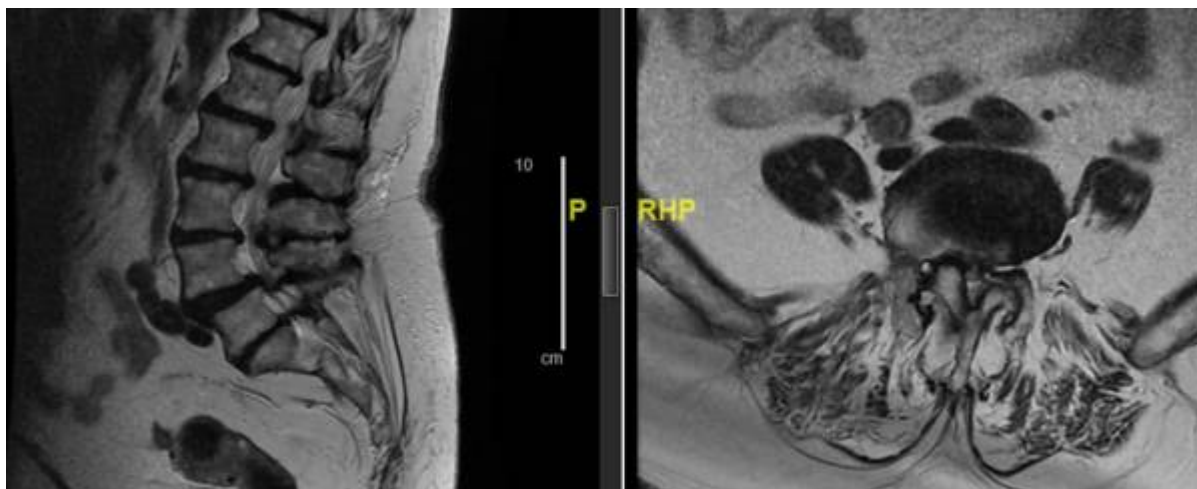


Lumbar degenerative spondylolisthesis magnetic resonance imaging

Several studies have reported that [disc degeneration](#) and signs of [facet effusion](#) detected on [T2 weighted image](#)- MRI can be indicators of potential lumbar [spine instability](#) ^{1) 2)}. However, qualitative MRI evaluations are highly dependent on the subjective judgments of the radiologist. In a study, quantitative value assessments including [disc height](#), [facet fluid](#) thickness, [ligamentum flavum](#) thickness, and disk signal intensity on [T1 weighted image](#) (T1W) and T2W MRI was assessed to identify potential factors and their efficacy in the diagnosis of unstable L4/L5 degenerative spondylolisthesis. A quantitative study of lumbar MRI measurements was conducted to identify predisposing factors indicative of [spinal instability](#) in patients with L4/L5 LDS. In total, 81 patients [58 patients in the stable group (SG) and 23 patients in the unstable group (UG)] who were diagnosed with L4/L5 LDS on X-ray and MRI between January 2021 and January 2022 were included in this study. Disk height, disk signal intensity on T1-weighted (T1W) and T2-weighted (T2W) images, facet joint fluid thickness, and ligamentum flavum thickness was measured on MRI, and the differences in these parameters between the two groups were evaluated. The receiver operating characteristic curve was generated, and the area under the curve (AUC), cut-off value, sensitivity (Se), specificity (Sp), [positive predictive value](#) (PPV), and [negative predictive value](#) (NPV) were calculated for parameters found to be significantly different between the two groups. The facet joint fluid was significantly thicker in the UG than in the SG ($P < 0.01$), and a cut-off value of 1.45 mm was found to have an AUC of 0.77 and an SE, SP, PPV, and NPV of 73.9, 67.2, 69.3, and 69.77%, respectively. No significant differences were identified between the two groups for mean disk height, ligamentum flavum thickness, or disk signal intensity on T1W or T2W images. The facet joint fluid thickness on axial T2W images may represent a useful predictor of spinal instability in patients with LDS. Therefore, spinal instability should be assessed, and additional evaluation methods, such as standing lateral flexion-extension radiographs, should be performed when facet fluid is detected on lumbar MRI ³⁾.

Case from the General University Hospital of Alicante



[Grade 1 lumbar spondylolisthesis](#) L4 over L5 [anterolisthesis](#) with bilateral L5 [spondylolysis](#). At the L4-L5 level, signs of marked multifactorial vertebral [lumbar spinal stenosis](#) are observed due to posteromedial [protrusion](#) of the [intervertebral disc](#), [facet hypertrophy](#), and [yellow ligaments](#). Posteromedial [protrusions](#) at practically all levels studied (from T10-D11 to L4-5) with signs of mild

lumbar spinal stenosis at L2-L3 and **lumbar foraminal stenosis** at left D11-D12, D12-L1, L1-L2, L2-L3, L3-L4 bilateral. The L1/L2 disc also presents a posteromedial extrusion component migrated caudally. Minimal **crush fracture** of the **L5 vertebral body** of subacute-chronic chronology and benign etiology with minimal loss of vertebral body height with minimal **bone marrow edema** at the present time. Left convexity **lumbar scoliosis** and lumbar **hyperlordosis**. Signs of **disc degeneration** and dehydration of thoracolumbar discs.

1)

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