JOURNAL OF TURKISH SPINAL SURGERY

EDITORIAL

Bridging Innovation, Clinical Practice, and Fundamental Knowledge in Spine Care

The current issue of the Journal of Turkish Spine Surgery presents a broad spectrum of studies that collectively reflect the multidisciplinary and continuously evolving nature of modern spine care. Covering topics from pediatric deformity and spinal oncology to lumbar disc surgery, anatomical research, rehabilitation, sports medicine, and technical innovation, this issue highlights the diversity of challenges encountered by spine specialists while emphasizing the importance of evidence-based clinical decision-making.

One of the defining characteristics of spine surgery is the necessity to integrate knowledge from multiple disciplines. Advances in surgical techniques alone are insufficient to optimize patient outcomes unless they are accompanied by improvements in diagnosis, conservative management, anatomical understanding, biomechanics, rehabilitation, and complication prevention. The articles presented in this issue exemplify this comprehensive approach.

The management of early-onset scoliosis remains one of the most demanding areas in pediatric spine surgery. The study evaluating the efficacy of serial derotational casting contributes to the ongoing discussion regarding growth-preserving treatment strategies. Conservative interventions capable of delaying or reducing the need for surgical procedures are of considerable interest, particularly in young children where preserving spinal and thoracic growth is critical. As treatment paradigms continue to evolve, high-quality clinical data regarding non-operative techniques remain invaluable.

Complications continue to represent a major concern across all fields of spine surgery. The investigation into the timing and mechanisms of unplanned reoperations following surgery for spinal metastases addresses an issue of increasing clinical importance. Patients undergoing surgery for metastatic spinal disease often present with complex medical conditions, limited physiological reserve, and diverse oncological backgrounds. Better understanding of the causes and temporal patterns of early reoperations has the potential to improve perioperative planning, optimize patient selection, and ultimately reduce morbidity in this vulnerable patient population.

Lumbar disc herniation remains among the most frequently treated spinal disorders worldwide. The single-center experience examining fragmentectomy in Carragee type I and III lumbar disc herniations revisits an enduring surgical debate regarding the extent of disc removal necessary to balance recurrence risk with preservation of disc function. As minimally invasive philosophies continue to influence spine surgery, studies evaluating procedure-specific outcomes remain highly relevant for daily clinical practice.

The relationship between spinal health, posture, and physical activity is another recurring theme in this issue. The assessment of trunk asymmetry and postural disorders in Optimist and Laser class sailors expands our understanding of how sport-specific biomechanical demands influence musculoskeletal development. Such investigations not only contribute to sports medicine but may also provide valuable insights into preventive strategies for young athletes participating in asymmetric sports. Similarly, the case-control study investigating plantar cutaneous sensation and postural control in individuals with non-specific chronic low back pain reflects the growing appreciation of sensorimotor mechanisms underlying chronic spinal disorders. Contemporary management of chronic low back pain increasingly recognizes the importance of proprioception, balance, and neuromuscular control alongside structural pathology. Research exploring these interactions may facilitate the development of more comprehensive rehabilitation programs.

Anatomical precision remains the foundation of safe spinal instrumentation. The morphometric analysis of dry human atlas (C1) and axis (C2) vertebrae provides valuable anatomical data relevant to C1-C2 screw placement. As upper cervical fixation techniques become increasingly sophisticated, population-specific morphometric studies continue to play an essential role in improving surgical safety and minimizing neurovascular complications. Such investigations also serve as important educational resources for both trainees and experienced surgeons.

Technical innovation has historically driven many of the major advances in spine surgery. The Technical Note describing the Z-Rod technique for geometry-independent removal of pedicle screws represents the practical ingenuity frequently required in revision spinal procedures. Although revision surgery often presents unique intraoperative challenges, simple and reproducible technical

solutions can substantially improve operative efficiency and reduce unnecessary instrumentation-related difficulties. Sharing these experiences contributes meaningfully to the collective surgical knowledge of our community.

Taken together, the studies included in this issue demonstrate the remarkable breadth of contemporary spine research. They remind us that progress in spine care depends not only on groundbreaking technological developments but also on careful clinical observation, meticulous anatomical investigation, thoughtful rehabilitation research, and continuous refinement of surgical techniques. Each contribution adds another piece to the complex puzzle of optimizing patient care.

Another noteworthy aspect of this issue is the strong contribution of researchers from multiple institutions across Türkiye. Such collaboration reflects the growing academic productivity of the national spine community and its increasing engagement with clinically relevant research questions. Continued multicenter collaboration, standardized methodologies, and prospective investigations will undoubtedly strengthen the scientific impact of future studies.

As editors, we sincerely thank all authors for submitting their valuable work, the reviewers for their careful and constructive evaluations, and our readers for their continued support of the Journal of Turkish Spine Surgery. The strength of any scientific journal depends upon the commitment of its contributors and the integrity of its peer-review process. Together, these efforts foster scientific dialogue and ultimately contribute to improving patient outcomes.

We hope that the articles presented in this issue will stimulate further discussion, inspire future research, and provide practical insights for clinicians involved in the care of patients with spinal disorders. As spine surgery continues to evolve through innovation, collaboration, and evidence-based practice, we remain committed to serving as a platform for the dissemination of high-quality scientific knowledge.

Enjoy reading this issue.

Co-Editor-in-Chief

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