

# Facet Effusions are an Independent Risk Factor for Failure after Lumbar Tubular Microdecompression without Stabilization

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## INTRODUCTION:

The identification of radiographic spinal markers associated with failure after lumbar tubular micro decompression (LTM) may help in determining which patients will benefit from the addition of stabilization procedures.

## METHODS:

A prospectively collected database was retrospectively analyzed for all patients undergoing LTM between 2014 – 2023, which includes unilateral laminotomy, unilateral laminotomy (UL) for bilateral decompressions (ULBD), and far lateral decompression (FLD). Patient preoperative magnetic resonance imaging (MRI) studies were reviewed for evidence of static and dynamic degenerative spondylolisthesis, facet effusions, and synovial cysts. The primary outcome was failure following LTM, which was defined as any revision surgery at the index level. Poisson regressions were performed and controlled for age, gender, body mass index, and smoking status, with an offset for total follow-up time.

## RESULTS:

A total of 468 patients met inclusion/exclusion criteria with median follow up of 2.9 (2.1, 3.9) years. Static spondylolisthesis was not associated with failure [1.00 (95% CI: 0.97, 1.03), p = 0.996] while increases in dynamic spondylolisthesis [1.13 (95% CI: 1.01, 1.26), p = 0.034] and facet effusions [1.22 (95% CI: 1.01, 1.48), p = 0.040] predicted increased risk for failure. Presence of spinal synovial cysts was not associated with failure [0.6 (95% CI: 0.1, 2.4), p = 0.469].

## DISCUSSION AND CONCLUSION:

Dynamic spondylolisthesis and facet effusions are independent predictors of failure after isolated LTM, while static spondylolisthesis and synovial cysts without other markers are not significantly associated with failure. These findings emphasize the importance of considering these radiographic spinal markers in the decision-making process when performing LTM alone for lumbar spinal stenosis. Patients with dynamic spondylolisthesis or facet effusions should be carefully evaluated, and the addition of stabilization procedures may be considered to optimize outcomes.

Cumulative Failure Incidence of Lumbar Tubular Microdecompression Surgery Over Five-Year Follow Up

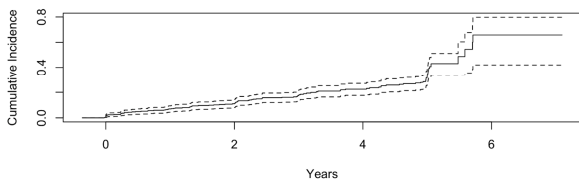


Table 1. Comparison of Pre-Op and Two Years Post-Op ODI Scores for Synovial Cysts, Static Scoliosis, Dynamic Scoliosis, and Facet Effusion.

	Pre-Op	2 Years Post
<b>Synovial Cysts</b>		
No	54.8 (16.5)	26.1 (19.5)
Yes	51.4 (14.7)	22.2 (20.2)
<b>Static Scoliosis</b>		
No	55.4 (16.5)	25.9 (20.5)
Yes	54.0 (15.6)	25.8 (17.2)
<b>Dynamic Scoliosis</b>		
No	61.1 (18.9)	24.7 (18.5)
Yes	57.2 (18.3)	27.0 (17.1)
<b>Facet Effusion</b>		
No	54.8 (16.9)	26.2 (19.9)
Yes	54.3 (15.1)	25.3 (18.6)

Format: mean (standard deviation)