

Book Reviews

Brain Failure and Resuscitation - Volume 2: Clinics in Critical Care Medicine Series, 1981. Edited by Ake Grenvik and Peter Safar. Published by Churchill Livingstone, New York. 268 pages. \$48.75 Cdn.

Current interest in brain resuscitation, particularly in barbiturate coma, therapy makes this a timely volume. Like all multi-authored works, this book suffers somewhat from differences in style and levels of excellence in the various contributions. Overall however, it is well done and very well referenced.

Particularly good is the chapter by Rehncrona and Siesjo on metabolic and physiologic changes in acute brain failure. Starting with normal brain metabolism, the authors trace the events occurring in acute brain failure including hypoxic, ischemic, and hypoglycemic states. They review this controversial area well. Particularly interesting are their comments that the degree of local lactic acidosis may influence the outcome of transient ischemia and hypoxia. A continued supply of glucose to severely ischemic tissue may markedly enhance tissue acidosis and contribute to cell damage. They review also brain metabolic changes in status epilepticus, and comment that in animals brain lesions occur despite control of systemic factors such as hypoxemia and hypotension. This suggests that brain cell damage in status epilepticus is at least partly related to the excessive metabolic rate. Seizures are accompanied by a marked accumulation of free fatty acids, particularly arachidonic acid, even when tissue oxygenation and energy state is maintained. Possibly these or other local metabolic changes may result in neuronal cell damage.

The chapter on the clinical evaluation of acute brain failure by J. Caronna is well done and will be of particular interest to clinicians. Resuscitation after brain ischemia is discussed by Peter Safar. After a review of pathophysiology and general resuscitative measures, several specific therapies are discussed. These include bar-

biturate therapy, where Safar points out that barbiturate loading after cardiac arrest is under controlled clinical study with final results expected in 1983. Although clinical feasibility trials have been promising, barbiturate loading has very significant complications including cardiac arrest and hypotension. The cost/benefit ratio of this treatment after cardiac arrest and brain ischemia has not yet been determined.

The management of head trauma and intracranial hemorrhage is discussed by Teasdale and Galbraith. The authors point out that "there is no convincing evidence that steroids in conventional doses have any effect upon intracranial pressure in head injuries, and the few controlled studies that have been carried out have not shown any clear improvement in outcome". With regard to the use of barbiturates in head injury, they state that although barbiturates can often reduce intracranial pressure in head injury, their use at present should be restricted to carefully controlled studies carried out in centres equipped to deal with this demanding form of treatment.

Other chapters deal with the structural and biochemical effects of ischemic brain injury, cerebral blood flow measurements in the critically ill patient, and the radiology of brain failure. An extensive chapter on brain function monitoring deals with intracranial pressure monitoring, EEG changes, and evoked potentials. Finally, decision making in brain death is discussed in the last chapter of the book. Many pertinent subjects are discussed here, including termination of treatment and organ donation.

In summary, this book presents a comprehensive discussion of brain failure and resuscitation. It is written at a level which is useful for a wide audience including emergency room physicians, intensive care physicians, and internists. Neurologists and neurosurgeons may find certain parts of the book somewhat elementary but will profit from most of it. The book is extremely well referenced and provides an

excellent literature review for most of the topics covered.

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Histology and Histopathology of the Nervous System, 1982. Edited by Webb Haymaker and Raymond D. Adams. Published by Charles C. Thomas, Springfield, Illinois. 3520 pages. \$295.00 U.S.

The large tomes comprising this multi-authored two-volume textbook are attractively produced with large, legible type and good quality reproductions of photomicrographs and line drawings. Each of the 25 chapters is written by such international authorities as Arthur Asbury, Alf Brodal, Richard Gracek, Jean-Emmanuel Gruner, Pasko Rakic, E.P. Richardson, Dorothy Russell, K. Scharenberg, Richard Sidman, and many others including the distinguished editors.

The chapters do not follow a predictable pattern. Those related to anatomic localization of disease deal with restricted structures of the brain such as the hypothalamo-neurohypophyseal system, olfactory system, or circumventricular organs. Others are devoted to special sensory receptor organs, the autonomic nervous system, peripheral nerve, and muscle. An informative review of muscle innervation and cutaneous end-organs was written by C. Coërs and N. Cauna, although the most recently published research of these authors is not included. Chapters organized more traditionally deal with cerebrovascular disease, brain tumors, and diseases of white matter. Topical chapters deal with the blood-brain barrier, cerebral edema, and glycogen in the nervous system. The amount of space devoted to various topics does not correspond to their relative frequency in the practice of either neuropathology or clinical neurology and neurosurgery. For example, 131 pages are devoted to the olfactory system and 249 pages to the pineal; by contrast, neoplasms of the nervous system are discussed in only 23 pages. Repetitious material appearing in more than one chapter is not extensive.

The first two chapters deal with the normal embryogenesis of the brain and myelination. This reviewer was pleased to find renewed emphasis on both ontogenetic and phylogenetic development as a perspective of some diseases in many chapters, but the attention to development was not accompanied by a systematic discussion of cerebral dysgenesis. Topics in pediatric neuropathology are largely ignored or dismissed in a few sentences. Important disorders of children, such as intraventricular hemorrhage in the premature infant, chromosomal diseases, and cerebral palsy, are not addressed. Others, such as the neurocutaneous syndromes and aminoacidopathies, are inadequately discussed.

The most serious limitation of this work is that most of the material is at least a decade old. Scanning the references accompanying almost any chapter reveals that less than ten percent were published since 1969. The editors are aware of the problem. The

first page of Chapter 1, 'Development of the Human Central Nervous System', contains an apologetic footnote by the editors acknowledging that the chapter was written in the late 1960's and "methodological advances have resulted in the accumulation of a large number of new and relevant findings . . . not covered in the present review". This comment is applicable to many other chapters as well.

Chapter 28 on the pathology of striated muscle is a time warp to the year 1938 when its principal author, the late G. Wohlfart, was at the zenith of his productive career. As a statement largely of his own experience and research, this fascinating historical account would be an interesting and unique contribution if it had been balanced by a companion chapter written by a present-day muscle pathologist. Standing alone in a 1982 textbook of neuropathology it appears less gracious. The attempt by K. Hendrikson to 'update' the chapter still results

in more than 85 percent of the 181 cited references dating from before the Second World War. Even the editors felt compelled to comment in numerous footnotes on the controversies of another age. In other cases, historical aspects are intentionally included and provide a delightful introduction to a more recent contribution. An example is the reproduction of Del Rio Hortega's 1932 account of the pineal organ.

In conclusion, these two volumes are not a contemporary statement of neuropathology, and do not provide a balanced survey of neuropathology for use as a primary textbook. The historical accounts and the emphasis on specialized topics make the work valuable as a supplementary reference. As such, it should be available in medical libraries, but most pathologists, neurologists, and neurosurgeons could not justify the purchase for private use.

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