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Minimally invasive surgical treatment for severe symptomatic lumbar spinal stenosis: A case study

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Background: Minimally invasive spine surgeries using endoscopic techniques have shown to be effective at treating lumbar spinal stenosis. However, there lacks evidence that bilateral decompression of the nerve root can be achieved through a unilateral endoscopic technique. Thus, this case study examines whether an outpatient surgical treatment for severe lumbar spinal stenosis (LSS) requiring bilateral decompression through a unilateral approach can be performed endoscopically.

Methods: A 63-year old non-smoking African American male presented with symptoms of pain in the left buttock that radiated into the posterior left thigh. Magnetic resonance imaging (MRI) confirmed severe L4/5 spinal stenosis bilaterally. The patient underwent out-patient minimally invasive unilateral laminotomy for bilateral L4/5 decompression of central canal stenosis. This procedure included a partial facetectomy with removal of the contralateral ligamentum flavum, and decompression of the lateral recesses.

Results: The procedure lasted one hour and 16 minutes. Post-operative MRI confirmed bilateral decompression of the spinal canal. The patient tolerated the surgery well and was released two hours post-operative awake and in stable condition. There were no operative complications and an estimated blood loss of 25 milliliters. The patient reported the ability to walk with complete resolution of ridiculer pain, tingling and numbness the same day as surgery as well as at 3-, 6- and 18-months post-operatively.

Conclusion: This case study indicates that an outpatient endoscopic unilateral laminotomy for bilateral decompression of the central canal and lateral recesses is effective at reducing pain and disability level immediately following surgery and up to 18-months post-operative. Results also indicate that this outpatient procedure can treat severe LSS with short operative times, no operative complications, and minimal blood loss.

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