

Book Reviews

CEREBRAL DYSGENESIS: EMBRYOLOGY AND CLINICAL EXPRESSION. 1992. By Harvey B. Sarnat. Published by Oxford University Press. 473 pages. \$CDN 105.00.

This book is a definite requirement for any resident in Neurology or established clinician with an interest in cerebral dysgenesis. The author has succeeded in presenting the complex array of central nervous system malformations in a logical, thoughtful manner combining the right mixture of normal human nervous system development with alterations of the maturational processes and their clinical pathological expressions.

The first chapter presents a clear yet detailed description of the principles and processes underlying maturation of the human nervous system and lays the foundation for understanding the pathophysiological mechanisms involved in the alterations detailed in the later chapters. There is a section on cyto-differentiation combining a discussion of results of his own work and that of others in this field. The latter part of this chapter introduces some clinically relevant structural abnormalities identified on CT scan or pathology as they relate to different stages of maturation. This chapter discusses relevant molecular biologic strategies not found in other embryological texts.

The second chapter defines a lexicon and introduces a general overview of categories of disorders of neural induction and maturation. Chapter 3 highlights the usefulness for a clinician of recognizing various dysmorphic features in directing investigations towards a malformation and the relevance of ancillary investigations. There is good use of clinically relevant examples.

The subsequent 4 chapters sub-divide the major categories of the anomalies according to specific regions or cellular events. Chapter 4 deals with the category of midline forebrain anomalies. Disorders such as prosencephaly, holoprosencephaly and colpocephaly are discussed in relation to a variation on severity of the same pathophysiological anomaly. Chapter 5 deals with disorders of neuroblast migration ranging from disorders occurring earlier in development such as lissencephaly, the most severe form, to anomalies occurring later in development, such as small areas of heterotopia following lesions in the prenatal period of the preterm infant. Disorders such as Dandy-Walker, Chiari malformations and Klippel Feil Syndrome are discussed under the heading of Developmental Disorders of the Posterior Fossa. Certain neurocutaneous diseases are discussed under the category of primary cytological dysgenesis. These chapters are masterfully presented with an appropriate discussion of pathophysiological basis and clinical and neuroanatomical features that include photographs of dysmorphic features, CT scans, and/or gross anatomical specimens and relevant microscopic sections.

The concluding chapter 8 provides a welcome, thought provoking, discussion of the issue of evolution and embryogenesis comparing and contrasting phylogeny and ontogeny. Sarnat uses his broad knowledge base as a comparative anatomist and obvious passion for the subject material to provide a perspective on the emergence of the human brain. This book is an accomplishment of what the author set out to do. It has integrated the basic scientific knowledge of neuroembryology with the array of clinical dysgenetic entities in a manner that is logical, clear, practical and relevant to the practice of neurology. We must congratulate the author for putting together an excellent text that will be appreciated by all with an interest in cerebral dysgenesis.

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MR ANGIOGRAPHY: A TEACHING FILE. 1993. Edited by Michael Brant-Zawadzki, Orest B. Boyko, Maureen C. Jensen and Gary D. Gillan. Published by Raven Press Limited. 259 pages. \$CDN 98.00 approx.

MR Angiography: A Teaching File, contains 100 cases covering a wide range of cerebrovascular disease which are presented with a brief clinical history followed by MR or CT images of the head and subsequent MR angiography. Correlative conventional angiography studies are included in the majority of the cases.

The quality of the images is uniformly good throughout and there are sufficient markers and description included to help the reader orient and analyze the images.

The text is brief and to the point, giving the findings and a short discussion of the significance of the findings with suggestions on how to optimize the MRA images and avoid pitfalls. For those who prefer learning by a case approach, the text is quite effective in providing numerous clinical examples where MRA can be applied and in pointing out its limitations. The text assumes an advanced knowledge of MR and MRA. The case discussions provide brief explanations of the physical basis behind important findings and artifacts, but the emphasis is on the recognition and significance of the abnormalities as opposed to details of their origin.

Clinical problems are demonstrated where MRA has been a useful adjunct to conventional angiography and its role in both diagnosis and follow-up is demonstrated.

This book is interesting with excellent examples correlating MR, MRA and conventional angiography findings as well as numerous valuable teaching points. It would be useful for those who have at least a basic knowledge of MR and MRA techniques and would like to see more examples of pathology with conventional angiographic correlation.

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SKULL AND SPINE IMAGING: AN ATLAS OF DIFFERENTIAL DIAGNOSIS. 1994. First Edition. By Ronald L. Eisenberg. Published by Raven Press Ltd. 302 pages. \$CDN 137.00 approx.

This atlas is intended to provide radiologists, neurologists and neurosurgeons with differential diagnoses based on pattern recognition in neuroimaging studies. Modalities include plain radiographs, myelograms, CT and MR. There are no angiograms. The book is divided into two main sections, skull and spine. Within each section there are multiple chapters based on specific patterns, i.e., multiple intracranial calcifications. These chapters present a comprehensive differential diagnosis with written description of imaging findings and comments helpful in differential diagnosis. A few examples are illustrated in each chapter.

The book is well written and easy to read. The differential diagnoses are well organized and comprehensive. The added comments are quite helpful. There is an emphasis on plain radiography. In terms of cross sectional imaging modalities, the emphasis is on CT. Some of the CT and MR images are poor quality. Findings on different modalities (plain film, CT, MR) for a given entity have to be searched for in multiple different chapters.

The main strength of the book is in the plain radiographic images. It is somewhat inadequate for the more advanced imaging

techniques. In general, I think this volume would be useful to trainees in Radiology and the Neurosciences. The plain radiographic differentials may be useful to the practicing radiologist.

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CLINICAL MAGNETIC RESONANCE ANGIOGRAPHY. 1993. First Edition. By Charles M. Anderson, Robert R. Edelman and Patrick A. Turski. Published by Raven Press. 498 pages. \$CDN 176.00 approx.

Magnetic resonance angiography (MRA) has been the object of intensive research by MR scientists and radiologists in recent years. This book, edited by three leading authorities in MRA development and applications, provides a background in the fundamentals of the technique and brings together early clinical experience, advancing MRA toward routine clinical use.

The first section of the book is devoted to principles of MRA (physics, flow phenomena, artifacts, etc.). An excellent chapter on diffusion/perfusion imaging is included in this section. A seemingly misplaced chapter on development of MRA is present at the end of this section. The second major section of the book is devoted to clinical applications of MRA, principally neurovascular. A few chapters at the end of the book deal with body MRA, including an "atlas" of vascular anatomy of the body. Each chapter includes an extensive and current reference list.

The detail presented on physical principles is probably excessive for the majority of neurologists and neurosurgeons. Very basic concepts are, however, easily extracted. Of greater interest to the neuroscience physician is the clinical applications section. Illustrative examples are numerous and there is abundant conventional angiographic correlation. The images are current and of excellent quality. Clinical applications and their current role are discussed, with a weighting in favour of MRA over other imaging techniques. Some of the imaging protocols discussed might prove impractical within the time constraints of a busy magnet.

Overall, this volume is an excellent resource for physicians who are involved with MRA on a day-to-day basis. It will appeal mainly to MR radiologists, however, neuroscience physicians with an interest in cerebrovascular disease would certainly profit from review of selected chapters.

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DIAGNOSTIC NEURORADIOLOGY. 1994. First Edition. By Anne G. Osborn. Published by Mosby-Year Book, Inc. 936 pages. Price not available.

This remarkable book presents a comprehensive overview of anatomy, pathology and neuroimaging findings in diseases of the central nervous system. It is beautifully illustrated and well written, making easy and enjoyable reading. The text is divided into five parts: Brain development and congenital malformations; vascular; brain tumors; infection, white matter abnormalities and degenerative diseases; and spine. There is a well-balanced emphasis on CT, MR and angiography throughout. Extracranial head and neck disease is not included.

The individual chapters are richly illustrated. Pathologic correlation is heavily emphasized and there are numerous pathologic photos (many in colour) as well as line drawings illustrating pathology and anatomy. The images presented are of highest quality. The text

is quite comprehensive, though not overly so. Discussion of rare disease processes is limited but an extensive and up-to-date reference list is presented at the end of each chapter. The text is enhanced by numerous text boxes summarizing a given disease entity or presenting concise differential diagnoses.

This text is a "must buy" for radiologists, neurologists, neurosurgeons and their trainees. It combines a very current text with high quality imaging, superb pathologic correlation and illustrations.

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EPILEPSY IN CHILDREN. Second Edition. (The International Review of Child Neurology.) 1993. By Jean Aicardi. Published by Raven Press. 555 pages. \$CDN 124.00.

There are two types of textbook: the single author one and the multi-authored tome. I prefer the former as it is usually more of one piece and readable than a multi-authored text and tends to reflect an author's views and opinions more consistently. This type of book is less common obviously because it is a much more onerous task. We are fortunate that Jean Aicardi, a pre-eminent child neurologist in the English speaking world, has given us the second edition of *Epilepsy in Children* as well as his textbook on child neurology in this his second language.

Like its predecessor, the format is much the same. There is an introductory overview of epilepsy followed by a classification of seizures and the epilepsies. The second part of the book takes in the major types of seizures and epileptic syndromes. There is then a section on epilepsies related to age groups or particular causes such as photosensitivity and also on status epilepticus. The last part of the book then covers diagnosis, management and the medical and surgical treatment of the epilepsies.

The text covers 430 pages: there are 2500 references – up by 1000 from the previous edition – and the overall length of the book is increased by 100 pages.

The depth of knowledge, clarity and thoughtfulness are all of the very high standard that we have come to expect from Aicardi. There is a new section on the myoclonic epilepsies of infancy and early childhood that is most helpful. The descriptions of Landau-Kleffner syndrome of acquired aphasia and the odd syndrome of "continuous spike wave discharges in slow wave sleep" are well done and well discussed. The section on medical management as well as the new section on surgical management are thoughtfully written from a clinical viewpoint and the current new crop of anticonvulsants is included, although there is little reference made to clobazam which seems to be more widely used in Canada than elsewhere. I admit to finding the early section on the classification of epileptic seizures and the proposed classification of "epilepsies and epileptic syndromes", somewhat unsatisfactory, mixing as it does anatomic localisation, causation and "special syndromes", but there seems to be no ideal classification. In my more cynical moments I sometimes suspect that those who reclassify epilepsy at each international meeting do this more in the fashion of butterfly collectors than scientists.

One test of the value of a book is how it helps with specific clinical points that one encounters in one's practice. I looked up neonatal seizures characterised by apnea and was glad to be reassured at how rare it was, and also used some of the references cited. Later I referred to the discussion on benign occipital epilepsy and found this helpful, and also the section on the changing morbidity and mortality of status to be well referenced and up to date.