BOOK REVIEWS

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Clinical Neuroanesthesia. Edited by Roy F. Cucchiara and John D. Michenfelder. New York, Churchill-Livingstone, Inc., 1990. Pages: 555. Price: $79.00.

My personal library contains eight textbooks on neuroanesthesia, all published since 1980; several are now entering their second editions. During the past decade, I frequently have been frustrated by the various failings of these works—the seemingly inevitable repetitions and uneven writing styles encountered in multiauthored texts; the provincial bias of how things are done at "our institution"; the occasional editor with a literary axe to grind; the chapter contributor who proves to be less than knowledgeable about his or her assigned topic. I am delighted to report that these failings are virtually nonexistent in **Clinical Neuroanesthesia.** Although all the contributors are present or previous members of the Mayo Clinic professional staff, the "cook book" approach is assiduously avoided. Indeed, since most of the contributors are nationally recognized experts on the topics they discuss, the various chapters maintain a remarkably scholarly ambience, with reasonably unbiased and thoughtful presentation of the most controversial aspects of contemporary neuroanesthesia practice.

The first half of the book, a section entitled "Scientific Foundation," contains chapters on cerebral blood flow and metabolism, cerebrospinal fluid dynamics, intracranial pressure, electrophysiologic neurologic monitoring, and cerebral protection. In many respects, this material is a recounting of Dr. Michenfelder's recent monograph, *Anesthesia and the Brain,* albeit as seen through the eyes of several of his proteges and presented with a somewhat stronger clinical emphasis. These chapters establish the foundation upon which much of the next section, "Clinical Applications," is based. One of the most impressive aspects of this text is the way in which these first five chapters build upon each other. All are delightfully understandable, abundantly referenced, and remarkably up to date. Leslie Milde's chapter on "Cerebral Protection" completes the first section and is an obvious high point of the book. It is an erudite discussion of normal neuronal structure and function, the processes of neuronal injury, and the experimental and clinical application of neural protective maneuvers and agents. Furthermore, it is the ideal point to make the transition from discussion of the laboratory to that of the clinic.

The second section, "Clinical Applications" contains 11 chapters on clinical topics such as cerebrovascular diseases, tumor and epilepsy surgery, stereotaxic operations, neurodiagnostic procedures, surgery of the vertebral column and spinal cord, neuromuscular disorders and muscle relaxants, neurointensive care, acute and chronic pain, and coma and brain death. Several surgeons contribute to these chapters, such that the reader can appreciate both anesthetic and surgical considerations when approaching a specific patient care problem. Numerous tables, diagrams and photographs augment the text, and each of the chapters is abundantly referenced.

A few criticisms are appropriate here. The chapter on stereotaxic surgery is much too long (40 pages) and contains far more technical discussion than even a full-time neuroanesthetist would care to absorb. The chapter on neurointensive care reiterates much of the information previously presented in the "Scientific Foundation" section. I believe the absence of a chapter on head injury is a major deficiency. Although William Lanier's excellent chapter "Intracranial Pressure" does include this topic, I would have preferred to see a chapter dedicated to the problems of craniocervical injury or the "full head and full stomach," rather than having to find them in the "Scientific Foundation" section. The approach to tracheal intubation in the presence of an unstable cervical spine is outlined in the chapter "Vertebral Column and Spinal Cord Surgery," but it is more a listing of possibilities (blind, fiberoptic guidance or direct laryngoscopy) than a discussion of risks *versus* benefits. Cricothyrotomy is not considered. Topical anesthesia of the trachea is recommended, but there is no suggestion on how to deliver it or how to prevent coughing. Superior laryngeal nerve block and endotracheal tube placement over a retrograde catheter through the cricothyroid membrane are not mentioned.

Given the encyclopedic nature of this book, these criticisms are small indeed. **Clinical Neuroanesthesia** is a text that should be in the library of every academic department and every anesthesiologist who cares for neurosurgical patients. The references and topics covered are remarkably contemporary right now, and I predict that the general principles presented will be accepted as truths for a long time to come.

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Opioid Analgesia: Recent Advances in Systemic Administration. Volume 14: **Advances in Pain Research and Therapy.** Edited by Constantino Benedetti, C. Richard Chapman, and Giampiero Biron. New York, Raven Press, 1990. Pages: 460. Price: $98.00.

Opioid Analgesia: Recent Advances in Systemic Administration is a compendium of 27 articles presented at a satellite symposium of the V World Congress on Pain, held in honor of Dr. John J. Bonica. The articles are organized into two broad sections—basic science and clinical applications.

The basic science section is divided into basic mechanisms and pharmacokinetics. The basic mechanisms section contains two articles dealing with opioid analogue development, one on receptor specificity and one on *in vitro* and *in vivo* pharmacology. Both are in-depth and well-referenced. The next two articles present data supporting novel modes of central nervous system opioid–receptor interaction. The first, by Giardino, develops the concept that the lines of opioid neural transmission are subject to change modulated by multiple nonopioid factors, much the same as has been shown for many other neurotransmitter systems. The second, by Zoli, proposes an even more novel mode of transmission, referred to by the authors as volume transmission, whereby the afferent transmitter released without proximate receptors diffuses in the interstitial milieu to affect distant receptors. Finally, Casey presents arguments for a biochemical basis for the development of tolerance and dependence. This is a well-referenced article which also provides insight into the role that signal transduction systems play in producing the physiologic effects of opioids.

The next four articles of the basic science section detail various aspects of the pharmacokinetics of intravenously administered narcotics. The first, by Mather and Stanski, emphasizes the effects of sampling, protein binding, and drug clearance on the apparent effects of opioids. The article by Inturussi details the effects of various pathophysiologic processes on the metabolism and clearance of metabolic products of meperidine as well as abnormalities in the clearance of normeperidine that result in the apparent side effects of meperidine. He then reviews the effects of several other drugs and pathophysiologic processes on other narcotics and their metabolites. The final two articles deal with pharmacokinetic modeling and its clinical application, primarily in patients receiving general anesthesia.

The second section, on clinical applications, is also divided into subsections: these are "Routes of Administration," "Controlled Release

of Morphine," "Patient-Controlled Analgesia," and finally "Clinical Value of Systemic Opioids." The subsection on routes of administration contains articles on oral, sublingual, transdermal, transnasal, and rectal administration of opioids. Each article describes the rationale, method, and clinical experience with each route. Many of the routes certainly will be of limited use, but each may be helpful in complicated situations, and are well worth knowing. Oral morphine receives a great deal of attention, and rightly so; it remains the most practical and widely used agent in chronic pain relief. The three articles on controlled-release formulations, in particular, provide an excellent review of the effectiveness of these formulations and serve as a guide for clinical management. Patient-controlled analgesia appropriately receives a great deal of attention, since it is becoming the standard of postoperative care for patients.

The first article in this section, by Leahmann *et al.*, reviews clinical experience and potential uses of patient-controlled analgesia in pain research. Each of these sections is concise and well-referenced, serving as a useful starting point for anyone interested in either using or studying this particular mode of pain relief. The remaining articles describe various authors' experiences with this mode of pain relief in various clinical settings. The remaining section, on the clinical value of systemic opioids, includes reviews of opioids and postischemic encephalopathy, physiologic effects of and the rationale for treating acute pain, and the clinical and logistical management of cancer pain.

This volume is not intended to be a comprehensive review of opioid analgesia. It does, however, present innovative and stimulating concepts in the rapidly evolving area of opioid analgesia. It is probably of most use to researchers and clinicians who are already familiar with opioid analgesia. The basic science section, although detailed and somewhat tedious, develops concepts that may prove essential to clinicians wishing to apply basic science to clinical practice and clinical research. The clinical applications section provides readily useful information to practitioners currently prescribing opioids, as well as a preview of potentially new areas of development in systemic opioid analgesia.

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Fiberoptic Airway Endoscopy in Anesthesia and Critical Care. By Andranik Ovassapian. New York, Raven Press, 1990. Pages: 129. Price: $105.00.

This monograph summarizes the work of Dr. Andranik Ovassapian, a leader in the growing practice and teaching of fiberoptic airway endoscopy in anesthesia, and includes contributions by five colleagues from Northwestern University. It is so richly illustrated (I count 146 illustrations, many with color photographs of live airway anatomy, pathology, and instrumentation, and at least 50 tables) that it blurs the distinction between atlas and monograph. The slim, folio-sized volume is divided into 11 chapters, averaging 15 pages in length, that are well referenced both with basic historical sources (*i.e.*, pre-Medline) and with reports as recent as early 1989. The style and format of presentation are consistent throughout the monograph. Dr. Ovassapian coauthored 3 of the 11 chapters and wrote 7 himself. Each is introduced by a brief outline of topics referenced by page number for quick access. Four are concluded by succinct summary outlines that bring a body of useful technical information together in a concise format.

The text offers a practical course in fiberoptic airway management. The chapter order is logical: the sequence builds from basic information to illustrative case reports that demonstrate the utility of fiberoptic techniques in clinical practice. Basic working principles and a brief history of flexible fiberoptic bronchoscopes are presented in a 15-page chapter at the outset that concludes with a useful list of do's and don'ts. A nine-page chapter devoted to anatomy presents a digestible combination of review information together with good color photos of the airway as seen *via* an adult bronchoscope from nasopharynx to pulmonary segmental orifices. The third chapter was contributed by a radiologist and presents the most succinct, current radiographic imaging of the airway I have seen to date. Views include computed tomography and magnetic resonance imaging cuts. Several problem-oriented case presentations of typical airway pathology present a radiologic perspective. There are 33 x-rays or illustrations in this 30-page chapter. This chapter alone makes the book a worthwhile purchase. The fourth chapter briefly presents clinically relevant techniques for airway anesthesia (12 pages, 10 illustrations, and 59 references) and concludes with an outline of ways to avoid toxic reactions.

For most readers, the core of the monograph will be found in the fifth through tenth chapters. These include techniques for fiberoptic intubation (23 pages, 19 illustrations, and 64 references); endobronchial intubation and/or blockade (25 pages, 17 illustrations, and 81 references); fiberoptic manipulations useful in critical care practice, including fiberoptic tube change and nasogastric tube passage; approaches to the difficult airway (well-referenced, with 77 citations); management of the difficult intubation (14 pages and 112 references); and ten well-selected case reports (12 pages and 22 illustrations). These case reports are so well-illustrated and well–thought-out that I wished for more.

The volume concludes with a short chapter that discusses the teaching and learning of fiberoptic techniques and that outlines the stages and objectives of the long-running Northwestern University endoscopy course. This would assist any anesthesia department in setting up a fiberoptic credentialing basis for active staff and help interested teaching faculty involved in resident education or continuing medical education (CME) programs. The four-page index is brief and topical; however, to this reader, it seems more likely that quick reference would easily be expedited by looking at the outline at the beginning of the appropriate chapter.

It is customary for reviewers to note deficiencies. I found only one misnumbered reference. Only a very few of the many illustrations and tables seemed remote from the accompanying text, but each is so well-captioned that it makes complete sense. As one would expect from an anesthesiologist whose practice is largely adult, there is a dearth of pediatric case material and experience presented here, although the basics can be found. A more interesting criticism that some might offer is that the Northwestern group and Dr. Ovassapian, like me, recommend awake airway instrumentation for the beginner. An opposing school of thought is that the practitioner should first learn under the most difficult of circumstances under general anesthesia without an actively maintained airway so as to be better prepared for difficult scenarios or failed intubation. To his credit, Dr. Ovassapian has taught, documented, and collected clinical data of fiberoptic intubation under anesthesia and has contributed some procedural and technical innovations. This is well reported in the monograph despite an understandable bias towards awake, planned fiberoptic intubation.

As an advocate of fiberoptic techniques for airway management, I believe that this monograph offers value for the dollar. The production quality is excellent, and the language is straightforward and readable. Step-by-step illustrations of each technique and the well-written coverage of each topic make it much more than an expanded review. Additionally, data derived from the Northwestern University teaching and clinical experience are compared with the growing literature on each topic. As an atlas alone, the volume would be worth the cost—less than 50 cents per illustration.

This is the second published monograph geared towards the practicing anesthesiologist. It comes with a more complete data base—the result of 7 more years of experience—and contrasts favorably by including more illustrations from living material and by offering better-referenced, more comprehensive detail of procedures. Fiberoptic