

Microendoscopic Decompression Surgery for Lumbar Spinal Canal Stenosis via the Paramedian Approach: Preliminary Results

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Abstract

The objective of this study was to evaluate the efficacy of a microendoscopic spinal decompression surgical technique using a novel approach for the treatment of lumbar spinal canal stenosis (LSCS). The following modifications were made to the conventional microendoscopic bilateral decompression via the unilateral approach: the base of the spinous process was first resected partially to secure a working space, so as not to separate the spinous process from the lamina. The tip of the tubular retractor was placed at the midline of the lamina, where laminectomy was performed microendoscopically. A total of 126 stenotic levels were decompressed in 70 patients. The mean operating time per level was 77.0 minutes, and the mean intraoperative blood loss per level was 15.0 mL. There were no dural tears or neurological injuries intraoperatively. Fracture of the spinous process was detected postoperatively in two patients, both of whom were asymptomatic. All patients could be followed up for at least 12 months. Their median Japanese Orthopaedic Association (JOA) score improved significantly from 16 points preoperatively to 27.5 points after the surgery ($p < 0.001$). The case series showed that the modifications of the technique improved the safety and ease of performance of the microendoscopic decompression surgery for LSCS.

Keywords

microendoscopic surgery - posterior decompression - minimally invasive surgery - lumbar spinal canal stenosis - kissing spine - spinous process

通過正中旁位進入法以微創減壓手術治療腰椎管狹窄症：初步結果。

本研究的目的是評估使用一種新的方法以微創脊髓減壓手術治療腰椎管狹窄（LSCS）的療效。以下的方式是將傳統的微創雙側減壓修改成單側進入：首先棘突的底部會進行部份切割以確保一個工作空間，這樣就不會分開棘突和。將管狀牽開器的尖端放置在椎板的中線，並在其中進行微創式椎板切除術。70 位病人共 126 個狹窄的節段被減壓。平均的手術時間為 77.0 分鐘，手術中的平均出血量為 15.0 毫升。手術中沒出現硬膜撕裂或神經損傷。兩名病人於手術後檢測出棘突骨折，但兩人均無症狀。所有患者至少跟進 12 個月。他們的日本骨科協會（JOA）評分中位數由手術前的 16 分顯著改善至手術後的 27.5 分（ $P < 0.001$ ）。這系列病例顯示修改了的技術提高了微創減壓手術治療腰椎管狹窄的安全性和高性能性。