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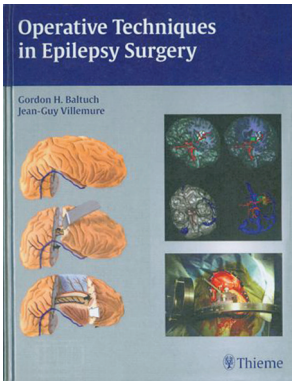
BOOK REVIEW

Operative Techniques in Epilepsy Surgery

G.H. Baltuch and J.-G. Villemure. Thieme; 2009, 216 pages, 7 tables, 138 illustrations, $149.95.

Surgical treatment of epilepsy has been a treatment option for intractable epilepsy for many years. With improvements in anatomic and functional imaging modalities, stereotaxy, and the integration of neuronavigation during surgery, epilepsy surgery has entered a new era of expertise. In this context, the present text provides a very comprehensive review of various epileptic syndromes and aspects of surgical management of patients with intractable epilepsy.

Operative Techniques in Epilepsy Surgery is a unique compilation of chapters discussing various diagnostic and technical aspects of epilepsy surgery. These chapters discuss the role of image guidance in the facilitation of precise placement of subdural grid, strip, and depth electrodes to localize the onset of the seizure. Coregistration techniques have helped in precisely localizing the eloquent cortex and its relationship with seizure onset, especially in patients with nonlesional epilepsy. These technologies have been carried into the operating room, where neuronavigation has helped to localize brain areas during surgery. Image guidance has also enhanced our understanding of the pathologic substrate responsible for persistent seizures and outlined the anatomic correlates of temporal lobectomy, hemispherectomy, and corpus colostomy. The authors also discuss the surgical principles outlining the role of chronic invasive extraoperative recording.



The section on cortical resection reviews the work-up of epilepsy arising in various cortical regions and their surgical management. The reviews are comprehensive and very thoroughly researched. They are a tremendous aid to the residents who are starting to learn the techniques of surgical resections for epilepsy. The chapters on cortical resection in extratemporal sites highlight the difficulties associated with clinical localization on the basis of seizure semiology alone. Clinical symptoms may reflect the involvement of the cerebral cortex during the spread of the seizure discharge, rather than the precise area where seizures originate. Ictal single-photon emission CT changes may reflect the extent of cortical involvement in the seizure. Although this may not directly interest the generalist, it would be of great interest to the neuroradiologist to understand the issues involved in seizure semiology and precise seizure localization. Neuroradiologists who understand these concepts can better help neurologists and neurosurgeons identify structural abnormalities in the brain.

The chapters on insular epilepsy and hypothalamic hamartomas are very well written. Insular epilepsy is a relatively under-recognized form of intractable epilepsy. Many of the clinical presentations reflect spread of epileptic discharges to the amygdala, entorhinal cortex, and pyriform cortex or the sensorimotor cortex. The discussion on hypothalamic hamartomas is exhaustive and very informative.

The book includes discussions of the use of brain stimulators to control epilepsy. These are relatively new technologies that have allowed the use of surgical interventions to control seizures in patients who may have bilateral mesial temporal epilepsy and may have seizure onset in the eloquent cortex. Such patients are not, otherwise, candidates for resective surgery. The authors explain the principles of open-loop continuous stimulation and closed-loop stimulation in response to specific EEG changes.

The final section discusses the role of radiosurgery in the treatment of epilepsy associated with arteriovenous malformations, hypothalamic hamartomas, and mesial temporal lobe pathologic conditions.

Operative Techniques in Epilepsy Surgery is a very comprehensive text that discusses the principles and techniques of nonpharmacologic management of intractable epilepsy. All of the chapters are extremely well illustrated and help clarify the anatomic and surgical details. Understanding the anatomic basis of epilepsy surgery is essential to achieve a good surgical result and avoid complications. I believe this book will tremendously help residents and young attending physicians start their career in epilepsy surgery. This book provides superb background information regarding epilepsy surgery and all of its ramifications, which can be of help to radiologists who help manage patients with seizure disorders.

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