Current Clinical Neurology

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Series Introduction

*Neurointervention in the Medical Specialties* provides a remarkably detailed and comprehensive review of the state of the art in this very innovative and burgeoning field. As stated by the editors, neurointervention is a coming together of the fields of neurology, neurosurgery, and neuroradiology which, in a relatively short period of time, has greatly expanded therapeutic options for a number of previously untreatable conditions. More than a manual concerning vascular neurointerventions of one type or another, it also covers important areas of interest to other medical and surgical subspecialties such as preoperative tumor embolization, interventional approaches to ophthalmological and otolaryngological disorders, the role of Wada testing in epilepsy surgery, the role of neurointervention in Cushing’s Syndrome, and even the potential future for catheter delivery of stem cell therapy. The opening chapter concerning “the neurointerventional tool kit” sets the stage for the very specific and highly useful information which characterizes all of the chapters in this volume. Ample numbers of illustrative figures and case discussions are provided which greatly enhance the delivery of this material. This is a highly useful and down to earth overview of the field which will be of great interest to all practitioners in the field.

Daniel Tarsy, MD  
Beth Israel Deaconess Medical Center  
Harvard Medical School  
Boston, MA, USA
Neurointervention in the Medical Specialties

A Comprehensive Guide
Neurointervention was developed over 30 years ago to deal with a specific clinical challenge: intraoperative hemorrhage associated with intracerebral arteriovenous malformations. Improvised techniques were developed to deal with this clinical challenge, and eventually elegant solutions were obtained. Shortly thereafter the second great clinical challenge was met and elegantly overcome: treatment of intracerebral aneurysms.

Now, several decades later, neurointervention is still an evolving clinical field overlapping several other specialties. The discipline, however, is still incompletely understood in the medical world. Neurointerventional procedures rarely exist in a vacuum and are intrinsically related to preexisting specialties. Many medical professionals in these other arenas are unaware of possible ancillary procedures or therapeutic solutions that this new specialty now offers that can aid them and their patients. Further, management or treatment of various disorders is typically assessed from a singular viewpoint, and neurointervention offers a unique and new perspective.

Neurointervention and the medical specialties outlines the scope of this new field with particular attention to the interdisciplinary overlap. Attention is paid to actual clinical conditions and possible solutions offered by neurointervention. In this way, light is shed on the symbiosis between various specialties and neurointervention with the goal of facilitating interdisciplinary collaboration for the benefit of patients. Many procedures might be obvious or commonplace among some of the various neurological and head/neck specialties, while others might be unknown. In addition to delineating these multiple solutions to numerous clinical situations and resulting
diagnostic and therapeutic problems, the authors give in-depth description of the procedures themselves.

In a quarter of a century of practicing in this arena, I still meet people, including physicians, who have never heard of our profession. Neurointervention has much to offer and this book will be enlightening.

JOHN J. (BUDDY) CONNORS, MD
Professor and Director;
Interventional Neuroradiology;
Dept of Radiology
Professor of Neurology
Professor of Neurosurgery
Vanderbilt University Medical Center
Nashville, TN 37203
Preface: Neurointervention—An Evolving Specialty

The field of neurointervention is in many ways a microcosm of the many trends shaping modern medicine. It is a point of convergence among several traditionally distinct fields: neurology, neurosurgery, and radiology. The “giants” upon whose shoulders the field has been built include Portuguese neurologist Egas Moniz, who first introduced cerebral angiography in 1927; Swedish radiologist Sven-Ivar Seldinger, who enhanced the safety of vascular access and navigation in 1953; and Russian neurosurgeon Fedor Serbinenko, who invented one of the first therapeutic neurointerventional techniques in 1969. The knowledge base and perspective of each field have resulted in a subspecialty that is able to provide highly complex, multidimensional patient care.

Technological advances have served as a constant and powerful driving force within neurointervention. The introduction of detachable coils, liquid embolic materials, intracranial stents, and stroke thrombectomy devices has all occurred within the last two decades. Indeed, the rate of innovation seems to increase with each passing year. This relentless creativity opens windows of therapeutic opportunity but also presents challenges for both neurointerventional practitioners and referring physicians. The pace of innovation has outstripped our ability to rigorously test emerging devices and treatment paradigms. There have been some disappointments when randomized clinical trial data has caught up with a promising new treatment, but this process of creative destruction also has led to great leaps forward in therapeutic safety and efficacy.

As this fast moving field grows, it is important for practitioners of neurointervention to understand their role in the profession as a whole. Where can we be most useful to our medical colleagues and patients? This book serves as a bridge between the neurointerventionalist and the physicians who most frequently look to us for answers to some of the most intractable problems they face. It provides background on the diseases treated through neurointervention along with the indications and alternatives to such treatments.

The book is grouped into four parts: an introduction to the tools and anatomical structures that are integral to the field; disease processes most often encountered by neurologists, cardiologists, and vascular surgeons; those more frequently treated by
neurosurgeons; and finally those first seen by several other specialties including ophthalmologists and head and neck surgeons.

Importantly, each chapter includes details of neurointerventional techniques and case discussions that are sufficiently granular to provide a treatment template and guidance to the neurointerventionalist in training and practice. At the same time these descriptions will provide the referring physician with insight into how neurointerventional procedures are performed. Finally, there are several chapters at the end of the text that attempt to look into the crystal ball of neurointervention at what new opportunities await us just over the horizon.

St. Louis, MO, USA     Randall C. Edgell
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Contributors

Alex Abou-Chebl, M.D. University of Louisville School of Medicine, Louisville, KY, USA

Michael J. Alexander, M.D. Department of Neurosurgery, Cedars-Sinai Medical Center, Los Angeles, CA, USA

Kaiz S. Asif, M.D., M.S. Department of Neurology, Froedtert Hospital & Medical College of Wisconsin, Milwaukee, WI, USA

Vibhav Bansal Department of Neurology, Michigan State University, Park, IL, USA

Lee A. Birnbaum, M.D. Department of Neurology, University of Texas Health Science Center at San Antonio, San Antonio, TX, USA

Alan S. Boulos, M.D. Albany Medical College, Albany, NY, USA boulosa@mail.amc.edu

Mark D. Calayag, M.D. Department of Neurosurgery, Albany Medical Center, Albany, NY, USA

Alicia C. Castonguay, Ph.D. Department of Neurology, Medical College of Wisconsin, Milwaukee, WI, USA

Peng R. Chen, M.D. Assistant Professor, The Vivian L. Smith Department of Neurosurgery, The University of Texas Medical School, Houston, TX, USA

Yanjun Chen, M.D., Ph.D. Ophthalmology and Visual Sciences, University of Wisconsin Hospitals and Clinics, Madison, WI, USA

Sophia Chung, M.D. Saint Louis University School of Medicine, St. Louis, MO, USA

Jeroen R. Coppens, M.D. Department of Neurosurgery, St. Louis University, St. Louis, MO, USA
John C. Dalfi Department of Neurosurgery, Albany Medical Center, Albany, NY, USA

Mark Dannenbaum, M.D. Department of Neurosurgery, The University of Texas Houston Medical School & Memorial Hermann, Houston, TX, USA

Eric M. Deshaies, M.D. Associate Professor of Neurosurgery, Neuroscience & Physiology, SUNY Upstate Medical University, Neurosurgery, East Adams St., Syracuse, NY, USA

Doniel Drazin, M.D., M.A. Department of Neurosurgery, Cedars-Sinai Medical Center, Los Angeles, CA, USA

Paula Eboli, M.D. Department of Neurosurgery, Cedars Sinai Medical Center, Los Angeles, CA, USA

Randall C. Edgell, M.D. Department of Neurology and Psychiatry, Saint Louis University, St. Louis, MO, USA

Eliahu Feen Department of Neurology and Psychiatry, Saint Louis University, St. Louis, MO, USA

Ahmed Galal, M.D. Assistant Professor, Ain Shams University, Department of Neurosurgery, Cairo, Egypt

Ravi H. Gandhi, M.D. Department of Neurosurgery, Albany Medical Center, Winter Park, FL, USA

George T. Griffing, M.D. Department of Endocrinology, St. Louis University, St. Louis, MO, USA

Diogo C. Haussen, M.D. Neurology—Neurosurgery, University of Miami Miller School of Medicine, Jackson Memorial Hospital, Miami, FL, USA

Syed I. Hussain, M.D. Department of Neurology & Ophthalmology, B401 Msu Clinical Center, Michigan State University and Sparrow Hospital, East Lansing, MI, USA

Mouhammad A. Jumaa, M.D. Department of Neurology, University of Toledo Medical Center, Toledo, OH, USA

Junaid Siddiq Kalia, M.D. Department of Neurology, Saint Louis University Hospital, St. Louis, MO, USA

Joanna Kemp, M.D. Department of Neurosurgery, Saint Louis University, St. Louis, MO, USA

Abhay Kumar, M.D. Department of Neurology, Saint Louis University, St. Louis, MO, USA

David S. Liebeskind, M.D. Department of Neurology, UCLA, Los Angeles, CA, USA
Contributors

Sonal Mehta, M.D.  Department of Neurology, St. Louis University Hospital, St. Louis, MO, USA

Osman Mir, M.D.  Department of Neurology, Texas A&M University, Baylor University Medical Center, Dallas, TX, USA

Vivek Misra, M.D.  Department of Neurology, University of Texas Health Science Center San Antonio, San Antonio, TX, USA

Ashish Nanda, M.D.  Neurology and Neurosurgery, University of Missouri, Columbia, MO, USA

Anmar Razak, M.D.  Department of Neurology, Michigan State University, B401 MSU Clinical Center, East Lansing, MI, USA

Sean I. Savitz, M.D.  Department of Neurology, University of Texas Health Science Center, UT-HEALTH, Houston, TX, USA

Amit Singla, M.D.  Resident Physician, SUNY Upstate Medical University, Department of Neurosurgery, Syracuse, NY, USA

Parul Sinha, M.D., M.B.B.S., M.S.  Otolaryngology-Head & Neck Surgery, Washington University School of Medicine, St. Louis, MO, USA

Aaron P. Tansy, M.D.  Department of Neurology, UCLA, Los Angeles, CA, USA

Mohamed S. Teleb, M.D.  Department of Neurology, Froedtert Hospital & Medical College of Wisconsin, Milwaukee, WI, USA

Ali Hassoun Turkmani, M.D.  Department of Neurosurgery, University of Texas at Houston, Houston, TX, USA

Mark A. Varvares, M.D., F.A.C.S.  Department of Otolaryngology, Head and Neck Surgery, Saint Louis University School of Medicine, St. Louis, MO, USA

Anantha Vellipuram, M.D.  Department of Neurology, University of Missouri, Columbia, MO, USA

Mohammad Wasay, M.B.B.S., M.D., F.R.C.P.  Department of Neurology, Aga Khan University, Karachi, Pakistan

L. James Willmore, M.D.  Saint Louis University School of Medicine, St. Louis, MO, USA

Dileep R. Yavagal, M.D., M.B.B.S.  Neurology/Neurosurgery, University of Miami, Miami, FL, USA

Osama O. Zaidat, M.D., M.S.  Department of Neurology, Medical College of Wisconsin, Milwaukee, WI, USA