

Preface

There has been a major resurgence in stereotactic neurosurgery for the treatment of Parkinson's disease and tremor in the past several years. More recently, interest has also been rekindled in stereotactic neurosurgery for the treatment of dystonia and other movement disorders. This is based on a large number of factors, which include recognized limitations of pharmacologic therapies for these conditions, better understanding of the functional neuroanatomy and neurophysiology of the basal ganglia, use of microelectrode recording techniques for lesion localization, improved brain imaging, improved brain lesioning techniques, the rapid emergence of deep brain stimulation technology, progress in neurotransplantation, better patient selection, and improved objective methods for the evaluation of surgical results. These changes have led to increased collaboration between neurosurgeons, neurologists, clinical neurophysiologists, and neuropsychologists, all of which appear to be resulting in a better therapeutic result for patients afflicted with these disorders.

The aim of *Surgical Treatment of Parkinson's Disease and Other Movement Disorders* is to create a reference handbook that describes the methodologies we believe are necessary to carry out neurosurgical procedures for the treatment of Parkinson's disease and other movement disorders. It is directed toward neurologists who participate in these procedures or are referring patients to have them done, to neurosurgeons who are already carrying out these procedures or contemplating becoming involved, and to other health care professionals including neuropsychologists and general medical physicians seeking better familiarity with this rapidly evolving area of therapeutics. Several books concerning this subject currently exist, most of which have emerged from symposia on surgical treatment of movement disorders. We have tried here to provide a systematic and comprehensive review of the subject, which (where possible) takes a "horizontal" view of the approaches and methodologies common to more than one surgical procedure, including patient selection, patient assessment, target localization, postoperative programming methods, and positron emission tomography.

We have gathered a group of experienced and recognized authorities in the field who have provided authoritative reviews that define the current state of the art of surgical treatment of Parkinson's disease and related movement disorders. We greatly appreciate their excellent contributions as well as the work of Paul Dolgert, Craig Adams, and Mark Breugh at Humana Press who made this work a reality. We especially thank our very patient and understanding families whose love and support helped to make this book possible. Finally we dedicate this book to our patients whose courage and persistence in the face of great adversity have allowed the work described in this book to progress toward some measure of relief of their difficult conditions.

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Surgical Treatment of Parkinson's Disease and Other
Movement Disorders

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2003, 368 p. 59 illus., Hardcover

ISBN: 978-0-89603-921-6

A product of Humana Press