



The Usefulness and Advantages of Uniportal Fully Endoscopic Spinal Surgery for Various Lumbosacral Pathologies

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This special issue explores various pathologies of challenging lumbosacral lesions through the use of the uniportal endoscopic technique. Our goal is to discuss approaches and methods that improve our understanding of these pathologies and contribute to successful surgical outcomes. I would like to extend my sincere thanks to Dr. Koichi Sairyo and Dr. Ohara Yoko from Japan, Dr. Kuo-Tai Chen and Dr. Se-Yi Chen from Taiwan, and Dr. Dong-chan Lee and Dr. Jun-seok Bae from Korea. Their role as editors has been crucial in ensuring that this special issue presents excellent papers on fully endoscopic spinal surgery.

Lumbosacral structures, including those in the lower lumbar region, are important structures that support the entire body weight during upright walking in humans. As degenerative changes progress, common conditions such as disc herniation and spinal stenosis can lead to neurological symptoms [1,2].

The minimally invasive approach to the lumbosacral region presents significant challenges due to anatomical complexities. Factors including the iliac crest, hypertrophy of the L5 transverse process, and Bertolotti syndrome contribute to the complexity of these surgical procedures [3-5].

In cases of lumbosacral lesions, particularly at the L5-S1 level, the transforaminal approach often presents challenges, leading to a preference for the interlaminar approach, which is generally considered easier [6,7]. However, the transforaminal approach can be effective for conditions such as far lateral disc herniation, foraminal stenosis, and far-out syndrome [2,3].

Successfully performing the fully endoscopic transforaminal approach necessitates a comprehensive understanding of lumbosacral anatomy and the use of various techniques to facilitate the surgical procedure.

The transforaminal approach provides several advantages, especially in elderly patients for whom surgery under local anesthesia is possible [3,8]. This method bypasses the spinal canal, which helps minimize the formation of epidural scar tissue and reduces the risk of dural tears. However, careful consideration is required due to the potential for frequent irritation of the exiting nerve root, which can be attributed to the difficulty of access.

Uniportal fully endoscopic spinal surgery, which involves using a single portal for endoscope insertion and performing all procedures within the endoscope, offers a more minimally invasive

approach than biportal endoscopic surgery. The latter requires additional working space to insert both the endoscope and surgical instruments. However, the uniportal method is limited to a single surgical direction, which can present challenges with incorrect targeting. Additionally, the use of instruments is confined to passage through the endoscope, requiring a high level of skill and proficiency [3,9,10].

Nevertheless, once the learning curve is overcome, this approach has the advantage of preserving normal structures while selectively removing pathological areas, surpassing many other surgical techniques in this regard [11].

This special issue presents articles on various treatment methods for lumbosacral pathologies, which are anatomically challenging to access, using uniportal fully endoscopic surgery. We hope that these foundations will lead to further advancements in the field.

NOTES

Conflict of Interest

CIJ, a member of the Editorial Board of Journal of Minimally Invasive Spine Surgery & Technique, is the corresponding author of this article. However, he played no role whatsoever in the editorial evaluation of this article or the decision to publish it. Author has no conflict of interest to declare.

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