



MRI scans and objective evidence of spinal injury

Upright MRI may offer clinical proof of injury when conventional MRI does not

BY SANA KHAN

Objective evidence of disk herniation and other spinal injuries can be critical to securing adequate damage awards for injured parties. For the past 30 years, physicians have relied on magnetic resonance imaging (MRI) to help diagnose the cause of pain in the lumbar region. Nearly 10 million patients, including many if not most personal-injury plaintiffs, are scanned in an MRI for back pain each year. Unfortunately, the objective evidence of lumbar pain is not always seen on conventional MRI scans.

Conventional MRI systems are limited to acquiring scans with patients in the recumbent (lying flat) position. It is a simple, yet fundamental observation that many human musculoskeletal conditions are impacted by gravity, and that many patients experience pain in weight-bearing positions such as standing or sitting even when they do not in the recumbent one. Thus, recumbent imaging alone may not demonstrate the full degree of pathology, due to muscle and ligament relaxation and in the case of the spine, disc retraction.

In fact, the American Medical Association (AMA) Guides to the Evaluation of Permanent Impairment, 5th Edition, specifically states that “The dominant motions at both the lower cervical and entire lumbar spine, where most clinical pathology occurs, are flexion-extension.”



Upright MRI and evidence

The Positional Weight-Bearing or Upright MRI system allows upright, angled and recumbent imaging, replicating partial or full weight-bearing conditions. It also allows kinetic maneuvers of the patient’s whole body or any body part, enabling the imaging of the relevant body part in any position of normal everyday stress, across the limits of normal range of motion.

Because of its ability to image in the specific position of the patient’s clinical symptomatology, the Upright MRI technology has had a significant impact in the medical-legal arena. The Upright MRI provides a highly relevant solution that

enables the migration from subjective evaluations in personal-injury and workers’ compensation cases to precise evidence-based reports.

Evolution of the technology

In 2001, New York-based Fonar Corporation received FDA approval for the Stand-Up™ MRI, a whole-body MRI scanner with the ability to perform position imaging. The Stand-Up MRI (a.k.a. Upright, weight-bearing, positional or Kinetic MRI) uses its open MRI scanner to image a patient in upright, angled (slanted), and recumbent positions, replicating partial or full weight-bearing conditions. With its unique ability to scan patients in weight-bearing postures, this MRI technology can identify pathologies that had gone undetected on conventional, recumbent MRI scanners.

Fonar has sponsored several major clinical studies covering over 2,000 patients to support their science and technology platform. These studies have provided significant new insights on multiple spinal conditions such as degenerative changes in the spine, disc herniations, as well as spinal cord and spinal canal characteristics.

Comparative studies

“Conventional MRIs require the patient to lie supine in the scanner. However, their pain may disappear or at least



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be minimized when they lie flat,” says Professor Francis W. Smith, MD, of the Centre for Spinal Research at the University of Aberdeen in Scotland. Smith’s center has been using Upright Multi-Position MRI since 2003.

Professor Smith has conducted comparative studies of conventional and Stand-Up MRI and found that “in just over 30 percent of the patients, the Upright MRI finds pathology that was not evident in the recumbent position.”

Conclusion

As the Upright MRI gains increasing recognition as the most accurate and comprehensive tool for the evaluation and treatment of lower-back musculoskeletal injuries, it has gained wide acceptance in the legal system for the validation of injuries and the evaluation of litigated cases.

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