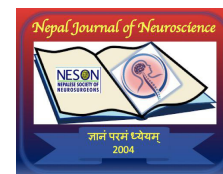


Degenerative Spine surgery: Our perspective

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Editorial

Degenerative spinal diseases of the lumbar region remain one of the leading causes of disability across various age groups, significantly affecting patients' quality of life. When conservative management fails or when neurological deficits are evident, surgical intervention becomes the mainstay of treatment in such cases.

Over the past two decades, there has been remarkable progress in spinal surgery techniques — evolving from traditional open procedures to microscopic and, more recently, minimally invasive approaches including Endoscopic Surgery. These advancements have profoundly improved surgical outcomes, particularly within our local context.¹

Techniques such as Transforaminal Lumbar Interbody Fusion (TLIF) and pedicle screw fixation have become standard practices among neurosurgeons. The fundamental principles of spinal surgery — maintaining spinal biomechanics, minimizing tissue trauma, ensuring rapid recovery, and preserving neurological function — are now widely emphasized and routinely achieved through modern operative strategies.

Uniportal and biportal endoscopic spine surgeries are now widely practiced in Nepal, with many centers performing advanced procedures such as discectomy, decompression, and interbody fusion. Fellowship training, live demonstrations, and workshops have strengthened local expertise, while the recognized benefits—minimal incision, reduced pain, and

faster recovery—have driven rising patient demand. According to Telfeian et al. endoscopic spine surgery offers comparable outcomes to open procedures with less morbidity and quicker rehabilitation.²

However, with the growing number of neurosurgeons and the widespread availability of advanced fixation systems, there has been a noticeable trend toward overutilization of spinal fixation procedures in cases where conservative or less invasive alternatives might suffice. This shift calls for critical reflection within the surgical community.

In earlier years, patients had limited access to surgical options and little understanding of their disease process, often accepting whatever intervention was available. Today, patients are far more informed — frequently researching their diagnoses and potential treatments before consultation. This heightened awareness has, in turn, placed increasing pressure on surgeons to remain updated with current evidence-based practices and the latest technological innovations.

The introduction of intraoperative neuromonitoring (IONM) has greatly improved the safety of spinal surgery by enabling real-time monitoring and preservation of neural function. Its growing use in neurosurgical centers across Nepal has led to better postoperative outcomes and higher patient satisfaction. As reported by Zhou et al. IONM significantly reduces the risk of neurological deficits during spinal procedures.³

The debate between neurosurgeons and orthopedic spine surgeons over who should perform spinal surgeries exists in Nepal as well. In Nepal, spinal surgery forms a major component of neurosurgery residency training, where comprehensive exposure to spinal and neural procedures is provided. In contrast, orthopedic training includes limited spine exposure, and additional fellowship or specialization is usually required for advanced spine practice.

Surgeons (Neurosurgeons/ orthopedics Spine) best trained in spinal stabilization should focus on fixation procedures, while those with expertise in neural structures handling—like typically neurosurgeons—should operate on major spinal cord / nerve decompression as well as different varieties of Spinal Tumors for better outcome. However, Lambrechts et al. (2023) concluded that “both orthopedic and neurosurgical spine surgeons achieve comparable overall outcomes, with results largely dependent on surgeon training and case complexity rather than specialty.”⁴

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Setting aside egos and recognizing individual limitations in complex spine cases, collaborative practice between neurosurgeons and orthopedic spine surgeons leads to better outcomes and fewer complications.

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