

## Editorial

# Strategies for Globalizing Endoscopic Spine Surgery



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The development of arthroscopic, endoscopic, robotic, and laparoscopic techniques has revolutionized the delivery of surgical care throughout the world. Particularly, arthroscopic techniques in musculoskeletal care now allow for patients to achieve similar outcomes with significantly less postoperative pain, faster recovery, and shorter hospitalization, compared to traditional open procedures. For a period of time, spine surgery has lagged behind other surgical specialties in the development of minimally invasive techniques that can achieve similar clinical outcomes as traditional open approaches. However, patient demand, market pressures, trends towards performing spine surgery in ambulatory surgery centers, and technological advances have increased the widespread adoption of minimally invasive spine surgery, particularly over the last decade.

Endoscopic spine surgery (ESS) is one of the least invasive spine surgery techniques currently available, allowing for decompressions and fusions through single or multiple sub-centimeter percutaneous incisions. The first generation of ESS was described in the late 1980s when Kambin incorporated endoscopic visualization with percutaneous procedures.<sup>1</sup> Improved optics, larger working channels, enhanced instrumentation and continuous irrigation significantly advanced ESS to what it is today. Currently, there are several endoscopic platforms, constantly evolving techniques, and a growing body of scientific literature demonstrating the safety and efficacy of ESS to treat a multitude of cervical, thoracic, and lumbar spine pathology.

ESS procedures have significantly increased in recent years, with the highest utilization currently in Asian markets. Recent studies demonstrate that approximately 70% of Asian spine surgeons perform ESS, compared to significantly less in the United States and Europe.<sup>2,3</sup> The reason for the relative lag in the adaptation of ESS across the United States is multifactorial, but in part due to capital cost required to start an ESS program, limited billing codes for ESS, a steep learning curve, and lack of formal training.<sup>4,5</sup> Currently there are only a handful of spine fellowships throughout the United States that offer a robust training experience in ESS. Most United States spine surgeons learn endoscopy through weekend courses or via domestic and international travelling fellowships. National spine societies such as the North American Spine Society (NASS) are trying to combat this void by offering formalized training sessions, such as at the NASS International Meeting in Bangkok July 2023, cochaired by the senior author of this editorial. As the popularity of ESS continues to increase in the United States, it is likely that a growing number of fellowship programs will invest in acquiring ESS technology and training currently faculty such that they can train the next generation of spine surgeons.



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The drive to transition more spine surgeries to the ambulatory surgery center, patient demand for faster recovery and less postoperative pain, and surgeon interest in learning minimally invasive spine surgery has led to an all-time high interest in ESS globally. In order for the field to continue to grow, it is paramount to continue to demonstrate the safety, efficacy, and possible superiority of ESS to treat spine pathology. Special issues such as the current issue in *Neurospine* are paramount to evolving the field. There continues to be a need for unbiased peer-reviewed literature assessing outcomes, complications, and cost-efficacy compared to more traditional procedures to treat similar pathology. More surgeons need to publish their outcomes, as the majority of the scientific literature is published by providers and centers with significant ESS experience, thereby the translation of their results to other spine surgeons remains questioned.

Such as arthroscopy revolutionized the care of many musculoskeletal disorders and is now a mainstay of treatment, the authors of this article are confident ESS is entering a golden age in the realm of spine surgery and its adoption will continue to rise globally.

• **Conflict of Interest:** The authors have nothing to disclose.

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