Matters arising

Apnoea testing to confirm brain death in clinical practice

Sir: The report of Van Donselaar, Meerwaldt and J Van Gijn¹ on apnoea testing supported observations that I have made and placed into practice over the past 4 years. The biggest problem I have encountered with valid apnoea testing is achieving a PCO₂ elevation of at least 60 mm Hg in the 10 min observation period.

Unless the initial PCO₂ is in the high normal 40–45 mm Hg range, it is unlikely that the goal of PCO₂ 60 mm Hg will be achieved. My practice has been to prepare the patient for apnoea testing, by oxygenating with 100% O₂, but reducing respiratory rate to the 6–8 per minute range, for 10

minutes before disconnection. This will generally result in a PCO₂ in the 40–45 range, with good oxygenation. The PCO₂ will usually rise to the 60 mm Hg level or higher during the subsequent 10 minute observation period when the patient is passively oxygenated with 6 l O₂ via endotracheal catheter. I found that this procedure, avoids the need for multiple apnoea tests with progressively higher initial PCO₂ until the PCO₂ 60 mm HG is ultimately achieved.

I have also noted that the cardiopulmonary status of some patients will not allow a full 10 minute observation period without arrhythmia developing. In these circumstances I will terminate the apnoea test and consider it positive. Further obser-

vations on the PO₂ and PCO₂ levels in these patients are being made.

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Reference

- 1 Van Donselaar CA, Meerwaldt JD, Van Gijn. Apnea testing to confirm brain death in clinical practice. *J Neurol Neurosurg Psychiatry* 1986;49:1071–3.

Book reviews

Current Neurology. Vol 6. Edited by Stanley H Appel. (Pp 361; £58.00.) Chicago: Year Book Medical Publishers Inc. Distributed by Wolfe Medical Publications Ltd, 1986.

This is an excellent addition to the *Current Neurology* series and a useful text in any library, either personal or departmental. As outlined in the preface, the aim is to place advances in the neurosciences into a clinical context and this is achieved in the main. The particular emphasis in this volume is on neuromuscular disorders. As is often the case, the volume could be further improved with a more generous number of illustrations.

The rewards gleaned from any text of review articles depend on one's own interests and expertise. The initial chapters on muscular dystrophy and the molecular basis of inherited neurological diseases are of interest and serve as a helpful introduction for the uninitiated into recombinant DNA techniques, gene probes, and gene linkage. These techniques potentially will lead to isolation of the gene products responsible for various inherited disorders.

Following these chapters is an excellent contribution from Professor Newsom-Davis on myasthenia gravis and the Lambert-Eaton syndrome with explanations of how basic medical research has led to major developments in patient management. These two conditions serve as excellent models of organ-specific autoimmunity in man, and the discussion is therefore also of general application.

The physiology of calcium channel control and clinical pharmacology of calcium antagonists are reviewed by Professor Greenberg. Already well established in cardiology, neurological indications for these drugs are given with interesting prospects for potential use in ischaemia and epilepsy.

There follows a chapter on recent aspects of multiple sclerosis. In many ways I found this the least satisfactory chapter. Although genetics, immunology and imaging in multiple sclerosis are all mentioned, some of the more interesting developments are not fully covered. Magnetic resonance imaging has made a considerable impact on the study of multiple sclerosis and promises to assist in the evaluation of therapeutic trials (a difficult area for clinical evaluation alone due to the variability in clinical course) and this technique is only briefly touched.

There are two chapters on movement disorders of the head and neck and neuromuscular control of speech which fit well together. The former chapter provides a simple taxonomy of the various tremors, grimaces and dystonias which affect the head and neck, a subject many find confusing. The latter chapter was perhaps less easy to immediately extrapolate to a clinical setting.

In reviewing new developments in epilepsy management the choice of drug and the surgical management of drug are stressed. The merits of anterior temporal lobectomy and amygdalohippocampectomy are discussed, reflecting the differences in practice on the two sides of the Atlantic.

Alzheimer's disease is well reviewed and generously referenced giving a comprehensive overview of the subject. Most chapters covering aspects of dementia begin by highlighting the problem posed by increasing

numbers of demented due to an ageing population, and this chapter is no exception.

The final section entitled *Neurobehaviour* explores hemisphere function and dominance particularly with regard to language. Aphasia, crossed aphasia, neglect and agnosia are covered. Localisation of function and the nature of the defects in agnosia are usefully discussed. The clinical sequelae of right hemisphere damage have long fascinated the neurologist and the further developments in the understanding of those sensory phenomena are of considerable interest.

Books of review articles may not be particularly innovative. However, informed authorities contributing well referenced texts on topics in which there have been recent developments provide useful and informative reading and may guide further in-depth exploration of the subject.

IEC ORMEROD

Surgery of Occlusive Cerebrovascular Disease. By Reginald SA Lord. (Pp 543; £72.50.) Oxford: Blackwell Scientific Publications, 1986.

Surgical cerebral revascularisation probably has as important a place in therapy as that of coronary revascularisation, but natural caution on the part of physicians, and over-enthusiasm on the part of surgeons have made it difficult, until now, to assess the place of surgery in the treatment of cerebrovascular disease. This book, written by a vascular surgeon, summarises the present situation and reviews the subject from a his-