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The Cerebral Venous System and Its Disorders

Samuel M. Wolpert

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Book Review

The Cerebral Venous System and Its Disorders. Edited by John P. Kapp and Henry H. Schmidek. Orlando, FL: Grune & Stratton, 637 pp., 1984

In one of the chapters in this book, R. M. Kalbag concludes that cerebral venous thrombosis is more common than is generally believed, that it is seldom suspected because of its protean manifestations, that computed tomography (CT) may only suggest the diagnosis, and that cerebral angiography confirms the disease and serves as a guide to prognosis. These four truisms indict those who rely largely on CT scanning for the diagnosis of cerebral venous thrombosis and either ignore angiography if the scan is normal or, after obtaining an angiogram, pay curt attention to the venous phase of the study. Because cerebral venous disease is often unsuspected and also, as the editors state in their preface, the overwhelming emphasis on the part of basic scientists and clinicians interested in the study of the cerebral circulation is on the arterial side of the circulation, there is a sore need for a book such as this to organize our knowledge of the cerebral veins and make us more aware of this largely forgotten system.

Had the editors of this multiauthored book limited themselves exclusively to anatomic, physiologic, pathologic, and clinical considerations while ignoring the neuroradiologic aspects, this book would be a welcome addition to the literature, though ill-balanced. However, the editors also claim in their preface that neuroradiologic imaging techniques are included. Unfortunately, except for some few exceptions, which stand out all the more because of their high quality, the neuroradiologic content is a disappointment.

The 21 chapters are divided into one on embryology of the cranial venous system, three on anatomy, three on physiology (including one chapter on cerebrospinal fluid absorption), two on pathology, 11 on clinicopathologic aspects (including one on the neuroradiology of cerebral venous malformations), and one chapter on neurosurgery.

The three anatomy chapters are excellent. A minor irritant is that the all-important precentral cerebellar vein, of great interest to the neuroradiologist and well described in the text, is not referenced in the index. The superb anatomist, Rhoton, provides a concise chapter in which he has synthesized much of his writings on the cavernous sinus. Missing, however, are any high-detail CT images of the cavernous sinuses and of the various nerves in the walls of the sinuses, and an in-depth description of the radiologic features of the abnormal cavernous sinus.

The chapters on the physiology of the cerebral venous system, on the alterations in the cerebral blood volume, and particularly that on cerebrospinal fluid absorption make excellent, informative reading. Unfortunately, some errors have crept into the legends of the CT images in the chapter on cerebral blood volume. An obviously contrast-enhanced scan is labeled nonenhanced.

There is a useful chapter on the pathologic and surgical implications of occlusions of the different veins and sinuses. An excellent, up-to-date chapter on the neuroophthalmology of cranial and orbital venous disease is unfortunately spoiled by too few angiograms. The author acknowledges the role of radiology by including many CT scans. None are state-of-the-art. A chapter on giant carotid artery aneurysms does not describe the use of detachable balloon catheters in the treatment.

A highlight of the clinical chapters is a provocative analysis by Yun Pen Huang and coauthors on cerebral venous malformations based largely on an analysis of detailed radiologic studies. This is a timely chapter, particularly because we have come to realize that many of these venous malformations can rupture and cause intracerebral hemorrhages. The arterial and venous detail in this chapter is reminiscent of the superb anatomic papers on the venous system that Drs. Huang and Wolf published in the 1960s and 1970s. As in these earlier papers, the lavishly notated radiographs are accompanied by detailed legends. To fully appreciate Dr. Huang's argument, it is essential to have the legends close to the attendant radiographs. While many figures and legends are nearby, it is regrettable that in places the legends and radiographs are separate, requiring the reader to page to and fro when reading the chapter. A greater irritant is to have some figures printed at right angles to the standard horizontal format of the book! In spite of these limitations, the chapter remains excellent reading for any neuroscientist concerned with either the diagnostic or therapeutic aspects of patients with intracerebral hemorrhages.

Many of the other clinical chapters are informative, up-to-date, and well written. Unfortunately, again the absence of detailed neuroradiology is regrettable. There are no radiographs in a chapter on venous aneurysms and dural venous malformations, although the author did include line drawings of the lesions, their blood vessels, and the adjacent brain. This format would have been more useful had subtracted angiograms accompanied the line drawings.

In a chapter on traumatic and neoplastic involvement of the venous system, there are no CT scans of subdural hematomas, nor is the problem of the diagnosis of the isodense subacute subdural hematoma addressed. A chapter on cerebral venous disorders of the neonate and of the child is a comprehensive review illustrated by high-quality CT scans and sonograms.

The conclusion after reading this book is regret that a worthwhile project fell short of its aims. If the reader is well versed in the radiology of cerebral venous diseases and needs a concise book in which the other facets of the diseases are discussed, this book is recommended reading. If, however, a comprehensive text is needed, this reviewer would encourage the editors to prepare a second edition in which adequate coverage of the radiology of the cerebral venous system and its disorders is included.

Samuel M. Wolpert
New England Medical Center
Boston, MA 02111