Destabilization

One risk of established decompression techniques for lumbar spinal stenosis is the resection of facet joints, especially if they are steeply configured, promoting destabilization.

Minimally invasive bilateral crossover decompression aims to preserve the facet joints and thus the stability of the spine. The purpose of a study of Klingler et al. was to demonstrate the feasibility and early results of this technique.

This retrospective case series includes 10 consecutive patients with lumbar spinal stenosis and steep-angle (<35 degrees) facet joints who were treated with minimally invasive bilateral crossover decompression. Eleven segments were decompressed, most commonly L3/L4 (63.6%), followed by L1/L2 and L2/L3 (18.2% each). The effectiveness of surgical decompression was assessed by self-reporting questionnaires.

After a follow-up of 10.5 months, the Symptom Severity Scale and Physical Function Scale of the Swiss Spinal Stenosis Questionnaire improved by 0.9 ($p < 0.05$) and 0.7 points, respectively. The mean Oswestry Disability Index improved from 53.9 to 34.6 ($p < 0.05$). Local and radiating pain under strain showed statistically significant improvement on the Visual Analog Scale (8.9 vs. 5.0 and 8.4 vs. 4.6, respectively). Maximum walking distance increased from 190 to 1,029 m. Apart from one patient requiring surgical decompression of an adjacent segment, there were no reoperations, neurological deteriorations, or other complications.

The results of this study indicate that minimally invasive bilateral crossover decompression is a promising technique for the treatment of spinal canal stenosis. With its design to spare facet joints, it can potentially reduce the risk of spinal instability, especially in patients with steep facet joint [1)]

1)
Klingler JH, Hubbe U, Scholz C, Krüger MT. Facet-Sparing Decompression of Lumbar Spinal Stenosis: The Minimally Invasive Bilateral Crossover Approach. J Neurol Surg A Cent Eur Neurosurg. 2021 Jan 21. doi: 10.1055/s-0040-1718521. Epub ahead of print. PMID: 33477189.