Dynamic posture-related pain

Neurogenic claudication symptoms are typically posture-related; symptoms are aggravated when the spine is extended (in upright stance) but eased when spine is flexed (sitting or lying supine) [1].

The theory behind the syndrome is that the exacerbation results from dynamic stenoses, such as in degenerative spondylolisthesis, which causes posture-related compression. Typically, patients experience relief by spine flexion, when there is indirect decompression of the neural elements at the stenotic motion segment.

Evidence on predicting the success of indirect decompression via extreme lateral interbody fusion (XLIF) is scarce. The authors investigated if patients who could achieve a pain-free position preoperatively would derive clinical benefit from XLIF without direct decompression.

Data from 50 consecutive patients who underwent XLIF with and without direct decompression by a single surgeon from January 2014 to August 2017 was collected. The primary outcome is the rate of failure of patients who underwent XLIF without direct decompression, characterized by the persistence of pain postoperatively that required reoperations within 6 months postoperatively. Secondary outcomes are clinical outcomes and patient-reported quality of life outcome data, including a visual analog scale for leg (VASL) and back (VASB) pain, Oswestry Disability Index (ODI), and Physical Component Score (PCS) and Mental Component Score (MCS) of SF-12, for up to 2 years postoperatively.

One patient with preoperative dynamic posture-related pain who underwent XLIF without direct decompression subsequently had a reoperation due to persisting pain. Statistically significant improvement was achieved across all patient-reported outcomes ($P < .05$): improvement of 68% for VASL, 61% for VASB, 50% for ODI, 33% for PCS, and 11% for MCS of SF-12 at last follow-up. Six patients had thigh symptoms that resolved.

The simple clinical criterion based on postural pain status preoperatively may help clinicians in patient selection for indirect decompression of XLIF without the need for direct decompression. Further studies with larger cohorts are warranted to establish the validity of the algorithm [2].

1)
Takahashi K, Kagechika K, Takino T, Matsui T, Miyazaki T, Shima I. Changes in epidural pressure during walking in patients with lumbar spinal stenosis. Spine (Phila Pa 1976). 1995 Dec 15;20(24):2746-9. PubMed PMID: 8747254.
2)
Lim KZ, Daly C, Brown J, Goldschlager T. Dynamic Posture-Related Preoperative Pain as a Single Clinical Criterion in Patient Selection for Extreme Lateral Interbody Fusion Without Direct Decompression. Global Spine J. 2019 Sep;9(6):575-582. doi: 10.1177/2192568218811317. Epub 2018 Nov 15. PubMed PMID: 31448189; PubMed Central PMCID: PMC6693074.