There is not much that the neurosurgeon can do about the "first injury", so that one's therapeutic impact focuses on the prevention of the "second injury". The latter can be produced by hypoxia and hypercarbia, themselves having a myriad of causes. The prevention of the "second injury" is the theme of the well-written chapter on the care for the child with the "severe" head injury. The reader is taken step-wise through the child's management from the scene, to the Emergency Room and then beyond. Orthodox principles are again enunciated as they must so often be. We learn from this particular author's broad experience that the Glasgow Coma Scale while not ideal has its purposes. Thus, patients with GCS of 7 or less are intubated, those at 5 or below have an ICP monitor placed and ventilation controlled. Corticosteroids are used in children with scores of 5 or less, anticonvulsants and antibiotics not "routinely adminstered" and barbiturates held for patients who show spontaneous waves of pressure or baseline ICP above 20 torr.

This chapter is followed by one which deals with the mechanisms and treatment of intracranial hypertension in children. Basic principles are again stated, and amply illustrated with the results of experimental work. The only fault with this section may be its sequencing; it would have better served as a lead-in to the preceding chapter.

The section on the neuropathology of children's head injuries is written in exquisite detail; for example, brain edema following a non-infected penetrating wound is "present already 4 minutes after injury, and within 30 minutes to 2 hours strikingly increases in severity and extent". The author makes every effort to confine his remarks to the injury in children, and the principals and literature sources which are referenced provide an excellent review of the pathology of head trauma. There is considerable emphasis on the biomechanics of injury, and the effects of shearing. Not satisfied with the direct cerebral consequences of trauma, there is reference to secondary insults to cranial nerves, pituitary and vascular structures, as well as the sequelae of raised ICP. While the chapter concludes with anticipated comments on the late sequelae of head injury and the pathology of the persistent vegetative state, its overall topicality is represented by several paragraphs on the pathology of the "respirator brain".

The experienced clinician who thus far is au fait with the facts presented in the text may simply pick it up to determine what outcome can be expected in a child with a severe head injury. The chapter devoted to this aspect could very well be the most controversial in the text. A number of pediatric neurosurgeons would take issue with the statement that a "6-10% mortality is as high as should be expected in the absence of major multiple trauma", and that "children less than 15 years of age who survive from acute head trauma rarely are left in a chronic vegetative or severely disabled state". While there is a wide-held belief that children with severe head trauma "do better" than adults, a principal again set forth in this chapter, it may very well turn out that material accumulating in the International Data Bank Series will disprove this.

The author of a separate section on post-traumatic epilepsy in children notes that while early seizures may be an indicator of the injury severity, it "is unclear whether early seizures per se have any influence on ultimate prognosis". While it is acknowledged that such early seizures can only complicate the general management of head injured children, it is recognized that attempts to diminish the frequency of early seizures can be very awkward. Late seizures are more ominous, often reflecting the severity of the original head injury. As a single late post-traumatic seizure carries a recurrence risk of 45%, therapy is recommended, beginning with phenytoin, and it is again stressed that single drug administration is preferred to "polytherapy".

Those fortunate to have a children's rehabilitation facility available for their patient's further care will appreciate the detailed planning outlined in a chapter on this topic. Such therapy is multi-disciplined, must begin while the child is still in the acute phase of recovery and is dedicated to restoration of function to the highest level permitted by the organic deficit(s).

When the litigation process begins after a child's injury, the reporting physician desperately needs guidance on the expected neuropsychologic outcome for his patient. A chapter on this topic reminds us that the biologic "plasticity" of the child's brain (after injury) may not be what we think it is and thus children are *not* relatively impervious to congitive impairment after closed head injury. In fact, memory and motor skills may be substantially impaired. The wisdom imparted here by experienced authorities is worth reviewing before preparing the next medico-legal report.

All the contributors to this book dedicated themselves to the task of reporting on children's head injuries and they have in my view succeeded. Every now and then there creeps in acknowledgement of adult experience, but the volume is a worthy purchase because of its adherence to the stated theme, and in particular for certain excellent chapters.

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Books Received

CATECHOLAMINES AND BEHAVIOUR. 1984. By Stephen T. Mason. Published by Cambridge University Press. 464 pages. $74 Cdn. approx. (hardcover), $31 Cdn. approx. (paperback).

CATECHOLAMINES, PART A: BASIC AND PERIPHERAL MECHANISMS. Series: Neurology and Neurobiology. Edited by Earl Usdin, Arvid Carlsson, Annica Dahlstrom and Jorgen Engel. Published by Alan R. Liss. 420 pages. $150 Cdn. approx.

CATECHOLAMINES, PART B: NEUROPHARMACOLOGY AND CENTRAL NERVOUS SYSTEM — THEORETICAL ASPECTS. Series: Neurology and Neurobiology. Edited by Earl Usdin, Arvid Carlsson, Annica Dahlstrom and Jorgen Engel. Published by Alan R. Liss. 520 pages. $175 Cdn. approx.

CATECHOLAMINES, PART C: NEUROPHARMACOLOGY AND CENTRAL NERVOUS SYSTEM — THERAPEUTIC

ASPECTS. Series: Neurology and Neurobiology. Edited by Earl Usdin, Arvid Carlsson, Annica Dahlstrom and Jorgen Engel. Published by Alan R. Liss. 260 pages. $119 Cdn. approx.

CLINICAL ANESTHESIA IN NEUROSURGERY. 1984. Edited by Elizabeth A.M. Frost. Published by Butterworths. 480 pages. $62 Cdn. approx.

CLINICAL ELECTROMYOGRAPHY: NERVE CONDUCTION STUDIES. 1984. By Shin J. Oh. Published by University Park Press. 544 pages. $61 Cdn. approx.

CONTEMPORARY NEUROLOGY. 1984. Edited by M.J.G. Harrison. Published by Butterworths. 641 pages. $75 Cdn. approx.

DEVELOPMENT OF NERVE CELLS AND THEIR CONNECTIONS. 1984. By W.G. Hopkins and M.C. Brown. Published by Cambridge University Press. 137 pages. $37 Cdn. approx. (hardcover), $17 Cdn. approx. (paperback).

FROM NEURON TO BRAIN. 2nd Edition. By Stephen W. Kuffler, John G. Nicholls and A. Robert Martin. Published by Sinauer Associates, Inc. 651 pages. $38 Cdn. approx.

INFECTIOUS DISEASES OF THE CENTRAL NERVOUS SYSTEM. 1984. Edited by Richard A. Thompson and John R. Green. Published by Spectrum Publication Inc. 256 pages. $50 Cdn. approx.

JAMIESON'S FIRST NOTEBOOK OF HEAD INJURY. Third Edition. By Brian North. Published by Butterworths. 116 pages. $12 Cdn. approx.

METHODS FOR NEURONAL RECORDING IN CONSCIOUS ANIMALS. Ibro Handbook Series: Methods in the Neurosciences, Volume 4. By Roger Lemon. Published by John Wiley & Sons, Inc. 162 pages. $50 Cdn. approx. (hardcover), $25 Cdn. approx. (paperback).

METHODS FOR PREPARATION OF MEDIA, SUPPLEMENTS AND SUBSTRATA FOR SERUM — FREE ANIMAL CELL CULTURE. Series: Cell Culture Methods for Molecular and Cell Biology. Edited by David W. Barnes, David A. Sirbasku and Gordon H. Sato. Published by Alan R. Liss. 378 pages. $62 Cdn. approx.

METHODS FOR SERUM — FREE CULTURE OF NEURONAL AND LYMPHOID CELLS. Series: Cell Culture Methods for Molecular and Cell Biology. Edited by David W. Barnes, David A. Sirbasku and Gordon H. Sato. Published by Alan R. Liss. 280 pages. $49 Cdn. approx.

NEURAL ORIGIN OF RHYTHMIC MOVEMENTS. 1984. Edited by Alan Roberts and Barry L. Roberts. Published by Cambridge University Press. 503 pages. $93 Cdn. approx.

PERIPHERAL NERVE DISORDERS. NEUROLOGY 4. Edited by Arthur K. Asbury and R.W. Gilliatt. Published by Butterworths. 339 pages.

PROGRESSIVE SPINAL MUSCULAR ATROPHIES. Edited by I. Gamstorp and H.B. Sarnat. Published by Raven Press. 243 pages. $28 Cdn. approx.

SENILE DEMENTIA: OUTLOOK FOR THE FUTURE. Series: Modern Aging Research, Vol. 5, 1984. Edited by Jean Wertheimer and Maurice Marois. Published by Alan R. Liss. 562 pages. $85 Cdn. approx.

STRESS, IMMUNITY AND AGING. Immunology Series, Volume 24. Edited by Edwin L. Cooper. Published by Marcel Dekker Inc. 336 pages. $75 Cdn. approx.

THE EPILEPSIES: A CRITICAL REVIEW. 1984. By Robert B. Aird, Richard L. Masland and Dixon M. Woodbury. Published by Raven Press. 320 pages. $65 Cdn. approx.

THE HYPOTHALAMUS OF THE GUINEA PIG: A Cytoarchitectonic Atlas. 1984. By Ruth Bleier. Published by the University of Wisconsin Press. 134 pages. $62 Cdn. approx.

THE NEUROMUSCULAR JUNCTION. Edited by Roger A. Brumback and Jeffery Gerst. Published by Futura Publishing Company. 354 pages. $49 Cdn. approx.

Correspondence

INTERACTIONS OF ANTIEPILEPTIC DRUGS

To The Editor:

Readers of Albright and Bruni's article, Pharmacokinetic Interactions of Antiepileptic Drugs (1984; Vol. 11: 247-251), should be made aware of two other important drug interactions involving this group of drugs.

We showed that cimetidine decreased the clearance of phenytoin (Bartle et al., 1983). Although the interindividual range of decreases was considered, with reductions up to 25% after 1200mg cimetidine a day and up to 33% after 2400mg a day, in all subjects studied there was a greater reduction in clearance with 2400mg a day than with 1200mg a day. Hetzel et al. (1981) showed that cimetidine increased plasma levels of phenytoin in four epileptic patients, one of whom became clinically toxic. H_2-antagonists, in general, and cimetidine, in particular, are thought to be the most widely prescribed drugs in the world. Ranitidine is known to have little if any effect on hepatic drug metabolizinag enzymes and thus should be a safe but effective alternative to cimetidine for patients on anticonvulsant drugs.

Erythromycin is thought to inhibit hepatic drug metabolizing enzymes and has been shown to produce carbamazepine toxicity in four young epileptics (Hedrick et al., 1983).

Drug interaction studies and anecdotal reports have mentioned only a few of the many drugs that could potentially interact with the various anticonvulsant drugs. Patients who are having additional drug therapy added to their anticonvolusant regimens should have plasma level monitoring performed more frequently during these periods.

Bartle WR, Walker SE, Shapiro T (1983) Dose-dependent effect of cimetidine on phenytoin kinetics. Clin Pharmacol Therapeut 33: 649-655.

Hetzel DJ, Bochner F, Hallpike JF, Shearman DJC, Hann CS (1981) Cimetidine interaction with phenytoin. Brit Med J 282: 1512.