van Eek, H. (1995). Fear of movement/(re) injury in chronic low back pain and its relation to behavioral performance. *Pain*, 62(3), 363-372.
3. Williamson E. Fear Avoidance Behavior Questionnaire. *Australian Journal of Physiotherapy*. 2006; 52: 149.

First-time Low Back Pain and MRI Findings

Magnetic resonance imaging (MRI) is a common imaging modality for evaluating low back pain. It is often important to delineate the acuity of injury, which is commonly determined by findings on MRI studies. A recent study by Carragee et al. demonstrates that new findings on MRI studies within 12 weeks onset of low back pain are highly unlikely to represent any new structural change. Most "new" MRI findings including loss of disc signal, end-plate changes and facet arthropathy are likely secondary to age-related or degenerative changes. In contrast to age-related changes, individuals with primary radicular (leg) complaints may have signs on MRI of nerve root irritation consistent with an acute injury. It is important as a provider to always consider the history, physical examination and imaging modalities when determining the acuity and structural changes as it relates to a low back injury.

Reference

1. Carragee, E, et al. Are First-Time Episodes of Serious LBP Associated with New MRI Findings? *The Spine Journal* 6 (2006) 624-635