
References

Head drop and camptocormia

The article by Umapathi et al in this journal referred to the original use of the term camptocormia by Souques in 1915, though functional bent back was first described by Brodie in 1837. Mlle Rosanoff-Saloff supported Southard's fine collection of shell shock with the description of the first case report of head drop in 1915. The Sandler triad of low self esteem, psychosomatic disorder and camptocormia was first described by Brodie in 1837. Mlle Rosanoff-Saloff supported Southard's fine collection of shell shock with the description of the first case report of head drop in 1915.

Infection and multiple sclerosis

The article by Hawkes and the editorial commentary about the role of infectious agents in multiple sclerosis (MS) examined this question from a new viewpoint based on epidemiological observations. Several infectious agents, most not sexually transmitted, were reported to be associated with MS according to epidemiological data, serology in CSF and blood, or demonstration of pathogens in tissue. A relation with measles virus (MV) has been an early and most consistent finding. More recently, higher prevalence and higher titres of antibodies against human herpesvirus 6 (HHV6), but not other herpesviruses, were shown in MS patients compared to control groups, suggesting different exposure to HHV6 in MS. HHV6, like vaccine strain MV and certain wild type MV, uses the membrane cofactor protein (MCP; CD46) as a receptor for entry into cells. This suggests a possible involvement of CD46 in MS.

The possibility of a particular isoform of MCP predisposing MS patients to infection is unlikely because all isoforms have similar affinity to MV. Increased levels of soluble CD46 have been reported in the serum and cerebrospinal fluid of MS patients, more in those who have HHV6 DNA. One interpretation of these findings involved increased activity of the complement system in MS. However, experimental studies show no influence of inflammatory cytokines on CD46 expression and do not support inflammation...
as a cause of increased CD46. Incorporation of CD46 in the viral envelope, or a possible genetic propensity in MS patients, has also been considered as causes of increased CD46. While its origin in MS is unclear, soluble CD46 might be involved in viral pathogenesis by binding the virus in the endocytic phase and allowing another to attach to CD46 and spread from cell to cell. Both HHV6 and MV are infectious agents encountered in early childhood, and HHV6 can indeed become reactivated a few weeks after primary MV infection. On the other hand, because HHV6 and MV downregulate CD46 expression on the infected cell, they may diminish the entry of each other, delaying the time of infection. Therefore, they might produce increased antibody levels in young adults through delayed infection with, or reactivation of, each other. These suggest increased antibodies against these two viruses in MS may be interrelated.

The question remains whether a cause-effect relation exists between infectious organisms and MS, or whether viruses are just a consequence of the activation of the inflammatory-immune sequence or increased susceptibility of MS patients to infection. Studies of CD46 and other viral receptors seem warranted in MS.

Infection and multiple sclerosis

The paper by C.H. Hawkes (Is multiple sclerosis a sexually transmitted infection?) has been in the news lately. The hypothesis presented in the paper is that there may be a link between HHV6 and MV, which are known to be sexually transmitted, and MS. However, the hypothesis has been met with mixed reactions in the scientific community.

References

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Delirium in old age

Delirium is an extremely important condition for a number of reasons. It is very distressing and frightening for those who experience the symptoms, and descriptions of the effects on the brain as a consequence of high fever have been well described. There is a high mortality associated with the development of delirium, and it is often associated with behavioural disturbances that can be troublesome for carers and attendants. Finally, it presents a unique opportunity to look at the interface between psychiatric symptoms caused by organic disease and functional disorders.

Twelve years ago, the same publishers and two of the current editors produced the first edition on delirium. It was a relatively thin book but set the standards that the current edition continues. Delirium is certainly a niche market, and there appear to be no direct competitors, although text books on old age psychiatry usually contain chapters and notes on delirium. The new edition is greatly expanded and very much up to date.

Every aspect of delirium is included, from the history and conceptual basis of the disorder through epidemiology, neuropsychology, clinical assessment, management, prevention, and, refreshingly, the role of family. This new field is touched upon in the book, and at the front page of the chapter rather than in the list of contents. The interdisciplinarity taken in this book will ensure it has a wide range of readers across “neurosurgery, neurology, orthopaedic surgery, neurophysiology, anaesthesia, interventional radiology, and biomedical engineering”.

This book comprises 17 chapters contributed by 24 authors. It has clearly benefited from most of the chapters being written in a more or less homogenous style and formed into seven parts mainly based on surgical procedures. Motor evoked potentials/neuropsychological base; intraoperative neurophysiology (ION) of the spinal (spinal cord monitoring); ION of peripheral nerves; nerve roots and plexuses; ION of cranial nerve and brainstem; ION of supratentorial procedures; ION during stereotactic neurosurgery for movement disorders; and ION and anaesthesiology management. Most of the chapters cover the background of methodological description of the surgical procedure, and the related neurological procedure, personal experience, and case reports, which gives a balanced theoretical and practical view on the topic of each chapter. One interesting feature of this book is that it is accompanied by a CD that certainly enhances its value. Cross references are given at the end of the corresponding chapter rather than in the list of contents in the book, and at the front page of the display.

In conclusion, it is an authoritative review of intraoperative neurophysiology much weighted on the motor system for a wide range of surgical procedures. Perhaps, in its present form, those hoping for a more systematical (informed) overview of intraoperative neurophysiology of the sensory system may feel slightly disappointed.

BOOK REVIEWS

Neurophysiology in neurosurgery. A modern intraoperative approach


This book comprises 17 chapters contributed by 24 authors. It has clearly benefited from most of the chapters being written in a more or less homogenous style and formed into seven parts mainly based on surgical procedures. Motor evoked potentials/neuropsychological base; intraoperative neurophysiology (ION) of the spinal (spinal cord monitoring); ION of peripheral nerves, nerve roots and plexuses; ION of cranial nerve and brainstem; ION of supratentorial procedures; ION during stereotactic neurosurgery for movement disorders; and ION and anaesthesiology management. Most of the chapters cover the background of methodological description of the surgical procedure, and the related neurological procedure, personal experience, and case reports, which gives a balanced theoretical and practical view on the topic of each chapter. One interesting feature of this book is that it is accompanied by a CD that certainly enhances its value. One interesting feature of this book is that it is accompanied by a CD that certainly enhances its value. Cross references are given at the end of the corresponding chapter rather than in the list of contents in the book, and at the front page of the display.

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Clinical neurophysiology of the vestibular system, 3rd edition


The first edition of Clinical neurophysiology of the vestibular system, published in 1979, had a significance beyond its content: it affirmed that neurology had a stake in the vestibular system. Here was a neurologist (Baloh) writing with an otolaryngologist (Honrubia) about perfusion, enzymes, audiograms, and above all the vestibulo-ocular reflex—the "VOR". The VOR is no ordinary reflex; one can measure accurately both its input and its output and come up with a transfer function for gain—a new concept then for neurology. We have learnt a lot more about measurement of vestibular function and about disorders of the vestibular system since 1979. The 2nd edition, published in 1990, and now the third edition, incorporate these advances.

And what a terrific book it still is: based on concepts, packed with facts, lucidly written, and rigorously referenced. Its structure is logical by its language is clear, so that it is not only easy to search and browse but a pleasure to read from cover to cover. And it is comprehensive—no vestibular stone is left unturned.

There are four main parts, dealing in turn with: the structure and function of the vestibular system (four chapters); the clinical and laboratory evaluation of the dizzy patient (four chapters); specific, easily-memorable symptoms, and the vestibular system (10 chapters); and the treatment of vertigo and vestibular loss (two, yes only two, chapters—but then that's neurology for you).

It's impossible to single out any one chapter, they are all outstanding. For example, I particularly liked the new material in chapter one on the phylogeny of the vestibular system. Now one would have to admit that familiarity with the otocyst of the sea anemone is not a lot of use in the consulting room, but this section is so clearly written and matter so interestingly explained that one happily dispenses with such utilitarian demands.

The great strength of the book and what has made it such a classic, is that although it is based on physiology, full comprehension of physiology is not a prerequisite for retrieving useful information from the disease-based chapters. Although the structure is there, one can put this aside and simply delve. The chapters on the three most common vestibular diseases, benign positional vertigo, migraine, and Meniere's diseases, are absolute gems. Each could be published as a self-contained review in its own right.

The book is an elegant conceptual and factual account of the vestibular system, its disorders and diseases, rather than a self-help or how I do it manual. Some readers might miss not having, a "frequently asked clinical questions" section, or at least a "frequently encountered clinical pitfalls" section, but then no one can have it all. Anyone who sees dizzy patients needs one dizzy book on the desk. This is the one I have on mine.

G M Halmagyi

Role of proteases in the pathophysiology of neurodegenerative diseases


This volume would be an extremely useful addition to the bookshelf of anybody with an active interest in the biochemical and pathological processes that underlie some of the more common neurological diseases. In the past the role of proteolysis in these disorders has been largely neglected because it was assumed that it represented a general non-specific metabolic process. In terms of attracting research interest the field also suffered from the confusion in the literature concerning the naming of these enzymes and the fact that the same enzyme might have many different names. However, as the editors point out in their preface, this is no longer the case and they have therefore bring together an impressive array of current research on the involvement of proteases in a wide variety of disorders. From what individually might have been regarded as rather disparate studies, one can now start to see common themes not least of which is the potential therapeutic value of targeting specific proteases and the development of specific inhibitors.

If, like me, you don't have specialist knowledge of this area I would recommend going straight to the last chapter on the mammalian proteasine genes. Here you will find a clearly laid out summary of the classification and characteristics of the four main groups of proteases (serine, cysteine, aspartic, and metallo-proteases). I also found the chapter on the ubiquitin/proteasome system and the normal physiological breakdown of proteins particularly informative. Having read these two chapters you then have a wide choice of disorders and proteases to choose from. Perhaps the most widely discussed is Alzheimer's disease, undoubtedly because of the huge advances that have been made in the understanding of the biochemical processes underlying this disease over the past 15 years. Papain-like cysteine proteases (cathepsins), caspases, calpains, and a novel metallo-endopeptidase (EC 3.4.24.15) all appear to have some role in the pathology of Alzheimer's disease and many, therefore, be potential targets for drug development. There is also a growing body of evidence suggesting that calpains, which are calcium-activated neutral proteases, are central to the development of pathology and so these enzymes in particular are key targets for current drug research company.

Apart from the interest in Alzheimer's disease, there are other chapters covering the role of matrix metallo-proteinases and calpain in the demyelination of multiple sclerosis and the key role of calpain in the pathology of traumatic brain and spinal cord injury. Further chapters describe the loss of calcium homeostasis and the subsequent pathological activation of calpain, resulting in the breakdown of key structural proteins in some neuromuscular disorders. In summary, this book has something for everyone in an area of research that holds huge promise for the future in terms of developing useful therapies for treating neurodegenerative disorders.

S Gentleman