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INTRODUCTION

Adult spinal deformity

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It has been recognized for more than 35 years that adult spinal deformity (ASD) is a common condition in the elderly that can frequently cause significant pain and disability.[2,6] Adults with painful and disabling spinal deformity appear to benefit from surgical treatment when compared with nonsurgical treatment, given the proper indications, but the surgery is costly and is associated with a high rate of complications.[1,5,7,11,12] For many years it was thought that the principal cause of the pain and disability associated with ASD was the severity of the scoliosis in the coronal plane.[2] More recently, it has been clearly demonstrated that the greater the mismatch of spinopelvic parameters compared to normal values, the greater the pain and disability associated with the deformity.[3,13] Improvement of a mismatch of spinopelvic parameters to more normal values has been shown to improve multiple health-related quality of life measures.[9,10,12] Recent advances in preoperative evaluation and risk modification, predictive analytics for accurate risk calculation, better intraoperative anesthetic and surgical management techniques, and improvement in postoperative care have permitted the successful management of increasingly more severe spinal deformities in patients with associated medical comorbidities.[4,8]

This issue of *Neurosurgical Focus* includes cutting-edge research on the latest concepts of evaluation and utilization of spinopelvic parameters in ASD. Several articles identify new techniques for evaluation of patients with ASD, along with medical optimization and risk stratification, with the goals of making the outcomes of deformity surgery safer and more predictable. This issue also includes several articles highlighting new surgical techniques used for treatment of complex deformity that have promise for reducing surgery-related morbidity. Factors associated with the cost-effectiveness of the surgical management of ASD were analyzed, with recommendations on measures to reduce the financial consequences of these episodes of care. Due to the maturation of several national and international patient databases aggregating the management data on hundreds of patients, the evaluation and management of patients with ASD is rapidly evolving. Several of the articles include the information gleaned from these sources. In this issue we have tried to present a spectrum of the latest research in the field of ASD, with the hope that this will lead to fewer complications and improved outcomes in patients with ASD.

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Disclosures

The authors report the following conflicts. Dr. Shaffrey—Medtronic: royalties, patents, consultant; NuVasive: royalties, patents, consultant, stockholder; Zimmer Biomet: royalties, patents, consultant; K2M: consultant; Stryker: consultant; In Vivo: consultant; NIH: grants; Department of Defense: grants; ISSG: grants; DePuy Synthes: grants; AO: grants. Dr. Smith—Zimmer Biomet: consultant, honorarium for teaching, royalties; NuVasive: consultant, honorarium for teaching; AlloSource: consultant; DePuy Synthes: research grants to study group; K2M: consultant, honorarium for teaching; AOSpine: fellowship funding; NREF: fellowship funding. Dr. Ames—DePuy Synthes: consultant, royalties; Medtronic: consultant; Stryker: consultant, royalties; Zimmer Biomet: royalties; Fish & Richardson PC: patents, direct stock ownership. Dr. Alanay—Comprehensive Spine Center at Acibadem Maslak Hospital; Director Orthopaedic Spine Unit, Acibadem Altunizade Hospital; Acibadem University School of Medicine; Department of Orthopaedics and Traumatology; Director, Spine Fellowship Programme. Dr. Ha—Korean Air: consultant; CG Bio: consultant, research grant; Genos: research grant; L&K Biomed: consultant; Medissey: consultant, fellowship training fund; GS Medical: research grant.

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