Shaw Chiropractic Group

A MEDICAL-LEGAL NEWSLETTER FOR PERSONAL INJURY ATTORNEYS BY DR. STEVEN W. SHAW

Prevalence of Disc Pathology on MRI

Disc abnormalities on MRI are often degenerative and may improperly considered causally related to a traumatic event. Absent clinical and historical correlation there is a real question whether the MRI findings are related. Over the past decade, the requests from patients and their attorneys to order MRIs has been increasing. Patients with no clinical symptoms of instability, neurological compromise, infection or neoplasm are demanding that MRIs be performed in search of an explanation and treatment for their pain. More often than not, the pain generators are the connective tissues such as muscle, ligament and tendons and these are rarely identified on imaging studies. Unfortunately, when an MRI is ordered there is a real possibility that an identified pathology will be blamed for the patient's symptoms, even if it does not correlate with the clinical presentation or the traumatic history.

Attached to this email is a study published in the American Journal of Neuroradiology. The study, titled "Systematic Literature Review of Imaging Features of Spinal Degeneration in Asymptomatic Populations" sheds a bright light of the significance of common MRI findings. This study was a comprehensive literature review based upon reported data on asymptomatic subjects who had undergone CT or MRI with no prior history of back pain. The results were incredibly helpful in understanding why we find so many clinically insignificant abnormal findings in our patient populations, most of which are long standing and degenerative in nature. Below is a table demonstrating the findings.

Table 2: Age-specific prevalence estimates of degenerative spine imaging findings in asymptomatic patients[a]

	Age (yr)						
Imaging Finding	20	30	40	50	60	70	80
Disk degeneration	37%	52%	68%	80%	88%	93%	96%
Disk signal loss	17%	33%	54%	73%	86%	94%	97%
Disk height loss	24%	34%	45%	56%	67%	76%	84%
Disk bulge	30%	40%	50%	60%	69%	77%	84%
Disk protrusion	29%	31%	33%	36%	38%	40%	43%
Annular fissure	19%	20%	22%	23%	25%	27%	29%
Facet degeneration	4%	9%	18%	32%	50%	69%	83%
Spondylolisthesis	3%	5%	8%	14%	23%	35%	50%

The authors reported the following results and conclusions (my highlights):

> *"**RESULTS:** Thirty-three articles reporting imaging findings for 3110 asymptomatic individuals met our study inclusion criteria. The prevalence of disk degeneration in asymptomatic individuals increased from 37% of 20-year-old individuals to 96% of 80-year-old individuals. Disk bulge prevalence increased from 30% of those 20 years of age to 84% of those 80 years of age. Disk protrusion prevalence increased from 29% of those 20 years of age to 43% of those 80 years of age. The prevalence of annular fissure increased from 19% of those 20 years of age to 29% of those 80 years of age.*
> ***CONCLUSIONS:** Imaging findings of spine degeneration are present in high proportions of asymptomatic individuals, increasing with age. Many imaging-based degenerative features are likely part of normal aging and unassociated with pain. These imaging findings must be interpreted in the context of the patient's clinical condition."*

Defense attorneys will likely read this study and think they have found the holy grail, but they would be wrong. Just because these findings are prevalent in

asymptomatic patients doesn't mean they are not significant in symptomatic patients. Practically any of these findings listed in the table, in the context of symptoms and findings that clinically correlate and are temporally related to the trauma, represent as an exacerbation or aggravation of a pre-existing and predisposing finding, especially in a patient with no prior medical history. In fact, it could be argued that a symptomatic patient with these MRI findings has a greater likelihood of injury and a less favorable prognosis for recovery. Any residual symptom or functional limitation that persist would be 100% causally related to the trauma if the clinical findings and temporal onset are a match. These patients are your classic eggshell client.

Be aware that some uniformed, unethical or improperly educated doctors may opine that the abnormal imaging finding itself is causally related to the trauma. I have even seen reports from some chiropractors who state that based upon their own interpretation (not that of the radiologist) there is a 100% causal relationship. Not even the best radiologist in the world can say with 100% certainty that a disc herniation in a degenerated spine is 100% causally related. I have seen acute disc herniations on patients in the absence of degenerative changes, but they are not as common as most people think. There must always be clinical support. As an example, clinical support for a disc herniation may include radiating pain or paresthesias on the side and in the distribution of the related nerves, weakness in the associated muscles, absent or diminished deep tendon reflexes. In the absence of nerve involvement, clinical support may include confirmatory objective and provocative orthopedic tests, active spasm or muscle rigidity, decreased ranges of motion and other observed findings and including the patient's subjective symptoms.

It is perfectly reasonable for a doctor to opine that a patient's permanent injury is causally related to the trauma and the presence of the MRI findings represents a complicating and predisposing factor. It is not reasonable for the doctor to state that the pre-existing degenerative disc or spine pathology is itself causally related.

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Ordering an MRI on every patient is not good medicine but seems to be developing into the standard of care for some providers. In my practices we balance the likelihood of a positive MRI with the clinical presentation before ordering a study that may cost several thousand dollars and offer no benefit to the patient or change our treatment approach. In other words, we lead with a clinical suspicion and confirm with an imaging study, not the other way around. Hopefully, our approach is appreciated.