Introduction: Adult spinal deformity

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SINCE Galen first coined the terms “scoliosis,” “lordosis,” and “kyphosis” in the 2nd century A.D., the evaluation and management of spinal deformity has remained a controversial and challenging endeavor. It is no secret that neurosurgeons today are playing an ever larger role in the care of patients with scoliosis and other spinal deformities. The field of adult spinal deformity is experiencing an explosion of interest, and the need for better evidence-based strategies to care for these conditions is intensifying as the incidence and prevalence increase in our society.

This issue of Neurosurgical Focus presents several timely reviews of adult spinal deformity as well as original articles with contributions to the field. 17 articles in total. Highlights include the first article, a review from Silva and Lenke on the evaluation and management of adult degenerative scoliosis, Yadla and colleagues present an informative meta-analysis of radiographic and clinical outcomes in over 3000 patients who underwent surgery for adult scoliosis, a discussion of which occurs in a podcast accompanying this issue.

Kuntz and colleagues report on their software for presurgical planning of sagittal imbalance that also allows virtual surgical manipulation of the spine to test putative constructs. The authors are making this “freeware” available to colleagues in the field. Several articles appear regarding the extreme-lateral, transpsoas approach in the treatment of scoliosis, one from the University of Pittsburgh group, one from the University of South Florida group, one from the Cedars-Sinai group, and one from the University of Miami/University of California, San Francisco. The extreme-lateral approach is one of the newest strategies in the management of adult spinal deformity; a frank discussion of the major complications in applying the approach to scoliosis is a welcome addition to the literature.

The minimally invasive theme is furthered in a follow-up study by Anand and colleagues reporting their mid- and long-term outcomes following minimally invasive scoliosis correction, and in Wang and Mummaneni’s report of their initial minimally invasive experience. In both instances, the results lend further support to the use of these techniques in selected patients.

The issue also includes a treatment algorithm for Parkinson disease; a description of a novel S2-alar-iliac pelvic screw construct; intraoperative CT-based neuro-navigation for placing instrumentation in deformity; a review of posterior spinal osteotomy techniques; unilateral interbody cage placement for coronal plane deformity correction; and 2 articles on cervical deformity.

We hope that you enjoy this issue of Neurosurgical Focus devoted to the latest clinical issues in spinal deformity surgery.