Part 1. Physiology and Pharmacology

The first part of the book comprises three chapters on cerebral circulation, intracranial pressure, and the intracranial effects of anaesthetic agents. Each chapter gives an overview of current knowledge and the implications of different clinical situations to neuroanaesthesia. In the chapter on intracranial pressure figure 2.4 is erroneously described on page 22 as showing oedema around a glioma rather than post-traumatic oedema. The third chapter contains an excellent description of the effects of various anaesthetic agents on intracranial pressure, brain compliance, cerebral perfusion pressure, cerebral blood flow, autoregulation and brain metabolism, together with critical appraisal of selection of agents for different clinical situations. There is good cross referencing of key points to later clinical chapters.

Part 2. Basic Considerations of Neuroanaesthesia

The first chapters in this section describe the fundamental components of neuroanaesthesia for cranial operations with useful reference to the authors' practice. I was concerned that the authors refer to the use of naloxone to reverse narcotics after neuroanaesthesia without comment on the potential complications of this agent after cranial surgery. The second chapter describes anaesthetic techniques for neuroradiology. The section on air encephalography could perhaps be shortened in favour of a section on anaesthesia for MRI. The increasing trend for neuroradiologists to perform many procedures under sedation perhaps warrants discussion together with comment on the role of the neuroanaesthetists for radiological embolisation techniques. The third chapter reviews induced hypotension, and the effects of available agents on cardiovascular, respiratory, renal, hepatic and cerebrovascular systems. The relative merits of different agents for different clinical situations and appropriate monitoring techniques are well reviewed. The final chapter in this section classifies cerebral oedema and describes general and specific methods of ICP reduction. A description of the authors' use of mannitol in neuroanaesthesia and their fluid regime to correct hypovolaemia would have been complementary. There was no description of combined use of loop diuretics and plasma protein solutions to reduce ICP.

Part 3. Clinical neuroanaesthesia

This section comprises comprehensive chapters incorporating relevant sections on pathology, surgical techniques, and anaesthetic considerations with appropriate re-emphasis of the principles outlined in pre-

vious sections. The first chapter describes anaesthesia for supratentorial surgery. The section on stereotactic surgery is slightly misleading as coordinates can now be derived from computer assisted CT. The chapter on pituitary surgery and anaesthesia is excellent. The third chapter on posterior fossa surgery contains sections on the classification of posterior fossa lesions, clinical presentation and investigation, although the role of MRI is not reviewed. Anaesthetic considerations include positioning, the role of spontaneous vs IPPV and an excellent section on air embolism, although a discussion on continuation of anaesthesia after air embolism would be useful. There is a minor discrepancy between the correction of distance from head to transducer position in cm to mm Hg. Page 194 states 2 mm Hg = 2.5 cm while page 115 states 2.25 cm. The fourth chapter on anaesthesia for vascular lesions, perhaps over-emphasises the use of hypotension for aneurysm surgery in view of increasing trends towards cardiostable normovolaemic normotensive anaesthesia. A description of the authors' management of intraoperative ruptured aneurysm would be useful. The short review of the management of post-operative vasospasm is more comprehensively discussed on page 286, (Ch 15) in the intensive care section. The use of transcranial Doppler ultrasound in the diagnosis of vasospasm is perhaps worthy of mention. With an increasing tendency for surgeons to operate on selected patients within 48 hours of intracranial aneurysm rupture a discussion of anaesthesia for acute aneurysm surgery would seem appropriate. The fifth chapter critically reviews surgery and anaesthesia for cerebral arterial insufficiency with useful description of the authors' clinical practice. Chapter six describes anaesthesia for spinal operations with an excellent review of the problems of intubation in patients with cervical spine damage. There is no discussion of premedication for spinal surgery and the need for cross matching large volumes of blood for spinal tumour surgery requires emphasis. The final chapter on paediatric neuroanaesthesia is excellent with succinct description of important considerations related to age and a review of many practical problems during anaesthesia for investigations and surgery.

Part 4. Intensive Care The last section comprises two chapters, one on post-operative and intensive care, and the other on head injury management. Although the first gives a basic overview of post-operative complications with many useful points,

these might be better incorporated in the relevant clinical chapters. A clear distinction between intensive care methods for neurological and neurosurgical patients is lacking, particularly with regard to methods of ventilation and sedation, and there is no description of the intensive care management of cervical spine injury. The chapter also contains a basic review of electrophysiological monitoring. In contrast the section on head injury management is well organised with emphasis on important principles. The chapter would perhaps benefit from a list of indications for CT and considerations for the transport of head injured patients both between and within hospital. The section on brain stem death requires updating and expansion from the original 1976 recommendations.

I enjoyed reading this book and would recommend it as essential reading to both practising neuroanaesthetists and trainees.

NM DEARDEN

Brain Injury and Protection During Heart Surgery. Edited by Mark Hilberman. (Pp 173; £40.95). Dordrecht: Martinus Nijhoff 1987.

The aim of this slim volume is to present the results and develop the ideas of investigators working in the field of cerebral damage during cardio-pulmonary bypass, which is one of the most unacceptable complications arising during heart surgery. In the first of the nine chapters Aberg provides an excellent historical review of the improving results of cardio pulmonary bypass in the past two decades in Sweden. He suggests that most of the early damage occurred due to micro-embolisation and ends on a cautionary note that the improvement in results has not been sustained during the past 5 years, a fact which he believes is related to the almost inevitable problem of semi-microemboli.

The next three chapters consider the effects of pressure and blood flow on neurological outcome and compare the low pressure, low flow techniques in use at Stanford University with other systems to modify both arterial pressure and cerebral blood flow. The role of anaesthetic agents in altering brain blood flow and metabolism are discussed and interesting evidence is presented on the management of pCO₂ during cardio-pulmonary bypass and the preservation of autoregulation.

There follows consideration of the two major problems of micro-embolisation and macro-embolisation, those factors which

cause them and the potential to prevent them. In the case of micro-embolisation, apart from arterial line filters, the use of prostacyclin as an anti-platelet aggregant is discussed and the disappointing results of trials are reviewed. The authors consider techniques for the early identification of macroembolism and possible methods of cerebral protection with barbiturates and calcium blocking agents. This is followed by a review of methods of assessing patients, during and after cardiopulmonary bypass including EEG monitoring, evoked potentials, CT scanning, cerebral blood flow and the measurement of CSF markers. The authors stress that all tests must be compared with the "gold standard" of clinical examination and functional ability. They also make the plea for more necropsy examinations of patients dying during cardiopulmonary bypass or as a result of complications. Then follows a critical assessment of those techniques available to reduce the risk of cerebral injury during cardio-pulmonary bypass and the editor provides a final chapter on hypothermia as a method of improving or avoiding cardiopulmonary bypass.

The book is a good summary and review of a complex and important field, the editor has ensured that there is little overlap between the chapters and, although the fact that all begin with an almost identical sentence is irritating, the content is good and each is well referenced. I have two minor criticisms of this otherwise excellent book; the first is that a final precis of the present state of the art would have been useful and the second is that the editor has only invited one non-north American contributor to produce a chapter, seeming to ignore the seminal work in this field which has been performed on this side of the Atlantic.

DAVID BATES

Cerebrovascular Diseases. Fifteenth Research (Princeton) Conference. Edited by William J Powers & Marcus E Raichle. (Pp 396; \$118.00.) New York: Raven Press, 1987.

For over 30 years the now biennial "Princeton" Conference on Cerebrovascular Diseases has provided a "state of the art" review of laboratory and clinical research of that subject. The most recent conference was held in 1986 in St Louis and this volume contains the papers and discussions from the

meeting which was presented in four sections. The first papers are related to the phenomenon of brain ischaemia and the nature of the biochemical lesion. They review the evidence for the role of excitatory amino acids, cerebral lactic acidosis and impairment of protein synthesis in the development of cerebral infarction. The papers are necessarily derived from laboratory studies both in vivo and in vitro, but the clinical relevance of the possible role of aspartate receptor antagonists and lactic dehydrogenase inhibitors is raised in discussion. It is surprising that although there is much comment about alterations in intracellular calcium there is no discussion of the use of calcium overload blocking agents.

The second section concerns the regulation of cerebral vasculature and reviews the relationship of cerebral blood flow and metabolism to those factors, both local and neurogenic, which influence vascular reactivity.

It is, predictably, in the third session on the efficacy of carotid endarterectomy that the passions of the clinicians become most apparent. Professor Plum ably chairs a session in which two neurologists, a vascular surgeon and a neurosurgeon present their views on the necessity or otherwise of a controlled, randomised study of the procedure. The lively discussion which ensues reveals the present dilemma surrounding the management of patients with symptomatic, and even asymptomatic, carotid bruits. An editor's note comments that the majority of those attending would take part in such a controlled trial.

The final section is the weakest and it attempts to review some aspects of the frontiers of research in the demonstration in vivo of reversible ischaemia, the identification of those factors which influence recovery of function and the methods of establishing reperfusion of ischaemic brain.

It is inevitable that, since two years have elapsed since the Conference, most of the results and opinions reported here have now appeared in research journals but the book is a useful composite of laboratory and clinical research in cerebrovascular disease.

DAVID BATES

Pediatric Neurology and Neuroradiology. Cerebral and Cranial Diseases. By C Diebler and O Dulac. (Pp 430; DM 298.00.) Berlin: Springer-Verlag, 1987.

It is a pleasure to pick up a book which is so

clearly set out, well printed and excellently illustrated.

The authors, a French neuropaediatrician and neuroradiologist state their aim is to bridge the gap between neuroradiology and paediatric neurology. Although it is not a text book of either subject in the formal sense it is in effect a text book of clinical neuroradiology.

The text is concise, in excellent English and up-to-date. It reviews the clinical features and often pathological mechanisms of a wide variety of diseases depicting the child's brain which can be imaged with CT scanning. The illustrations (mostly CT scans with some arteriography) are profuse, relevant and very clear.

A special feature of the book is a great deal of personal experience of both authors which is drawn upon and many individual cases are presented. Cerebral cranial malformations, neurocutaneous syndromes, vascular disorders and tumours are particularly well covered. There are interesting reviews of metabolic disease. The book is well indexed and well referenced and so can act as a source of further information.

For the non radiologist perhaps a chapter on the normal scan would have been a help and also some arrows to highlight features on some of the more difficult scans.

This is a well produced text, essential for any medical library and of particular practical value to anyone, physician or surgeon who is involved in the diagnosis and management of children with neurological disease.

SH GREEN

Notice

The International Society for Paediatric Neurosurgery

The 17th Annual Meeting will be held 15-18 October, 1989 in Bombay, India. Information may be obtained from Dr S Bhagwati, Medical Research Centre, Bombay Hospital, 19 Marine Lines, Bombay 400020, India.