Intracranial hypertension and giant arachnoid granulations

We read with great interest the article by Arjona et al.1 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 sinus venous flow.

We would like to underline another point of view concerning such a physiological role for AGs. According to Clark,2 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.3 proposed that AGs may act as "Starling resistors" to prevent cortical venous collapse during variations in the intracranial pressure. Krisch4 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.1 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.5 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.6 They concluded that elevated venous sinus pressure is not the primary event in the patients with IIH.

The case studied by Arjona et al.1 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.

References
congratulated on marshalling over 200 contrib-
uting authors. They have succeeded in their objective of producing a very practically oriented approach for clinicians, but 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 repre-
sents 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 Willey & Sons Ltd, 2002, pp 865, £90.00. ISBN 0-471-49819-7

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 comprehen-
sive. 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 perma-
nent amnesia, there are new sections on neuropsychological impairments of both verbal and visual short term memory. There are excellent reviews of the cognitive neuro-
science of confabulation and of false mem-
ories. There is also a new section on the frontal lobes and memory, as well as a contribution on recovery of memory function in neurological disease.

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 suitably 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 mem-
ory, particularly those involved with assess-
ment and management. I only hope the next edition of the book is as good.

J Hodges

Neurological complications of critical illness, 2nd edition

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 event-
tually recovered. The second patient was suffering from 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 a diagnosis and to offer straightforward advice on practical management. This book is an excellent guide to the recognition and management of these conditions, and I would have no hesitation in recommending it as the first book to consult in this topic.

The editor has chosen to divide the book into five sections that reflect the clinical manifestations and diagnostic and treatment algorithms for the problems that affect the nervous system in critical illness. The first section is on the neurophysiological, neuroanatomic, and neuropharmacological aspects of the illness, and the techniques and clinical importance of electroencephalography and evoked potentials. There is a useful section on the use of neuroimaging in the critically ill patient, and a more general section on the interaction of cardiovascular and respiratory systems on the nervous system.

The second section is on the clinical features and outcomes in the critically ill patient. It is divided into acute and chronic syndromes. The acute syndromes are divided into slowly progressive neurological syndromes, rapid progression, and isolated cranial nerve and spinal cord dysfunction. The chronic syndromes are divided into acute transitory subcortical syndromes, subcortical syndromes, and cranial nerve dysfunction.

The final three sections are divided into the psychiatric aspects of critical illness, and the rehabilitation of the critically ill patient. Together, the books represent a major and comprehensive 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.

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 are in very 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. The chapters are well written and appropriate emphasis on the important point that drugs often have effects much longer than might be expected by their known metabo-
lic half-life.

What really sets this book above others dealing with similar topics are the sections dealing with prognosis. 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 chapters 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 Cartlidge

Synesthesia—a union of the senses

Synesthesia occurs when an experience in one sensory modality or in 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 Klüber’s form constants to the role of metaphor in language and perception. If some parts of the book have the air of work ill-advisedly principal of her school—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.

The dynamic neuron

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.

G Rees

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 de Bellerache
Cécile and Oskar Vogt: the visionaries of modern neuroscience

R Pearce

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