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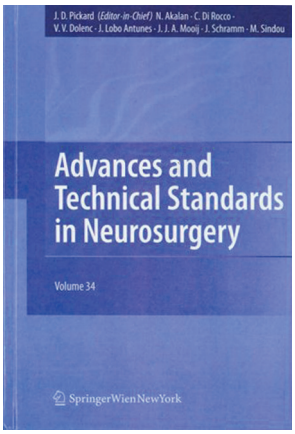
BOOK REVIEW

Advances and Technical Standards in Neurosurgery, Vol. 34

J.D. Pickard, N. Akalan, C. Di Rocco, V.V. Dolenc, J. Lobo Antunes, J.J.A. Mooij, J. Schramm, and M. Sindou, eds. New York: Springer Wien; 2009, 206 pages, 55 figures, $209.00.

This series of books is sponsored by the European Association of Neurosurgical Societies and, according to the editors, should be of interest to both experienced neurosurgeons and neurosurgeons in training. These volumes are all published in English and start with an Advances section, which is intended to present recent developments in neurosurgery and associated fields, followed by a Standards section, which includes comprehensive descriptions of currently applicable neurosurgical practice. In this volume, the Advances section includes 2 chapters, and the Standards section includes 4 chapters.

The first chapter in the Advances section discusses present and potential future issues in the adjuvant treatment of high-grade astrocytic glioma. This is a very detailed overview of brain tumor biology and targets for adjuvant treatment. Patterns of cell death including apoptosis and autophagy are reviewed. The use of temozolomide, the currently most important chemotherapeutic agent for these tumors, is discussed. Local therapies, including chemotherapy with impregnated polymers and convection-enhanced delivery systems, are covered. Ongoing clinical trials with inhibitors of growth factors and other signaling pathways are discussed, along with antimigratory compounds and targeting of angiogenesis. Also reviewed are vaccine and gene therapies, followed by sodium pump targets and a discussion of brain tumor stem cells. This chapter is a comprehensive review of brain tumor cell molecular biology, and the pathways are well illustrated with excellent diagrams that help with understanding the complex issues involved.



The second chapter in the Advances section covers the state of the art of deep brain stimulation for psychiatric disorders. The chapter begins with brief but reasonably comprehensive descriptions of the history and principles of deep brain stimulation, followed by brief reviews of the neurobiology of depression and obsessive-compulsive disorder. Following are descriptions of clinical trials that have been undertaken for treatment of those 2 disorders. The chapter concludes with a discussion of ethical considerations and standards that will be critical in any application of these techniques to psychiatric disease.

The first chapter in the Standards section covers high-flow extracranial-to-intracranial vascular bypass procedures. At one time, these procedures were becoming widespread, until a clinical trial suggested lack of benefit for ischemic brain disease. These procedures are now uncommonly performed, but one more generally acceptable indication is for treatment of giant aneurysms. This chapter describes current indications, techniques, complications, and outcomes of these procedures. The complexity of patient selection is discussed. This chapter has useful radiographic and intraoperative illustrations.

The second chapter in the Standards section reviews decompression for Chiari type I malformations by extreme lateral foramen magnum opening and expansile duraplasty. The pathophysiology of the Chiari type I malformation and that of the frequently accompanying syringomyelia is discussed. The illustrations are excellent with MR imaging scans and very good surgical drawings.

The next chapter reviews vagus nerve stimulation for epilepsy. Evidence regarding mechanism of action is discussed, and the results of clinical trials are reviewed in detail. The results with different types of epilepsy are reviewed. Safety and adverse effects are thoroughly explored.

The final chapter describes surgical anatomy of, and surgical approaches to, the lateral ventricles. The embryology of the lateral ventricles is discussed in detail. The anatomy of the lateral ventricle is extensively described and includes the neural structures, the vascularity, and the choroid plexus. The relationships of the ventricles to white matter pathways are described in detail. A variety of surgical approaches to different areas of the lateral ventricles are described. This chapter is very well illustrated with anatomic diagrams and illustrations showing surgical approaches in a schematic fashion. The only criticism of this chapter is that the actual clinical examples illustrated by MR imaging scans are quite limited.

This volume is actually a quite useful collection of interesting reviews of a variety of topics. The language and style of this volume render it more readable than some other volumes in this series have been. The number of radiographic illustrations is variable by chapter, but some of the chapters are very well illustrated. This book is not specifically aimed at neuroradiologists; however, neuroradiology is integral to the management of the disorders discussed. Radiologists reading this volume would certainly be able to add to their understanding of the pathology and procedures encountered during clinical practice of neuroradiology.

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