

CLINICAL HISTORY: 31-year-old female with lumbar radiculopathy.

TECHNIQUE: Sagittal T1, T2, proton density, axial proton density and T2 weighted images of the lumbar spine were performed according to the institutional protocol without availability of prior comparison studies.

FINDINGS: Low signal throughout the vertebral bodies is low within normal and should be correlated for any systemic abnormalities including hematopoietic abnormalities. This finding can be sometimes a normal variant but can be observed in patients with anemia, smokers, and in obesity. There are no STIR images to determine if there is any hyperintensity associated with the signal, but the signal is low on the T1, T2 and proton density images. No paravertebral mass. The conus medullaris terminates at L1 with normal morphology and signal. The AP central canal diameter is minimally shallow, and mild epidural lipomatous contours the lumbosacral thecal sac. Mild degenerative retrolisthesis of L5 upon S1 with disc desiccation is identified and a left far lateral neural foraminal disc herniation and spondylotic spurring produce exiting left L5 radicular impingement as will be addressed below. There is mildly exaggerated lumbar lordosis.

No acute vertebral body fracture is identified.

Intervertebral disc levels:

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

L2-L3: Mildly diminished disc height and hydration is associated with non-compressive concentric disc bulging and mild spondylotic spurring.

L3-L4: Normal disc height and hydration with minimal bulging in the far lateral annular contours, but no disc extrusion, central canal or foraminal stenosis.

L4-L5: Normal disc height and hydration. Slight concentric disc bulging and retrodiscal bi-foraminal encroachment, right greater than left, are associated with mild facet arthrosis. Low-grade exiting L4 radicular impingement is possible in the appropriate clinical setting.

L5-S1: Diminished disc height and hydration is associated with degenerative retrolisthesis. A right posterolateral shallow protrusion and a far lateral (neural foraminal) mixed spondylotic protrusion with disc herniation and facet arthrosis results in multifactorial left neural foraminal encroachment with exiting left L5 radicular impingement and moderate left pre-foraminal narrowing. There is mild multifactorial right neural foraminal narrowing owing to right foraminal spondylotic spurring, disc bulge and facet arthrosis. No central canal stenosis or retrodisplacement of the S1 nerve roots.

IMPRESSION (MRI OF THE LUMBAR SPINE):

1. Associated with mild L5 upon S1 retrolisthesis and mild disc desiccation is a left pre-foraminal and left far lateral (neural foraminal) disc herniation and mixed spondylotic protrusion which, in conjunction with facet arthrosis, produce left neural foraminal encroachment and left L5 radicular impingement. There is a more shallow left posterolateral disc protrusion without retrodisplacement of the left S1 nerve roots or central canal stenosis. There is also mild multifactorial right neural foraminal narrowing.

2. At L4-L5 is mild multifactorial biforaminal encroachment with disc bulging and facet arthrosis that may affect the exiting L4 nerve roots.
3. At L2-L3 at which there is disc desiccation is non-compressive disc bulging.
4. Signal within the vertebral bodies can be within normal variation in female patients, but can sometimes be seen in obesity, patients who smoke, have certain anemias and other hematopoietic and systemic abnormalities. This finding should be correlated clinically.