THE ROLE OF MAGNETIC RESONANCE IMAGING IN THE EVALUATION OF PATIENTS WITH LOW BACK PAIN AND LUMBOSACRAL RADICULAR SYNDROME

V. Seu
Department of Radiology and Medical Imaging, Nicolae Testemitanu State University of Medicine and Pharmacy, Chisinau, Republic of Moldova
E-mail: victoria.seu@usmf.md

Background and study aim: Lumbosacral radicular syndrome is characterized by radiating pain that follows a dermatomal pattern. However, radiculopathy is not a cause of back pain; rather, nerve root impingement, disc herniation, facet arthropathy, and other conditions are causes of back pain. The purpose of the current study was to evaluate the role of magnetic resonance imaging (MRI) in establishing the cause of clinical symptoms and associated spinal pathology in patients with low back pain and lumbosacral radicular syndrome.

Materials and methods: The study included 40 consecutive patients with low back pain and lumbosacral radicular syndrome who underwent an MRI exam of the lumbar spine at the Euromed Diagnostic Center in the period December 2015 – June 2016. The age of the patients varied between 24 – 61 years. All MRI exams were performed using a 3.0 Tesla clinical MRI scanner.

Results: A potential cause responsible for patient's symptoms was revealed in 37 (92.5%) patients. Detected pathology included herniated intervertebral discs with various degrees of nerve root compression (35 (87.5%) patients), Modic type I endplate changes (10 (25%) patients), vertebral osteophytes with thecal sac or nerve root compression (7 (17.5%) patients), spondylodiscitis (2 (5%) patients), sacroiliitis (2 (5%) patients), hip osteoarthritis (1 (2.5%) patients) and avascular necrosis of the femoral head (1 (2.5%) patients). The most frequent disc herniations involved the L4-L5 intervertebral disc (8 (20%) patients) and L5-S1 intervertebral disc (6 (15%) patients). Multilevel lumbar disc herniations were detected in 24 (60%) patients. In 4 (10%) cases a sequestrated disc fragment was detected and in 2 (5%) cases the herniated disc caused spinal stenosis and local CSF flow disturbance. In addition, associated spinal pathology that was not directly related to presented clinical symptoms was diagnosed in 39 (97.5%) patients. Common incidental findings included vertebral osteophytes without evidence of thecal sac or nerve root compression (33 (82.5%) patients), Schmorl's nodes (28 (70%) patients), scoliosis of the spine (14 (35%) patients), vertebral hemangiomas (9 (22.5%) patients), perineural cysts (6 (15%) patients) and various degrees of intervertebral disc bulging without evidence of thecal sac or nerve root compression (5 (12.5%) patients).

Conclusion: Magnetic resonance imaging plays an important role in the evaluation of patients with low back pain and lumbosacral radicular syndrome. The modality established the potential cause of presented clinical symptoms in over 90% of cases and revealed a variety of other incidental findings in most patients.