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Book reviews

Vinters HV, Farrell MA, Mischel PS, Anders KH

Diagnostic Neuropathology

Marcel Dekker, New York, 1998, 688 pages h/b. Price $225. ISBN 0–8247–9888–0

This book has been produced as part of a series (Diagnostic Pathology series/1) and I suspect that most of the features which make it less than ideal are imposed by the format for this series selected by the publishers. Firstly it is in A5 format which always makes it difficult to synchronize pictures with text. Secondly the illustrations are in black and white throughout which will inevitably deflect many potential purchasers to its rivals. In its scope it is admirably broad and quite comprehensive despite the authors disclaimer regarding this in the preface.

The book is not merely concerned with diagnostic pathology and includes a series of interesting diagrams which illuminate various aspects of pathogenesis and which are in danger of being plagiarized for undergraduate teaching. It is undoubtedly let down by the quality of some of the photographs where illumination is either dim, uneven, or both. There is a touch of humour about this, for example where the photomicrographs of *Naegleria fowleri* meningoencephalitis are accompanied by a caption reading 'as these micrographs indicate, the trophozoites can be difficult to distinguish...' The book contains many excellent sections which reflect the interests of the authors, e.g. the sections on AIDS, tumours, developmental neuropathology. There are also some areas where others might have used a different ordering of the content, e.g. prion diseases are included in the chapter on infections. Overall the book is sound as a primer, and its fate will be decided by how well it competes with other volumes of similar content. A particular deterrent to purchasing as an individual (presumable at a relatively early stage of training) will surely be the price, but institutional libraries may decide that it is worth a place on their shelves.

P. Ince

Vinters HV, Farrell MA, Mischel PS, Anders KH

Diagnostic Neuropathology

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Recently we have witnessed the publication of a number of successful texts on neuropathology. Many of these are for the specialist and few for the student. The need for well-balanced introductory texts providing guidance in the study of the diseases of the nervous system or those that can be used as a quick reference is paramount. A new book entitled *Diagnostic Neuropathology* by Harry V. Vinters, Michael A. Farrell, Paul S. Mischel and Karl H. Anders is such a text with the well-defined aim of wishing to be a 'primer' rather than encyclopaedic reference book. The book reflects the experience of two distinguished practising neuropathologists plus a general pathologist with an ongoing interest in neuropathology and also has contributions from a fourth author, who has recently completed training, thus ensuring that the needs of a wider readership are considered. The book comprises 10 chapters and these cover the major areas of neuropathology. The first chapter gives a brief and concise introduction to neurobiology and the way nervous tissue reacts to injuries. The second chapter is on the common cerebrovascular diseases and anoxic–ischaemic changes. The third chapter gives an introduction to craniocerebral and spinal trauma. The fourth and in many ways one of the most detailed chapters is on infections, including a detailed description and illustration of the HIV infection/AIDS-related nervous system complications. In addition to the major entities this chapter also gives details about conditions, including Rasmussen encephalitis, with 'possible' infectious aetiology. The separate chapter on white matter diseases is of considerable length reflecting the importance of multiple sclerosis, which epidemiologically is the single most important condition of the entities discussed. It may be misleading for the novices in the field that the authors define multiple sclerosis as an 'idiopathic demyelinating condition', although the autoimmune hypothesis of this condition is considered at length. Entities such as central pontine myelinolysis, multifocal leukoencephalopathy and the Marchiafa–Bignami disease are also discussed in considerable detail. The chapter written about nervous system tumours (chapter 6) is understandably one of the longest. It is very useful that it gives an introduction

to the interpretation of tumour biopsies, including frozen sections and smears. The classification of tumours given in this chapter is somewhat disappointing as one would like to see a concise summary of the current WHO classification given to the readers. The Daumas–Duport or St Anne–Mayo system is recommended for grading astrocytic glial tumours and details of this approach are given. Although many neuropathologists, including the author of this review, have been successfully using this simple and reproducible system in their everyday practice, one would also expect to see that the unified WHO principles for glioma grading are shown. The authors' tumour classification is generally difficult to follow as lesions such the mesenchymal tumours also include gliosarcoma, lymphomas and leukaemias and the whole group is 'misplaced' between neuronal hamartomas/neoplasms and embryonal neoplasms. The seventh chapter on developmental and paediatric neuropathology is well written and illustrated. Chapter 8 on neurodegenerative disease includes the most important entities and provides basic genetic information, which was available at the time of writing this book, and immunohistochemical features of the different inclusions. It is disappointing that one cannot find an appropriate definition of the sporadic form multiple system atrophy defined by the glial cytoplasmic inclusions. Chapter 9 on metabolic diseases is an interesting part of this book and I found the part on mitochondrial diseases especially a good introduction to this topic. Chapter 10 on the muscle and peripheral nerve diseases is similarly good and enjoyable reading. My greatest disappointment about this book is undoubtedly the quality of a majority of both the macro-illustrations and the photomicrographs, although luckily there are several exceptions to this, such as those that illustrate the tumour and developmental/paediatric chapters or the chapter on muscle diseases. However disappointing the pictures often are, this book can, especially when the illustrations have been amended in possible future editions, be a useful companion for anybody looking for an introduction to neuropathology as a student or for a non-specialist examiner of neurological, neurosurgical cases.

T. Revesz

Markesbury WR (ed)
Neuropathology of Dementing Disorders

Arnold, London, 1997, 392 pages. Price £125.00. ISBN 0–340–590378

Although the rate of biological ageing differs between individuals, it is a time-dependent irreversible process on which various disease processes may be superimposed. The potential maximum life-span for any given individual depends on a number of factors, but there has been an enormous expansion of the 'ageing population' in all industrialized countries, with perhaps a less marked one in developing countries, in the last century. In the US in 1900 only 4% of the population were over the age of 65; while in 1986 it was 11.6%. In 2030 it is estimated to rise to about 20%. Some degree of neurodegeneration is an inevitable consequence of the ageing process, so it important to address its effects on the central nervous system. The leading cause of adult-onset dementia is Alzheimer's disease (AD). Currently the accuracy of clinical diagnosis of AD is approximately 85%, but for Lewy body dementia, for example, it is estimated to be about 50%. Brain biopsy, seldom performed in practice, is the only method of moving diagnostic accuracy to nearly 100%. As there is as yet no intervention that halts or reverses the underlying pathophysiology of these disorders, an invasive brain biopsy is rarely justified to confirm a diagnosis. A definitive diagnosis is therefore dependent on pathological examination of the brain at *post-mortem*.

It is a difficult task to assemble an 'up-to-date review', particularly in this area of specialized pathology. This attractively organized, designed and heavily referenced volume is intended to bring together, in a single source, the most up-to-date information available. For the most part it achieves this aim. The text is divided into 18 chapters which cover all the major causes of cognitive decline. Thirty-three authors, encompassing an appropriate blend of physicians, neuropathologists and neuroscientists, contributed to the book and it achieves an impressive level of cohesion for such a multi-authored text.

It begins with a comprehensive overview of the clinical and neuropathological features of dementing disorders with emphasis on treatable or reversible conditions. This is followed by a chapter on neuro-imaging and a very useful chapter on normal central nervous system ageing. Alzheimer's disease (AD), either alone or in combination with other conditions, accounts for 60–80% of dementias and is given particular emphasis. All aspects of the disease including clinical features, diagnosis, genetics and animal models are covered. The extensive analysis of the amyotrophic lateral sclerosis–parkinsonism–dementia–complex of Guam, suggests that severe

involvement of the hippocampus may not necessarily be associated with memory impairment, as has been assumed in AD. As pointed out in this chapter, the relative paucity of senile plaque formation and other forms of beta-amyloid accumulation offers a unique opportunity to evaluate clinicopathological correlations, particularly with respect to neurofibrillary tangles, in a manner not possible with AD.

Vascular dementias are well covered and the problems of attempting to correlate white matter lesions with cognitive decline are addressed. The question of lower educational level as a risk factor for both vascular dementia and AD is raised with a suggestion that the risk of dementia is increased in those with limited educational background and occupational achievement. Recent studies suggest that low education by itself may not be a major risk factor, but, rather, is a marker for other accompanying deleterious socioeconomic or environmental influences in childhood.

The account of Huntington's disease includes a very useful section on trinucleotide repeats and their role in the causation of various neurological diseases. It also contains detailed accounts of pathological and neurochemical changes together with a comprehensive overview of the possible ways in which oxidative stress and free radicals may lead to tissue damage and functional disruption in the nervous system. Pick's disease, chromosome 17 linked dementias, Lewy body dementia and corticobasal degeneration are covered, with useful sections on clinico–pathological correlation and differential diagnoses. Frontal lobe degeneration of non-Alzheimer type, progressive supranuclear palsy and nutritional and metabolic disorders causing dementia are all adequately addressed. The chapter on prion diseases makes no reference to nvCJD (first described in 1996). The analysis of brain proteins, such as 14-3-3 protein (first described 1996) or tonsillar biopsy in the diagnosis of prion diseases are similarly not addressed.

I enjoyed reading this book. A personal preference would have been more extensive use of diagrams, for example to illustrate the vulnerable neuronal circuits in AD described in detail. The photomicrographs are for the most part excellent except for an occasional out-of-focus picture. Failure to include nvCJD and tests for prion diseases reflects just how difficult it is for a text book to be totally up to date.

The strength of this book is the compilation of a large amount of information about dementing processes, with emphasis on understanding the pathophysiological mechanisms involved in neurone death. It is a valuable addition for any neuropathologist attempting to diagnose these conditions.

F. Brett

Ridley RM, Baker HF
Fatal protein. The Story of CJD, BSE and Other Prion Diseases

Oxford, Oxford University Press, 1998, 249 pages. Price £22.99. ISBN 0-19-852435-8

The explosion of interest in human and animal prion diseases over the past 15 years has been fuelled by rapid developments in science, the emergence of new diseases in a wide range of species and (not least) political upheaval. Although several books on this subject have been published in recent years, most of those understandably relate directly to the scientific issues and their complexities, sometimes from a historical perspective. The authors of this book have made major contributions to this field particularly in experimental disease transmission. However, this book is not concerned with a detailed expostulation of their research; rather, it attempts to provide 'a clear and authoritative account of prion diseases for the non-specialist'. The book is well-written with a lucid prose style that is so often absent in the medical and scientific literature. This does not imply, however, that the text is uninformative, as it addresses the major scientific issues and clearly describes the advances, questions and uncertainties that pervade this particularly complex field. The protein-only hypothesis is wholeheartedly embraced and from this perspective; animal and prion diseases are described. I found the book particularly useful in its description of the earlier literature on scrapie and kuru with a fascinating debate on whether cannibalism actually occurred within the Foré tribe. The transmission characteristics and genetics of prion diseases are not shirked and in particular the section on human genetics is clearly described. Not surprisingly, much emphasis is put on the scrapie–BSW–CJD relationship, and this is put within a wider context than in most other books in this field as it does not shrink from addressing and questioning the political issues around BSE and new variant CJD.

The text is usefully supplemented by a number of line diagrams and occasional monochrome illustrations,

which are clearly reproduced. The authors' scholarship is worn lightly – a very useful glossary is included at the end of the text with key references up to 1997 and a useful recommended reading list, which is particularly helpful for the specialist around key areas. The text is divided into 10 chapters which are, in turn, subdivided into topics with headings rather different from those encountered in scientific texts, for example 'Are prions alive?', 'Beware the ides of March', 'Was there secrecy?' and 'Three feasts and a funeral'. These subheadings do something to alleviate the otherwise grave tone of the book (particularly for the non-specialist) and provide useful landmarks in the text.

I greatly enjoyed reading this book, which is well worth its modest price. The authors are to be congratulated on producing a well-written and informative book which has enough in it to interest specialists in the field but is entirely successful in its aims to appeal to the non-specialist – the book has been well used by visiting students and research staff in our department, who have been unanimous in their enthusiasm. Although not comprehensive (and not intended to be) the breadth and scope of the contents is wide and surprisingly well detailed, with adequate references and pointers for further reading. The glossary is particularly helpful for non-specialists and the index is satisfactory. The quality of reproduction is good, particularly considering the price.

Overall I would recommend this book for its target audience of 'those who have a professional or general interest' in this field, and to anyone who wishes to find out more about the scientific, medical and political aspects of these fascinating diseases. A small and unexpected point of interest for British neuropathologists arises in the preface, where the authors describe their meetings with the late Professor Leo Duchen in Queen Square, who could cast a formidable shadow at neuropathology meetings. Their description of 'long afternoons with him discussing the intricacies of neuropathology and the vanity of scientists, and eating Rich Tea biscuits', helps paint a gentler face on this figure.

J. W. Ironside