Correlation of Clinical Presentation, Radiography, and Magnetic Resonance Imaging for Low Back Pain — a Preliminary Survey

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ABSTRACT

Purpose: To determine the correlation between clinical presentation, plain radiographic signs, and magnetic resonance imaging of the lumbosacral spine for patients with low back pain.

Patients and Methods: Fifty seven patients were included in this study and their clinical presentation, plain radiographs and magnetic resonance findings were reviewed and correlated.

Results: Sensory deficit predicts the level of spinal stenosis. Linear correlation was observed between age and number of disc degeneration (r = 0.756). No significant correlation was noted between clinical presentation and disc herniation, nerve root compression, or spinal stenosis (p > 0.025). Age, duration of pain, and sciatica were significant predictors of stenosis (p < 0.05). Posterior disc height of less than 6 mm correlated significantly with root compression (p < 0.001) and spinal stenosis (p = 0.015). Significant correlation was observed between posterior osteophytes, end plate sclerosis and irregularity, vacuum phenomena, facet arthropathy, spondylolysis and spondylolisthesis with disc herniation, root compression, and spinal stenosis (p < 0.025). Plain lumbosacral radiographs were sensitive but not specific for the investigation of low back pain (sensitivity, 92.7%).

Conclusion: This was a preliminary survey with a small sample size, but may generate some useful data for future study with a larger number of patients.

Key Words: Low back pain, Lumbosacral region, Magnetic resonance imaging, X-ray