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Atlas of Epileptic Seizures and Syndromes

Hans O. Luders and Soheyl Noachtar

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Atlas of Epileptic Seizures and Syndromes.

Hans O. Luders and Soheyl Noachtar. Philadelphia, Pa: W.B. Saunders; 2001. 220 pages. \$159.00.

New methods for understanding the brain are emerging at an astonishing pace. Most are technologically driven and are revolutionizing the ways in which we look at brain structure and function. Anatomic and functional neuroimaging is perhaps most visible, but other investigational tools in allied disciplines also provide new and innovative insights into brain regions and how they communicate with one another.

The clinical neurophysiologic examination of patients with epilepsy is a prime example of this trend. Until recently, routine scalp EEG data were the single reliable means to describe electrical abnormalities of the brain, but most tertiary epilepsy centers now routinely use more sophisticated techniques, including video or EEG monitoring, subdurally recorded EEG, and direct electrical brain-stimulation mapping. Although it lacks definitive anatomic specificity, clinical neurophysiologic techniques nonetheless remain superior in their ability to define events in the temporal domain. This singular advantage is highly relevant to the study of epileptic seizures, which typically involve the sequential and prolonged activation of functionally interrelated brain regions. Although static images provide precise anatomic and functional data, their sampling window limits information about activity occurring before or after imaging.

In their *Atlas of Epileptic Seizures and Syndromes*, Luders and Noachtar have produced a concise yet fact-filled volume about clinical seizure subtypes that describes seizures in terms of current clinical neurophysiologic concepts. An accurate classification of seizures and syndromes is fundamental to modern clinical epileptology, and the authors accomplish this objective admirably by supplying electroclinical information that is anatomically specific to epileptogenesis. Their atlas is thus a comprehensive compendium of anatomically oriented features of clinical seizure semiology and neurophysiology. This successful compilation provides a valuable service, particularly for surgical patients, because the description and localization of seizure onset are the bases for candidate selection and surgical planning. Electroclinical data, in conjunction with classic and emerging imaging techniques, now is considered state of the art in evaluating complex cases of epilepsy.

The authors are eminently qualified for this task. The Cleveland Clinic Foundation has a renowned program in epilepsy and epilepsy surgery and enjoys a leadership role in the description and classification of epilepsies. Its many faculty members

and trainees also have pioneered techniques to record and map brain activity with the use of subdural electrodes.

The atlas is organized into multiple sections, but it is roughly divided into sections dealing with both classification and etiology and with detailed case studies. The classification sections provide abundant information about functional brain activity based on clinical and neurophysiologic investigations dating back to the early 20th century. The degree of detail is oriented to readers seeking in-depth knowledge, and it could be difficult for the casual reader to digest on a first pass. The clarity of the illustrations is a strong point; many are taken from meticulous studies with subdural electrodes. The quality of the scalp and subdural EEG figures is exceptional, and the legends provide clear explanations. Colored isopotential field maps intuitively appeal to radiologists who are used to interpreting axial representations of the brain.

The case presentations are especially well done. Examples of seizure types and epilepsy syndromes are presented comprehensively and intelligently. The EEG seizure sequences recorded from the scalp and neocortex are displayed over adequate intervals; in addition, the accompanying CD-ROM provides videographic documentation of seizures and complements the text. Illustrative MR images are supplied whenever appropriate.

Two caveats are worth noting. The first is that the system of classification of epileptic seizures and syndromes used in this volume reflects a classification schema developed by the Cleveland Clinic epilepsy group. Although it is a published system, it is not universally accepted by all workers in the field of clinical epilepsy. The second is that the atlas is oriented primarily to adult neurology. It remains extremely useful to pediatric practitioners, but it is likely to contain gaps that could be frustrating to others, particularly regarding some of the more unusual pediatric epilepsy syndromes. Neither of these issues is sufficient to detract from the overall importance of the work.

An unresolved question is whether neuroradiologists should consider purchasing this book and setting aside time to read it. I believe the answer depends primarily on the neuroradiologist's patient mix; the value of the atlas increases in proportion to the volume of complex epilepsy cases. The atlas is especially appropriate for centers that perform epilepsy surgery, where it would complement the interpretation of neuroimaging data. In contrast, the atlas probably is overspecialized for neuroradiology practices based at community hospitals.