Introduction to Recent Advances in Neurosurgery

ZIYA L. GOKASLAN, MD
GUEST EDITOR

It is absolutely my pleasure to share with you in this issue some of the recent advances in treating a variety of neurosurgical conditions at the Department of Neurosurgery of Rhode Island Hospital and Brown University.

The following contributions are included in this special focus section of the Rhode Island Medical Journal:

**Current Treatment of Metastatic Spine Tumors – Surgery and Stereotactic Radiosurgery** by Jared S. Fridley, MD; Jaroslaw T. Hepel, MD, and Adetokunbo A. Oyelese, MD, PhD, describes our multidisciplinary approach to patient care and the incorporation of stereotactic radiosurgery as well as other minimally invasive procedures into our surgical treatment paradigm in caring for patients with metastatic spinal tumors.

**The Role of Radiation Therapy in the Treatment of Metastatic Brain Disease** by Sohail Syed, MD, and Deus Cielo, MD, is a comprehensive review which describes the use of a variety of radiation treatment modalities in managing patients with single and multiple brain metastases.

**Current Strategies in the Surgical Management of Ischemic Stroke** by Cody A. Doberstein, BS; Radmehr Torabi, MD; Sandra C. Yan, BS, BA; Ryan McTaggart, MD; Curtis Doberstein, MD, and Mahesh Jayaraman, MD, summarizes the transformation we have witnessed over the last several years in treating patients with major cerebral vessel occlusion via emergency endovascular thrombectomy, resulting in truly amazing restoration of neurological function for patients who would have otherwise been left with devastating permanent neurological deficits. Our multidisciplinary team of physicians is leading the field in this very exciting area with some of the best outcomes in the world.

**Rhode Island Hospital’s Contribution to the Field of Endoscopic Spine Surgery** by Albert E. Telfeian, MD, PhD; Adetokunbo A. Oyelese, MD, PhD, and Ziya L. Gokaslan, MD, is a description of the groundbreaking work by Dr. Albert Telfeian, the Director of the Center for Minimally Invasive Endoscopic Spinal Surgery at Rhode Island Hospital and Brown University, which allows outpatient endoscopic surgical treatment of spinal cord and painful nerve root compression, using pencil-tip size incisions. We are truly among the world leaders in this very exciting field, which has dramatically shortened the recovery time from surgery while drastically improving patient outcomes.

**Updates On Chimeric Antigen Receptor-Mediated Glioblastoma Immunotherapy** by George Mao, MD; Prakash Sampath, MD, and Sadhak Sengupta, PhD, is again amazing work, outlining how the patient’s own immune system, specifically his/her own killer T-cells can be conditioned to recognize tumor-specific chimeric antigens in patients with glioblastoma. We are about to start clinical trials to translate this groundbreaking discovery to the care of our patients.

**A Comprehensive Approach to Deep Brain Stimulation for Movement Disorders** by Umer Akbar, MD, and Wael F. Asaad, MD, PhD, is a description of the multidisciplinary approach that our physicians employ in evaluating patients with movement disorders such as Parkinson’s disease and the state-of-the art surgical methods and technology they use in the operating room, with intraoperative, image-guided navigation, and electrophysiological recordings for precise placement of the deep brain electrodes used for stimulation.

**Recent Advances in the Treatment of Gliomas – Comprehensive Brain Tumor Center** by Steven A. Toms, MD, MPH, and Nikolaos Tapinos, MD, PhD, is a comprehensive review of the whole spectrum of treatment options including radiation, chemotherapy and immunotherapy in patients with gliomas. The article also describes the multidisciplinary approach employed by the Comprehensive Brain Tumor Center at the Lifespan Cancer Institute of Rhode Island Hospital and exciting ongoing translational research projects in our Brain Tumor Research Laboratories.

**Current Concepts in the Pathogenesis, Diagnosis, and Management of Type I Chiari Malformations** by Cody A. Doberstein, BS; Radmehr Torabi, MD, and Petra M. Klinge, MD, is an excellent review of the topic on this rare and often poorly understood condition and its neurosurgical treatment. Dr. Klinge is a worldwide expert and leads the Center for CSF Disorders of the Brain and Spine, where we at Rhode Island Hospital and Brown University offer state-of-the-art care to our patients.

This is just a brief summary of some of the very exciting work we are doing here at the Department of Neurosurgery of Rhode Island Hospital, the Norman Prince Neurosciences Institute and Brown University, on a daily basis.
We are also pleased to share with you that we have just moved into a dedicated neuroscience floor at Rhode Island Hospital, which also houses an 18-bed Neuro Intensive Care Unit and highly specialized physician and nursing teams. Similarly, we have a dedicated spine floor with specialized nursing staff where we care for our patients with the whole spectrum of spinal disorders.

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