

What is the Significance of Pre-Existing Degeneration?

Every doctor has been challenged by patients that have spinal degenerative changes. These “normal” age related findings are usually discovered when a patient presents to the physicians office with complaints of spine pain and radiographs are ordered. The results come back with the diagnosis of spondylosis, arthropathy, degenerative disc disease, degenerative joint disease, etc and immediately the uninformed doctor assumes that the underlying cause for the pain is the degenerative process... a process which can take years to develop and has never been directly associated with spine pain as the primary causative factor. The March 2010 issue of the prestigious journal **SPINE** contained a study addressing exactly this issue and helps us to better understand that which most of us already know in the orthopedic and spine related professions.

This study looked at a subset of 187 participants that were chosen from the 3,529 participants enrolled in the Framingham Heart Study who underwent CT scan to assess aortic calcification. The study was designed to look at the prevalence of back pain in the population and then at the relationship between lower back pain and spinal degenerative changes. They looked for degenerative spinal changes in the population and related it to the existence of lower back pain. 104 men and 83 women, with a mean age of 52.6 years, participated in the study. There was a high prevalence of intervertebral disc narrowing (degenerative disc disease) (63.9%), facet joint osteoarthritis (facet arthropathy) (64.5%), and spondylolysis (degenerative joint disease) (11.5%) in the studied sample. **Only spinal stenosis showed statistically significant association with LBP. All other degenerative processes were no more prevalent with back pain than people with otherwise healthy spines.**

The authors concluded that *“Degenerative features of the lumbar spine were extremely prevalent in this community-based sample. The only degenerative feature associated with self-reported LBP was spinal stenosis. Other degenerative features appear to be unassociated with LBP”*.

While this is not the first study to report this finding it is the most recent and because it comes from a very well respected journal it should carry some weight. Some will argue that the study only looked at the lumbar spine for lower back pain and therefore did not address the cervical spine. While this is true, and the cervical spine is a completely different structure, much of this can be extrapolated to the entire axial spine and even extremity joints. Spinal degeneration alone is generally benign and usually an incidental finding. However, there are some known facts about the degenerative joints that must be considered when discussing causation, severity of injury and prognosis,

Degenerative joints are associated with hypertrophic spur formation. This spur formation is usually the result of some degree of joint laxity. This laxity alters the normal mechanics of the joints. In the spine the laxity commonly originates from loss of disc height and/or over use. It also comes from normal aging, postural stresses, and traumatic insult. The development of arthrosis and spondylosis is a protective measure by the body to stabilize the spine and protect the delicate neurologic structure that



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the spine protects. The stabilization resulting from the process results in connective tissues and joints that are less elastic and more vulnerable to injury than the healthy tissues that have the normal viscoelastic and biological properties. Although not necessarily pain productive on its own, these stabilizing connective tissues are more vulnerable to injury as a result of their lowered capacity to withstand rapid stretch, shear, compression, traction and rotation. Therefore, a sneeze, a cough, a fall or a motor vehicle collision in a person with a degenerative spine will have a greater probability of sustaining a more serious injury than a healthy person, even if both were asymptomatic beforehand.

Obviously, the greater injury potential and the existence of poor quality connective tissue lead to a longer healing process and offer a less optimistic prognosis. People with pre-existing degenerative changes that are otherwise pain free will require longer period of care and have lesser probability to reach the same level of outcome as a healthy person. In the absence of forces that overcome the supportive spinal tissues these people have no greater likelihood of developing pain in the spine than do people without degeneration (unless they develop degenerative central stenosis).

Professionals working with traumatically injured people need to understand these principles. That means health care professionals as well as the attorneys that represent their legal considerations. Hopefully, the knowledge of these facts will result in better outcomes for their health... and their case.

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