Book reviews

patients; nonetheless his contention that symptoms of *non-focal* cerebral ischaemia predict stroke and vascular death almost as accurately as *focal* ischaemic episodes warrants further investigation. If proven, many more patients with non-specific "dizzy turns" may require a more thorough cerebrovascular workup.

Dr Wilner begins his chapter on posterior fossa angiography by saying "The development of four-vessel angiography has significantly altered the prognosis and therapy of the vertebrobasilar system". The subsequent text, a series of eight selected case reports (with admittedly excellent pictures) fails to support his rather contentious statement. He may, however, be correct in stating that vertebral angiography, at least in the USA, has altered therapy, though whether it has been changed for the *better* remains as yet unproven.

The section on treatment is a little disappointing. There are *eleven* chapters on various aspects of surgical, but not one on medical, management though the latter is mentioned specifically in the book's title. Anticoagulants are frequently stated as the optimum medical therapy, but there is no critical review of clinical trials of anticoagulants to be found anywhere. Haemodynamic mechanisms are mentioned often as a cause for vertebrobasilar ischaemia, and the book is peppered with suggestions to "keep the patient horizontal" and "optimise cardiovascular status" (whatever that means); again with little in the way of convincing evidence in support.

Several of the surgical chapters are equally uncritical, and describe in glowing terms the remarkably high cure rates achieved by the authors' particular surgical method, without ever providing a definition of the disease being operated on, the time or method of outcome measurement, or a comparison with the results in a control group. However, the chapters by Kieffer *et al*, and Ausman *et al* are very good, and provide a critical assessment of the problems of study design, including the definition of vertebrobasilar disease, the need for careful outcome measurement, and above all, the need for randomised controlled trials of new surgical methods in this area.

In conclusion, this book may be of interest to the cerebrovascular specialist. It is expensive and would, therefore, be more suitable for browsing through in the library, rather than buying for personal use.

PAG SANDERCOCK

Nuclear Magnetic Resonance Imaging: Basic Principles. By Stuart W Young. (Pp 175; \$24.00.) New York: Raven Press, 1983.

Computed tomography fundamentally displays the patterns of absorption of X-rays by matter, so that despite the fact that it is a fairly complex imaging method, no new basic concepts were necessary for understanding the principles of interpretations of the images. Magnetic resonance is a much more complicated phenomenon in which image patterns of magnetised tissues can be produced by subjecting it to various types of radio frequency pulse sequences. The method has enormous potential for imaging brain and spinal cord and not only for displaying the gross anatomy and some of the internal structure but also for revealing certain aspects of biochemistry and pathophysiology and for measuring blood flow. To achieve anything more than an empirical approach to diagnosis one should seek to understand how the components of the magnetic resonance signal are generated; how each affects imaged contrast and how they are influenced by disease processes. However, one should bear in mind that the evolution of the method has been incredibly rapid and some aspects of the subjects are incompletely understood even by experts.

This book considers in a simple manner the potential of magnetic resonance and discusses the interaction between radiowaves and spinning particles in a strong magnetic field and how spatial encoding is achieved to form images. Analogies with more familiar physical phenomena are presented to facilitate the learning phase. The author also uses analogies from everyday life, some of which are very helpful; others will probably be more useful to American readers. The currently available imaging systems and possibilities of using paramagnetic substances for enhancing the images and the potential hazards of magnetic resonance are also discussed.

The book fulfils its brief as a simple introduction or guide. It commences slowly and simply, explaining every step but even so it soon becomes quite complex enough for the average neuroscientist. It certainly provides the basic background for logical attempts at analysis of magnetic resonance images and gives a good basis on which to build further knowledge. It is recommended to radiologists and other physicians commencing study of the field.

BRIAN KENDALL

Surgical Approaches to the Spine. By Robert G Watkins. (Pp 145; \$150.00.) Berlin: Springer-Verlag, 1983.

This is designed for the specialist spinal surgeon. The principal author is an orthopaedic surgeon at the University of Southern California and his contributors include two professors of neurosurgery. They have provided a thorough guide to the full range of methods of surgical exposure of the vertebral column throughout its length. It should be stressed that this is a manual of surgical exposures alone. With the exception of lumbar discectomy and cervical foraminotomy, the procedures that the surgeon may carry out once the spine has been exposed are not described. Each surgical route is described step by step. Points of difficulty or risk are emphasised and for each section of the spine the relevant aspects of normal anatomy are thoroughly described. References have been deliberately confined to key papers only.

A technical surgical work of this type stands or falls by the quality of its illustrations. The numerous plates in this book, all coloured, can hardly be faulted. Most are photographs of cadaver dissection. Usually this type of illustration is less satisfactory than one might suppose but these beautifully photographed dissections are helpful and instructive. There can be few neurosurgeons who will not find this book useful. Even those with large spinal practices will from time to time require a detailed guide to some unusual approach and its problems. For this purpose this volume can be thoroughly recommended. The price is high but it can be justified in view of the very high quality of production and illustration.

RS MAURICE-WILLIAMS

Polyomaviruses and Human Neurological Disease: Progress in Clinical and Biological Research Vol 105. Edited by John L Sever & David L Madden. (Pp 376; £50.00.) New York: Alan R Liss Inc, 1983.

Since the discovery in 1964 of particles resembling papovaviruses in the brains of PML patients, evidence has been methodically accumulated that members of this subgroup of polyomaviruses (e.g. JC and BK viruses) cause PML in man and glial tumours in primates. SV 40 and polyoma, well characterised viruses with known oncogenic potential, belong to the same