

# PostScript

## CORRESPONDENCE

### Intracranial hypertension and giant arachnoid granulations

We read with great interest the article by Arjona *et al*<sup>1</sup> concerning a patient with intracranial hypertension (ICH) and giant arachnoid granulations (GAG). The patient was a non-obese male without known risk factors for ICH apart from left transverse sinus hypoplasia and several GAGs in both transverse sinuses. The authors suggested that arachnoid granulations (AGs) might be responsible for ICH by obstructing the sinusal venous flow.

We would like to underline another point of view concerning such a physiological role for AGs. According to Clark,<sup>2</sup> the AGs are absent at birth and develop in infants at the time of closure of the fontanelles. They increase in number and size with age and are commonly found in the vicinity of cortical venous entry sites into the sinuses, where there could be weaknesses in the dura mater. Thus they could be regarded as arachnoid herniations developing from intracranial CSF pulsation at higher pressure through dural defects into sinuses at lower pressure.

The role of AGs as the principal site of CSF absorption has been seriously questioned by many researchers. Greitz *et al*<sup>3</sup> proposed that AGs may act as "starling resistors" to prevent cortical venous collapse during variations in the intracranial pressure. Krisch<sup>4</sup> proposed a volume buffering function of the intracranial CSF compartment: AGs replace the fontanelle as a rapid volume buffering structure after its closure. According to these theories, a GAG could be the result of intracranial hypertension as well as the cause of it.

Dilated AGs in the case reported by Arjona *et al*<sup>1</sup> could be considered a compensatory cerebral vascular mechanism for increasing intracranial compliance in response to increased intracranial pressure. The fact that the patient had multiple GAGs bilaterally in both transverse sinuses could point to secondary enlargement of these structures due to ICH. We believe that "idiopathic intracranial hypertension" (IIH) should be the first diagnosis in this case, although this is less common in non-obese males.

King *et al*<sup>5</sup> have demonstrated raised pressures in the superior sagittal sinus, with a pressure drop in the distal transverse sinuses, in the majority of patients with IIH. Interestingly, CSF removal resulted in the abolition of the functional obstruction of the distal transverse sinuses.<sup>3</sup> They concluded that elevated venous sinus pressure is not the primary event in the patients with IIH.

The case studied by Arjona *et al*<sup>1</sup> is unique because, as far as we know, there are no previous reports documenting GAGs in a patient with ICH. It illustrates the likely volume buffering and "starling resistor" functions of AGs in such individuals. Whether the GAGs are the cause or effect of ICH is not known, and further studies are required to improve our understanding of the possible roles of AGs in pathological conditions.

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## BOOK REVIEWS

### Acute pain (vol 1), Practical applications and procedures (vol 2), Cancer pain (vol 3), Chronic pain (vol 4)

Series editors Andrew S C Rice, Carol A Warfield, Douglas Justins, and Christopher Eccleston. Published by Edward Arnold Publishers, London, 2002, vol 1: pp 512, £250. ISBN 0-340-80992-2; vol 2: pp 505, £130. ISBN 0-340-80995-7; vol 3: pp 407, £130. ISBN 0-340-80994-9; vol 4: pp 660, £150. ISBN 0-340-80993-0

In the preface to this four volume set of books on pain, the editors are quick to state that they do not see their work as a replacement for the (highly regarded) Wall and Melzack *Textbook of pain*, but as complementary to it. By placing emphasis on management, they have largely succeeded in this objective. No doubt, the editors and publisher will hope that many will want to own all four volumes in the set. Wisely, however, they have recognised the broad divisions within clinical practice and have separated the books into acute pain, chronic pain, and cancer pain, with a fourth book entitled *Practical procedures and applications*.

A welcome innovation is a standardised system for scoring the quality of clinical evidence in the papers referred to by chapter authors, recognising that this varies in its reliability. This will be particularly helpful to the naive reader, and is applied throughout all four volumes. In addition, important primary papers and reviews are selected and marked in the reference lists. The great

majority of the chapters are well referenced, and although the asterisks following the references in the text at first seem fussy, one quickly gets used to this and appreciates the value of the system. There is also good cross referencing between the volumes. Throughout, the editors have encouraged an evidence-based approach, and where this is limited, there is an attempt to describe current best practice. Many of the therapeutically orientated chapters contain useful guidelines or treatment algorithms.

There is a degree of overlap and duplication, particularly between the volumes on acute pain and practical procedures and applications, and to a lesser extent some topics in acute pain and chronic pain. This was bound to be the case with books intended to stand alone as well as being sold as a set. However, this does not matter, and indeed it is helpful to have more than one view on some of these important topics.

*Acute pain* starts with basic physiology and pharmacology, but includes under the heading of basic considerations, clinical assessment and pain measurement, outcome measures, and the organisation of an acute pain service. These generic chapters sit well together. There follow chapters on techniques of acute pain treatment, and then 13 chapters on a variety of common clinical situations calling for acute pain relief.

*Practical applications and procedures* contains sections on principles of measurement and diagnosis, pharmacological therapies (clearly some overlap in these two sections with acute pain), and several sections (including some 25 chapters) dealing with a wide range of therapeutic interventions. There follows a very useful section on the organisation and interpretation of clinical trials (it could be argued that this might have appeared earlier in the volume). Finally, in an honest recognition of the fact that things do not always go well and not all patients are happy with their treatment, there is a chapter on medicolegal issues.

The many topics particular to the management of pain in patients with cancer are comprehensively and clearly dealt with in the third volume in the series. In addition to the predictable subjects covered, there are welcome chapters on epidemiology of cancer pain, psychological evaluation of the patient and family, the importance of effective team working, ethical issues, and complementary therapies.

Perhaps not surprisingly, *Chronic pain* is the largest volume in the series. An extensive section on basic considerations includes, *inter alia*, chapters on evidence from experimental animal models of neuropathic pain, epidemiology, clinical assessment, psychology, and as in the first volume, medicolegal aspects in patients treated for chronic pain. The second section reviews the many treatment modalities used for chronic pain, and the third section details particular clinical conditions and situations (20 chapters). Neuropathic pains figure prominently here, reflecting their importance in clinical practice.

The quality of writing and clarity of presentation throughout these books is high, and the four series editors and nine additional individual volume editors are to be

congratulated on marshalling over 200 contributing authors. They have succeeded in their objective of producing a very practically orientated approach for clinicians, but not at the expense of skimming on the essential basic science; most clinicians should find the balance about right. The cost of all four volumes is £250; those wanting to buy one of the three volumes (acute, cancer, or chronic pain) will also get the generic book on practical applications and procedures thrown in (price £130–£150). Either way, this represents good value.

Together, the books represent a major addition to the pain literature and an important new resource for pain clinicians; they deserve to do well in an increasingly competitive market. The full series should find a place in all medical libraries as a work of reference. I suspect the editors will be facing the prospect of preparing a second edition before too long. This first edition is highly recommended.

J W Scadding

### The handbook of memory disorders, 2nd edition

Edited by Alan D Baddeley, Michael D Kopelman, and Barbara A Wilson. Published by John Wiley & Sons Ltd, 2002, pp 865, £90.00. ISBN 0-471-49819

This is an altogether excellent textbook that covers the complete range of topics related to human memory disorders. The first edition was published in 1995 and was very good, although it concentrated particularly on the clinical manifestations of memory disorders and their management. The second issue is much more broad ranging and comprehensive. The first section covers theoretical topics related to memory. Notable additions have been thorough reviews of functional imaging of memory, connectionist models, and psychopharmacological aspects of memory.

The second section deals with varieties of memory disorders. There have been a number of changes of contributors, which is always healthy, and some new additions. As well as the classic syndromes of acute and permanent amnesia, there are now sections on neuropsychological impairments of both verbal and visual short term memory. There are excellent reviews of the cognitive neuroscience of confabulation and of false memories. There is also a new section on the frontal lobes and memory, as well as a contribution on recovery of memory function in neurological diseases.

The third section of the book is entirely new and concerns development and memory, including normal memory development in the childhood years, memory in the context of intellectual disabilities, and developmental amnesias. Rather strangely, memory in the elderly and in the context of dementing disorders is also included in this section.

The final section amalgamates chapters on assessment and management of memory disorders. As would be expected given the background of the editors, this section is readable, informative, comprehensive, and up to date.

The book is attractively produced with a sufficient number of figures. It remains firmly bedded in clinical practice. This book should undoubtedly be owned by anyone

with an interest in clinical aspects of memory, particularly those involved with assessment and management. I only hope the next edition of the book is as good.

J Hodges

### Cécile and Oskar Vogt: the visionaries of modern neuroscience

Edited by I Klatzo. Published by Springer Wien, 2002, pp 130, €76. ISBN 3-211-83798-1

This slender volume sings the praises of two pioneers of modern day neuroscience, Cécile and Oskar Vogt. Replete with fascinating insights into the culture of medical and scientific thinking in Europe at the turn of the 20th century and abounding with the author's personal reminiscences of the Vogts, this is an informative, if highly personally coloured, biographical sketch and appraisal of these two neuroscientists. We are treated to the first meeting of the Vogts in Paris and the course of their subsequent life long collaboration that follows, notably with the establishment of a brain research institute in Berlin under the patronage of the Kaiser and the Krupp family.

We learn how the discrete localisation of brain function was studied employing physiological responses produced by cortical electrical stimulation in primates and, with Foerster, on the human brain, and then correlated with their coworker Brodmann's meticulous descriptions of architectonic areas of cortex. Cécile worked on extrapyramidal disorders and subcortical anatomy, notably of the thalamus, describing the status marmoratus of cerebral palsy, as well as changes in these regions in Huntington's disease. The term "pathocllisis" was coined, anticipating apoptosis and establishing also the concept of selective vulnerability, with clear descriptions of hippocampal pathology in hypoxia and changes in the pallidum in carbon monoxide poisoning. Some of the concepts of molecular genetics were anticipated, although there was a tendency to proliferate conceptual neologisms from the Greek.

An amusing interlude arrives after the death of Lenin, with an invitation to Moscow to study Lenin's brain and thereby provide indisputable confirmation of Lenin's genius under the microscope. This was the result of earlier work on the "elite brain", in an attempt to correlate cortical cytoarchitecture with behaviour. In this way, Oskar Vogt became scientific director of the Brain Research Institute in Moscow. Difficulties ensued during the Nazi era, which receive lengthy discussion, with politics both from within and without the Berlin institute leading to dethronement and banishment to the periphery. The description of the later years, in a long section entitled "personal memories", becomes increasingly personal, gossipy, and even sentimental. The careers of other accomplished neuropathologists, such as Bielschowsky, Hassler, and Olszewski are touched upon *en passant* in this rather idiosyncratic volume that is primarily of historical interest. The book is richly illustrated with photographic portraits, but in this, as with the text, the social and political angle is better treated than the scientific details of the scientific work.

R Pearce

### Neurological complications of critical illness, 2nd edition

By F M Wijdicks. Published by Oxford University Press, New York, 2002, pp 415, £79.50. ISBN 0-19-514079-6

On the morning that the request for a review of this book arrived, I had received two urgent phone calls to visit patients in our intensive care unit. One patient was stubbornly failing to awake after major surgery, and the second had apparently wakened, but was not moving very well. The cause of the problem in the first patient was the effects of prolonged sedation, and the patient eventually recovered. The second patient had a critical illness neuropathy. These are two particularly common problems in critical care medicine, and even someone not experienced in this topic would have been able to make the diagnosis in my two cases with the help of the first edition of this book.

I therefore had to consider whether or not a second edition would assist us even more.

Many of the chapters have been expanded with new information and the chapters give good common sense information about diagnosis and prognosis. There are some important sections dealing with the difficult problems of the effects of drugs on a patient in the intensive care unit. There is appropriate emphasis on the important point that drugs often have effects much longer than might be expected by their known metabolism.

What really sets this book above others dealing with similar topics are the sections dealing with prognostication. It is clear the author has carefully researched the literature in this field and particularly helpful information is contained within the section on neurological complications of cardiac disease and the chapter dealing with the outcome of acute injury to the central nervous system. The data in these chapters are supplemented with a chapter dealing with the difficulty issue of withdrawing life support. This deals with the various problems in a sensitive, yet thorough, manner and discusses palliation.

In a book with so much information and dealing with so many diverse topics, it is always possible to find areas that can be criticised. In an otherwise excellent section dealing with the guidelines for the clinical diagnosis of brain death, I felt that there was not sufficient emphasis on the need for the diagnosis of an irreversible cause for the brain damage.

This second edition is a book that all trainees in neurology should read and indeed all of us should have available to us when we visit patients in an intensive care unit. The difficult questions that we are increasingly asked about diagnosis and prognosis will be readily answered by this book, which I firmly and unreservedly recommend.

N Cartledge

### Synesthesia—a union of the senses

By Richard E Cytowic. Published by MIT Press, Cambridge, 2002, pp 424, £36.95. ISBN 0-262-03296-1

Synaesthesia occurs when an experience in one sensory modality or of a particular category (like a letter in black and white print) excites an experience in another

modality or of another category (like a letter printed in colour). Such an inclusive definition allows many of us to lay claim to minor forms of the condition. But most of us clearly do not experience the remarkable cross modal sensations described in Cytowic's fascinating book. The most common variety of classical synaesthesia is "chromesthesia", the yoking of colour sensation to the perception of numbers, letters, words (these three triggers may be written, spoken, or both), musical and other sounds, smells, temperatures, pains, or emotions. But a host of other combinations is described: Cytowic has famously described a man who tasted shapes; someone tasted tunes; another was referred for counselling when she told the assistant principal of her school—ill-advisedly—that when she kissed her boyfriend she "saw orange sherbet foam". One was so surrounded by spatial imagery, excited by everything from the alphabet to shoe sizes, that she explained "My entire life, everything, has a place that goes all round my body." Synaesthetic experiences have certain common features: they tend to start early in life; they have often "always been there"; they are involuntary, triggered automatically by their stimuli; and they are durable and consistent, memorable, pleasurable, and usually spatially extended.

The greatest virtue of Cytowic's work is his conviction that "a mental world exists" and his determination to describe it with his patients' help despite the ineffable qualities of some of their experiences. His book is, also, a treasure chest of information about a miscellany of topics that might shed light on his main subject, from eidetic imagery through Kluver's form constants to the role of metaphor in language and perception. If some parts of the book have the air of work in progress, it is a sign of Cytowic's huge enthusiasm for a topic his writing has revitalised.

A Zeman

### Behavioral neurology, 4th edition

Edited by Jonathan H Pincus and Gary J Tucker. Published by Oxford University Press, New York, 2002, pp 267. ISBN 0-19-513782-5.

The fourth edition of *Behavioral neurology* is an update of a slim volume aimed primarily at undergraduates. In the 18 years since the previous edition, quite a lot has happened in neuroscience, neurology, and psychiatry. The new volume has therefore been considerably updated to include insights from areas such as molecular biology and brain imaging. In these areas there is a little repetition between

chapters, and occasional errors of nomenclature. One surprising omission is any discussion of the large and rapidly growing area of cognitive neuroscience, which has provided valuable insights into the relationship between cognitive function and psychiatric or neurological disorders of cognition.

The content of the book is weighted somewhat towards psychiatric disease, and the selection of neurological disorders may surprise behavioural neurologists. For example, while a whole chapter is dedicated to exploring the neurobiological origins of violence, hemispatial neglect (a common and disabling disorder seen in up to two thirds of patients with acute stroke) is not mentioned at all in the text! Similarly, the pharmacologic therapy of movement disorders receives a similar space allocation to discussion of the whole of Alzheimer's disease.

These imbalances apart, this book represents an interesting source of information for medical students and psychology students about neurological and psychiatric disorders affecting human behaviour.

G Rees

### The dynamic neuron

John Smythies. Published by MIT Press, Cambridge, 2002, pp 150, £39.95. ISBN 0-262-19473-2

The subject of this book, synaptic plasticity, represents one of the most exciting developments in present day molecular neurobiology. No longer is the brain considered to be hardwired, but instead is capable of rapidly responding to a variety of endogenous signals or external environmental factors that bring about complex molecular, physiological, and structural changes affecting synaptic transmission. The recognition of the truly dynamic nature of neuronal physiology is aptly highlighted in the title of the book. The author, John Smythies, has had a long and distinguished career as a neuroscientist with a particular interest in schizophrenia. In this book he has made an excellent synthesis of the enormous complexity of receptor responses and the interplay with the multiple redox reactions occurring at the synapse.

The first chapter is focused on the nature of synaptic plasticity with particular emphasis on the glutamate synapse and associated redox reactions. This provides considerable insight into these interactions and is a valuable literature resource. The book then progresses to more specialised subjects such as endocytosis and exocytosis (chapter two), and to important specialised proteins such as cell adhesion molecules and scaffold proteins (chapter three). The miscellaneous topics covered in chapter four include a discussion of the role dopamine in synaptic plasticity,

but this chapter is disjointed, without a clear thread running through it. In chapter five the author extrapolates from the various reactions covered in the earlier chapters to their relevance in the pathobiology of disease, especially concentrating on schizophrenia and Alzheimer's disease. This chapter provides a fascinating viewpoint undoubtedly reflecting the author's unique perspective. This is followed by a brief final concluding chapter (chapter six).

This is not a textbook, nor a comprehensive review, but it is certainly a very readable insight into the complex molecular interactions occurring in synaptic plasticity and an excellent starting point to help understand a rapidly developing and important area of neuroscience.

J de Bellerocche

### Research and publishing in neurosurgery

Edited by Y Kanpolay. Published by Springer-Verlag Wien, New York, 2002, pp 131, Hardback €76.00. ISBN 3-211-83821

The book was planned to serve as an essential handbook and comprises a collection of articles, by different authors, presented as a training course in Turkey under the auspices of the Research Committee of the EANS. The articles are wide ranging, and there are both philosophical and reflective contributions, as well as focused and detailed papers, as would be expected from such an origin. There is very good broad advice to young researchers regarding aspects of preparing for presentation, research, and publishing. There are articles that can provide a starting point for initiating research in specific areas. When covering particular areas of research and relevant facets surrounding these, some of the articles are generic and others highly specific. In many cases it appears to reflect more an area of research in which the author is involved or experienced, and these are therefore narrow. In others there is a broader perspective and, although covering a specific topic, provide a more substantive platform. The references are detailed and strongly complement the text in most of the articles. The articles are easy to read and the structure and language are of a very good quality.

It would be of value both to neurosurgical trainees and to neurosurgeons, either becoming involved or interested in research and publishing in neurosurgery. It will serve as a very useful reference book in a departmental library. Although not providing full information, as it obviously cannot, it provides a drawing board for development or initiation of research ideas.

J Van Dellen