



Commentary



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See the article “Full-Endoscopic Resection of a Lumbar Intradural Tumor (Schwannoma): Video Case Report and Description of the Surgical Technique” via <https://doi.org/10.14245/ns.2449080.540>.



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A Commentary on “Full-Endoscopic Resection of a Lumbar Intradural Tumor (Schwannoma): Video Case Report and Description of the Surgical Technique”

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Endoscopic spine surgery (ESS) is a prominent advancement within minimally invasive spine surgery, offering significant benefits, including smaller incisions, reduced complications, and faster recovery times.¹ Initially developed for treating degenerative spinal diseases (DSD), ESS has evolved remarkably. Recent clinical trials and systematic reviews consistently highlight its efficacy and safety in managing nearly all types of DSD, reinforcing its position as a reliable alternative to conventional open procedures.²

The indications for ESS are now expanding beyond DSD to encompass complex spinal pathologies, including spinal trauma, infections, deformities, and tumors.³⁻⁵ This evolution reflects ongoing improvements in instrumentation, surgical techniques, and surgeon expertise. However, despite these advances, ESS for intraspinal tumors remains a formidable challenge due to its inherent technical demands. Achieving precise dissection, safe tumor removal and meticulous dural repair under the constraints of a limited working corridor necessitates advanced skills and specialized techniques. Such high-level endoscopic techniques remain particularly challenging for general spine surgeons. The technical complexity of ESS for intraspinal tumors involves multiple hurdles, including the steep learning curve, intricate anatomy, and the risk of complications. Overcoming these barriers will require continuous innovation, standardized training programs, and collaborative efforts to make ESS more accessible and practical for a broader spectrum of surgeons.⁶

The authors' video presentation serves as a milestone in this challenging field, demonstrating a validated technique for endoscopic intradural tumor removal.⁷ Key surgical steps—including laminotomy, dural incision, tumor dissection, tumor removal, hemostasis, and dural repair—are meticulously presented, offering valuable insights for spine surgeons seeking to master this complex procedure. Such demonstrations are critical as they provide practical guidance, reduce the learning curve, and enable the safe adoption of ESS for intraspinal tumors.

Looking ahead, the growing application of ESS in spinal disorders holds tremendous promise. Technological innovations, such as high-definition endoscopes, advanced hemostatic agents, multiple working channels, and robotic-assisted techniques, are likely to fur-

ther overcome current limitations. As ESS continues to evolve, prospective clinical studies and long-term outcome analyses will be essential to validate its efficacy and safety compared to traditional microsurgical approaches.⁸

This video goes beyond showcasing the techniques for endoscopic intradural tumor removal; it encapsulates the cutting-edge advancements in modern ESS. It comprehensively demonstrates precise bone resection using a burr, meticulous dissection and mass removal with fine forceps, thorough hemostasis, primary dural closure under endoscopic guidance, and efficient handling of the endoscope. Readers can learn the fundamental and advanced techniques essential for mastering ESS through this video.

It underscores the potential for ESS to become a viable and effective treatment modality for other spinal pathologies beyond DSD. Continued advancements and collaborative efforts within the spine surgery community are vital to refine techniques, optimize outcomes, and expand the scope of ESS in spine total care. Ultimately, ESS will solidify its role as a cornerstone in the treatment of complex spinal diseases, including intraspinal tumors, offering patients safer and more effective surgical solutions.

- **Conflict of Interest:** The author has nothing to disclose.

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