The interpretation of lumbar spinal MRI, which is the imaging modality of choice, often has a significant influence on the diagnosis and treatment of low back pain. However, using MRI alone, substantial interobserver variability has been reported in the evaluation of lumbar spinal canal stenosis and nerve root compression.

Hardcopies of 30 lumbar spinal MRI (containing a total of 150 disk levels) as well as MRM films were separately reviewed by two radiologists and a neurosurgeon. At each intervertebral disk, the observers were asked to evaluate the thecal sac for the presence and degree of spinal stenoses (mild, moderate, or severe) and presence of root canal compression. Interobserver agreement was measured using weighted kappa statistics.

Regarding lumbar spinal canal stenosis, interobserver agreement between the two radiologists was moderate (kappa, 0.4) for MRI and good (kappa, 0.6) for combination with MRM. However, the agreement between the radiologist and neurosurgeon remained fair for MRI alone or in combination with MRM (kappa, 0.38 and 033, respectively). In the evaluation of nerve root compression, interobserver agreement between the radiologists improved from moderate (kappa, 0.57) for MRI to good (kappa, 0.73) after combination with MRM; moderate agreement between the radiologist and neurosurgeon was noted for both MRI alone and after combination with MRM (kappa, 0.58 and 0.56, respectively).

Interobserver agreement in the evaluation of lumbar spinal canal stenosis and root compression between the radiologists improved when MRM was combined with MRI, relative to MRI alone [1)].

1)
Al-Tameemi HN, Al-Essawi S, Shukri M, Naji FK. Using Magnetic Resonance Myelography to Improve Interobserver Agreement in the Evaluation of Lumbar Spinal Canal Stenosis and Root Compression. Asian Spine J. 2017 Apr;11(2):198-203. doi: 10.4184/asj.2017.11.2.198. Epub 2017 Apr 12. PubMed PMID: 28443163; PubMed Central PMCID: PMC5401833.