

MRI of the Lumbar Spine

CLINICAL HISTORY: A 39-year-old male with low back pain for two years and bilateral leg tingling and numbness.

TECHNIQUE: Sagittal and axial T1 and T2-weighted images and sagittal STIR images of the lumbar spine were obtained.

COMPARISON: No prior studies are available for comparison.

FINDINGS: There is mild scoliosis on the coronal localizing sequence with marginal osteophyte formation. 3 mm of degenerative L2 upon L3 retrolisthesis is identified with scarring of the anterior longitudinal ligament and spurring may be secondary to old trauma. The conus medullaris terminates at L1 with expected morphology and signal characteristics. No acute vertebral body fracture, infiltrative process or paravertebral mass.

Intervertebral Disc Levels:

L1-L2: Normal disc height, morphology and signal intensity without disc herniation, central canal or foraminal stenosis.

L2-L3: Degenerative retrolisthesis and thickening along the anterior longitudinal ligament are associated with anterior marginal osteophyte formation. No acute bone marrow edema is noted along the endplates. A shallow right paracentral through posterolateral broad disc protrusion produces mild narrowing of the right lateral recess, preforaminal and minimal right neural foraminal narrowing. There is no limiting central canal stenosis. There are facet joint effusions.

L3-L4: Normal disc height, morphology and signal intensity without disc herniation, central canal or foraminal stenosis.

L4-L5: Diminished disc height and hydration. A right paracentral 8-mm transverse and in cephalocaudal dimension measures approximately 3-4 mm AP disc herniation is associated with an annular tear and mild right paracentral proximal migration. There is minimal thecal sac distortion without limiting central canal stenosis. Slight narrowing of the right lateral recess. Biforaminal disc bulging is identified.

L5-S1: Normal disc height and hydration without a disc herniation, central canal or foraminal stenosis. There are small facet joint effusions.

IMPRESSION (MRI OF THE LUMBAR SPINE):

1. L2-L3 and L4-L5 degenerative disc disease without limiting central canal stenosis.
2. At L2-L3 is mild retrolisthesis and spurring along the anterior longitudinal ligament with marginal osteophyte formation which may represent an old hyperflexion type injury with infraction of the endplates but no acute fracture. There is no acute edema to suggest an acute fracture. Secondary to this process is a right paracentral, posterolateral and preforaminal

shallow disc protrusion without radicular impingement. Minimal thecal sac distortion without central canal stenosis.

3. At L4-L5 is a shallow right paracentral disc herniation with cranial migration producing minimal thecal sac distortion and minimal narrowing of the right lateral recess without limiting central canal or foraminal stenosis.
4. Mild facet arthrosis.
5. No acute fracture, infiltrative process or paravertebral mass.
6. Given the changes at L2-L3, correlation with gentle flexion and extension radiographs to exclude any instability along the anterior longitudinal ligament due to old trauma at L2-L3 is suggested. There is no limiting central canal or limiting foraminal stenosis, though positional low-grade radicular impingement is possible.