

Posterolateral Fusion for Spondylolysis and Spondylolisthesis – An MRI Analysis after 10 to 25 years follow-up.

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To find a long-term effect of posterolateral fusion for isthmic spondylolysis and spondylolisthesis on lumbar spine. A posterolateral fusion was performed on 56 patients (30 females, 26 males) with an average age of 16 (range 11 to 20) years. A clinical and MRI examination was performed on these patients on average 18 years later (range 11 to 25 years). The size of the spinal canal were assessed. Disc space, degeneration and protrusions were evaluated. Bone marrow changes (Modic I & II), facet joint degeneration and the state of the spinal muscles were assessed. In MR images, none of the patients had lumbar spinal stenosis. In contrast, the spinal canal was wide in the level spondylolysis and spondylolisthesis. Narrowing of the neural foramina was noted in 13 (23%) patients. This was associated usually in severe slip (>50%) and was noted always at the L5-S1 level. Of the studied 332 intervertebral discs 56 (17%) were speckled and 57 (17%) were black and 76 (23%) narrowed. Most commonly speckled / black and narrowed disc was found in the two lowest lumbar levels. Only one patient, 41-year-old female, had prolapse. Modic I and II changes were noted in 7 (2%) and 9 (3%) intervertebral disc levels, respectively. Degenerative-like facet joint hypertrophy was noted in 47 (48%) of the studied levels. Of the patients, seven (12%) had muscular atrophy. Stenosis of neural foramina may be associated to severe spondylolisthesis. Degenerative changes were found most commonly found in the level of the spondylolysis and spondylolisthesis and above fusion level. Bone marrow changes associated with disc degeneration were rare.