Preface

The practice of spinal deformity surgery is changing, fueled in large part by innovations in technology that offer surgeons improved options and outcomes for their patients. Over the past decade, new instrumentation has been introduced and significant advances have been made for treating spinal deformity that have led to a wide variety of options. For example, there has been an increased understanding of the importance of the sagittal plane in both pediatric and adult patients. In addition, the increased use of screw fixation with posterior osteotomies has allowed greater degrees of spinal deformity correction, and similar advances in spinal cord monitoring have allowed aggressive corrections to be performed safely, thus limiting the risk of spinal cord injury. The challenge of treating complex spinal deformity often demands innovative solutions and greater skill than the initial surgical intervention; strategic planning is the critical element in successful surgical execution and outcome.

When faced with any difficult problem, we typically turn to the literature and to the masters who have preceded us to guide our way. This book is in response to the need for a source of information to which to turn when confronted with complex deformity cases. The contributors to this book, both neurosurgeons and orthopedic surgeons, were carefully selected for their extensive experience and technical skill; they have added a tremendous amount of depth to this project. A virtual gold mine of information is contained within these pages as these authors take the reader through the essential planning process and the step-by-step technique for achieving superior results.

This book is organized into four parts. Part I focuses on recent advances in spine technology, starting with biomechanics, deformity classification, conservative management of spinal deformity, and surgical indications. Subsequent chapters discuss technologic innovations in spine surgery, including spinal biologics, image guidance, and minimally invasive approaches for anterior and posterior spinal fusion. We regard this introductory section as essential reading for the neophyte surgeon learning basic technique as well as for the experienced surgeon seeking to refine and enhance skills. The remaining Parts focus on state-of-the-art surgical techniques for treating spinal deformity in the cervical spine (Part II), the thoracic spine (Part III), and the lumbosacral spine (Part IV). Specific chapters have also been included on managing deformities at the cervicothoracic, thoracolumbar, and lumbosacropelvic junctions. In addition, we have included chapters on both open and minimally invasive techniques.

We were well aware of the organizational challenges that a multiauthored textbook presents and have made every effort to avoid weaknesses and build on obvious strengths. Thus great care was taken to develop consistent formats for the technique

chapters in Parts II through IV. To make the reading process as smooth as possible, text and illustrations are in close proximity to each other. Hundreds of case examples and operative sequences have been described and illustrated to assist the reader in understanding the nuances of various operative procedures. In addition, a clinical problem-solving section in each surgical technique chapter includes a treatment algorithm to help the surgeon select the most expedient surgical approach. Key steps of the technique are highlighted in bulleted lists to reveal how the leading experts plan and execute each surgery. A DVD with operative procedures is included with this book to enhance the learning experience. These videos depict a few of the key techniques discussed in the text.

We hope that the readers and patients will be the beneficiaries of this attempt to harvest the wisdom from those who have risen to the challenge of treating spinal deformities. Our desire is that this collective effort will stimulate new ideas and contribute to the further development of our specialty.

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