

BOOK REVIEWS

John M. Porter, MD, Book Review Section Editor

Stroke: pathophysiology, diagnosis, and management, 3rd ed

Henry Barnett, J.P. Mohr, Bennett Stein, Frank Yatsu; Philadelphia; 1998; Churchill Livingstone; 1459 pages.

When a book is described as the “Bible” of a given field, rare as this might be, certain qualities are expected. It should be thorough, even encyclopedic. It should be up to date but also should contain the basics. It should be, at least for the most part, easy to read. The authors are usually experts in their fields and well known in the academic community. Such a book usually has a large size. Finally, it should stand the test of time, with several editions completed, and should be sought (and bought) by the specialists of that field. It is, therefore, not an exaggeration to claim the book *Stroke*, edited by Henry Barnett et al, to be the Bible among the several different books that have appeared over the last few years on the subject of cerebrovascular diseases.

It is not the first textbook on stroke that was ever published, but it appeared first in 1986 as probably the most comprehensive of the available textbooks. Now, in its third edition, it continues to present an extensive review of almost all aspects of stroke diagnosis, pathophysiology, and treatment. The editors are world experts on the subject, and although they represent the American perspective (Barnett is from Canada and the others from the United States), they have assembled an impressive list of international contributors, many of whom trained in the Americas.

The book is divided into five sections. In the first, the epidemiology and pathophysiology of stroke are reviewed, including chapters on the pathophysiology of atherosclerosis and the mechanisms of cell injury after stroke, in which models of experimental ischemia are reviewed. The second is devoted to imaging techniques used in the evaluation of stroke patients, including the diffusion-weighted imaging technique, which has become mainstream in the imaging of patients with acute stroke, and chapters on cerebral angiography and magnetic resonance angiography.

In the next section, several detailed chapters on specific stroke syndromes are presented, including anterior, middle, and posterior cerebral artery territory stroke syndromes. Especially impressive is the chapter on vertebrobasilar ischemia, which is the longest in the book, written by P. Amarenco, L.R. Caplan, and the late M. Pessin. It provides detailed information about the syndromes of brainstem and cerebellar ischemia, with an exhaustive list of references, including many classic papers. The illustrations in this chapter, and in the rest of the book, are of excellent quality and significantly complement the content. Separate chapters are devoted to the description of syndromes of intracerebral hemorrhage and aneurysmal disease.

A fourth section includes a description of specific etiologies of stroke, including, among other topics, migraines

and stroke, coagulation abnormalities and stroke, substance abuse and stroke, stroke in the young, and rare causes of stroke, such as moyamoya disease. The chapters are written by experts in the field, and the information provided is concise. One noticeable omission is the subject of AIDS and stroke. This is not discussed, although patients who are HIV positive with strokes are seen with greater frequency and specific coagulation abnormalities, like protein S deficiency in such patients, have been recently described.

The final section is devoted to stroke treatment, including chapters on antiplatelet agents and anticoagulants and a detailed chapter on thrombolytics written by the experts T. Brott and W. Hacke. Some of the latest disappointing results of the trials on the use of intravenous thrombolytics past the approved 3-hour window of the Food and Drug Administration were not available because the book was published before the announcement of the results and the publication of the studies. This is an inherent deficiency of all large textbooks—being up to date even on the publication date. This could possibly be solved with the simultaneous offering of an Internet edition that could be updated frequently.

The chapters on the surgical treatment of stroke, and especially on carotid endarterectomy, were written by experts who pioneered the organization of the great trials of the 1980s, including one of the editors, H. Barnett, a neurosurgeon, J.T. Robertson, and two vascular surgeons, G.P. Clagett and R.W. Barnes. There are separate chapters on the medical, surgical, and neurointerventional treatment of aneurysmal disease. Finally, there is a chapter on stroke rehabilitation. The references include several recent papers from 1996 and 1997 and older milestone papers.

Overall, the material is written with clarity and the authors and editors succeed in presenting even the most difficult subjects in a readable style, indeed a difficult task in a multi-authored textbook. Even more, the available information is comprehensive. Several of the chapters are a joy to read. Especially for residents or fellows, each chapter could be the first detailed reading on several subjects on cerebrovascular disease. For a quicker review, however, one could recommend the shorter chapter format of the recently published *Primer on cerebrovascular diseases*, edited by K.M. Welch, L.R. Caplan, D.J. Reis, B.K. Siesjo, and B. Weir.

In comparison with the other major textbooks on cerebrovascular disease, *Stroke* could be characterized as a classic, not only because its contributors represent the persons who make the news in the stroke community and because it is already in its third edition, but mainly because it represents a balanced approach to the subject of stroke. The book *Cerebrovascular diseases*, edited by H.H. Batjer, is of similar size, but it represents mainly the neurosurgical view on the subject, with emphasis given to surgical management and

less to the basic and clinical science of stroke diagnosis and management. The other recently published, multi-authored textbook edited by M.D. Ginsberg and J. Bogousslavsky has a much larger size, which makes it less practical for review.

Overall, *Stroke* is a classic that is of great value for anyone who is involved in the care of stroke patients, including neurologists, neurosurgeons, vascular surgeons, and internists. It is a must for every medical library.

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Indications in vascular and endovascular surgery

R.M. Greenhalgh; Philadelphia; 1998; W.B. Saunders; 480 pages; \$125.00.

This volume represents the proceedings of the 1998 Annual Charing Cross Symposium in London. The intention of the book is two-fold: (1) to discuss indications in vascular surgery in comparison with the background of the more readily available endovascular technology (after a successful publication 10 years ago, R. Greenhalgh and his group of international collaborators are now delivering an update); and (2) to test an innovative form of book editing, with instructions to be adhered to strictly by the contributors. Each contributor was asked to elaborate on a particular procedure, to discuss the indications for the conventional open or the endovascular approach, to argue for their preferred procedure, to discuss therapeutic alternatives, to clarify what trials were in agreement and which were in disagreement with the author's view, and finally to discuss trials that might be considered worthwhile in the future. The following contentious areas with current controversies were selected: carotid, renal aortic, femorodistal, and venous territories. Not surprisingly, various issues related to aortic aneurysm repair and stent graft techniques compose a major part of the book. Each contribution is followed by an editorial comment, written by P. Bell, R. Greenhalgh, B. Hopkinson, or V. Ruckley.

An interesting chapter assesses the value of a national Registry for Endovascular Treatment of Aneurysms, as newly instituted in Great Britain and Ireland under the auspices of the corresponding Vascular Surgical Society. P.L. Harris and J. Brennan discuss the question "is there a case for limiting endovascular repair of abdominal aortic aneurysms to commercially available devices?" and use their experience gained within the Eurostar Registry (EUROpean collaborators on Stent Graft Techniques for abdominal aortic Aneurysm Repair).

The chapter on aortic questions and indications discusses mostly issues related to the endovascular management of aortic aneurysms, the management of aortic and arterial dissections, and the potential necessity of intensive care support in the surgical treatment of abdominal aortic aneurysms. The problem of how to deal with small aortic aneurysms with diameters of less than 5.0 cm is discussed, especially the case for endoluminal repair. The authors claim excellent results and no sexual dysfunction. Nobody has asked for the long-term results of stent graft repair, which might be an argument against the procedure in younger patients.

In the second largest chapter, pending questions concerning carotid surgery are discussed. The problem of choosing the most appropriate method of anesthesia, general versus local, is addressed with a single-center clinical trial that has enrolled only 80 patients. Not surprisingly, it is impossible to answer the basic question in a trial of that limited size. The chapters that deal with the problems of the distal arterial tree evaluate the need for open surgery in the pelvic region now that endoluminal methods are routinely available, including indications for intervention in claudicants, the use of endoscopic femoropopliteal vein bypass grafting surgery, and the value of intravascular ultrasound scanning for femoropopliteal angioplasty and stenting. The deep femoral angioplasty (profundaplasty) is thoroughly discussed. Finally, the justification of percutaneous transluminal angioplasty and stenting in the superficial femoral region is questioned. In the femorodistal region, the following issues are discussed: balloon angioplasty in the infrapopliteal area, endovascular procedures below the knee, and the use of cuffs when prosthetics are used in the below-knee position.

Regarding venous problems, the value of duplex scanning is discussed and the problem of endoscopic perforator surgery is brought to our attention, but the method of pretibial fasciotomy is curiously never mentioned by the author nor in the accompanying editorial comment. Finally, the problem of venous thrombectomy is discussed. Noteworthy, the indication for thrombectomy in patients with phlegmasia coerulea dolens is questioned, which seems to be in line with this reviewer's experience.

Professor Greenhalgh and his collaborators are to be congratulated for providing us with an excellent book that discusses the current controversies in vascular and endovascular surgery.

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In industrialized countries, stroke represents the third cause of death after cardiopathies and cancers, and the first cause of long-term disability in adults [1]. Velly L., Boumaza D., Simeone P. (2018) Cerebral Ischemia: Pathophysiology, Diagnosis, and Management. In: Ichai C., Quintard H., Orban JC. (eds) Metabolic Disorders and Critically Ill Patients. Springer, Cham. Stroke has a profound effect on public health and generates huge costs for primary treatment, hospitalization, rehabilitation, and chronic care. Its management is demanding because of variety of protocols, imaging modalities, pulse sequences, hemodynamic maps, techniques and criteria for treatment, definitions of a mismatch and penumbra as well as time constraints to promptly evaluate, make decision and treat, among others (Mohr et al. 2004). Human Brain Atlases in Stroke Management. Article. Stroke is a leading cause of death and a major cause of permanent disability. Its management is demanding because of variety of protocols, imaging modalities, pulse sequences, hemodynamic maps, criteria for treatment, and time constraints to promptly evaluate and treat. "There are sections on pathophysiology, epidemiology, clinical manifestation and individual sections dealing with specific pathological conditions explaining each in great depth. In addition, it has extensive sections devoted to therapy including medical, interventional and surgical. All this makes the book a one-stop-shop for stroke." Product details. Series: Stroke Pathophysiology Diagnosis and Management. Hardcover: 1504 pages. Publisher: Elsevier; 6 edition (September 7, 2015).