BOOK REVIEWS

Edward Lowenstein, M.D., Editor

The Neuromuscular Junction. BY R. A. BRUMBACK, J. GERST. Futura Publishing Company, Mt. Kisco, 1984. Pages: 354. Price: $39.00.

Much of our basic knowledge of drug development, drug interaction at the neuromuscular junction (NMJ), and patient care of many diseases affecting the neuromuscular apparatus is due to advanced research in structural morphology, neurophysiology, neurochemistry, immunology, and pharmacology of the NMJ. This book, which is a multiauthored contribution consisting of seven chapters, reviews some of these developments.

The first chapter reviews the historic development of the concepts of neuromuscular transmission. The structure and morphogenesis of the NMJ are illustrated in the second chapter with impressive light and electron microscope studies. Physiology and molecular basis of the function of NMJ, the postsynaptic receptor, and the presynaptic transmitter release system are discussed chapter 3. Chapter 4 clearly addresses the clinical pharmacology of the NMJ: sites of action of drugs (postjunctional and/or prejunctional) and the effects of pharmacologic agents on the membrane ion channels and other parts of the NMJ. Disturbances in muscle membrane, synapse, and nerve terminal following injury to the motor nerve are discussed in chapter 5. Chapter 6 is devoted to the immunopathologic disturbance, evaluation, and treatment of patients afflicted with myasthenia gravis. The last chapter provides the reader with a summary of other pathologic neuromuscular disorders and drug interactions at the NMJ.

On the whole, the volume presents a useful compilation of some of the advances reported in recent years on the neuromuscular junction. It provides a rich source of information and literature for those interested in the field of neuromuscular function and, in particular, in pathologic problems involving the neuromuscular junction.

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Pediatric Anesthesia. EDITED BY GEORGE A. GREGORY. New York, Churchill Livingstone, 1983. Pages: 1,020. Price: $98.00.

The goals of Dr. Gregory for this textbook, as stated in the Preface, are to provide in one place the information currently needed to effect a physiologic and pharmacologic approach to anesthesia for infants and children, including the clinical information and technical details necessary to care for the patient. This most ambitious purpose, for the most part, has been achieved by the Editor and his collaborators.

The text consists of two volumes, the first devoted primarily to basic sciences as they apply to pediatric anesthesia (and to neonatal and pediatric critical care as well). The second volume deals with special techniques and settings (outpatient anesthesia and intensive care), and with anesthesia for operative procedures grouped by anatomic site or by subspecialty. This organizational framework permits much more depth in the basic unique strengths of this book, yet results in the redundancy and lack of integration that constitutes one of the several deficiencies that detract from the book's overall excellence.

With only two exceptions, the authors would be recognized by most of us as authorities on the topics they address. Eight authors, including the Editor, are directors of pediatric anesthesia in major children's hospitals or university hospital medical centers and have 10 or more years postresidency experience. Thus, the text speaks with authority and the voice of practical experience in most chapters. Style and clarity vary, as seems inevitable in multiauthored books, but the majority of chapters appear to be clear and appropriately focused, and several are outstanding. A high level of scholarship with an abundance of references to current literature as well as older landmark articles characterizes many chapters, whereas a few chapters, such as the opening one on Outcome of Pediatric Anesthesia and the sections on deliberate hypotension and hypothermia in Special Techniques were disappointing in this regard. The latter topics, however, were well covered in other chapters.

In my opinion, several problems should be addressed in the second edition of this book, which I assume will be forthcoming in the next few years. The most vexing of these is the frequent lack of integration of information and cross-referencing between chapters dealing with overlapping topics. For example, fluid balance and intravenous fluid administration are discussed extensively (12 pages) in the chapter Developmental Metabolism and Nutrition, again in some detail in The Renal System, and once more in Maintenance of Anesthesia, yet no cross-references to the other chapters occur. Similar redundancy occurs with several other chapters and subjects, such as the lists, tables, and text citations of age-normal cardiopulmonary variables. The reader would benefit considerably from a chapter dedicated to fluid balance and intravenous fluid therapy, which would serve as the basis for discussion of specific fluid management issues and could be cross-referenced in other chapters. Likewise, inclusion of tables of age-normal physiologic variables, usual recommended drug dosages, and other pertinent data in an appendix could provide a quick reference source, as well as norms to which the various collaborating authors could refer.

Another matter of concern in some basic science chapters is the occasional lack of focus on the relationship of the material to pediatric anesthesia. This seems particularly true in the otherwise very informative and well-written chapters on The Central Nervous System and Developmental Metabolism and Nutrition. In the former chapter no attempt has been made to relate 38 pages of material to the practice of pediatric anesthesia; in the latter chapter those matters relevant to the perioperative care of infants and children, such as the excellent summary of glucose homeostasis in the newborn,

receive no special emphasis over sections of only remote value to anesthesiologists. In the 59-page chapter Temperature Regulation, only half a page has been devoted to heat exchange during anesthesia. Although the practical aspects of this subject are dealt with in other chapters, it does not receive the scholarly exposition that such a universally applicable topic deserves.

Certain other topics of considerable importance in pediatric anesthesia have been omitted or given only cursory consideration. Cardiopulmonary resuscitation receives only four pages of discussion and these are in the last chapter of the book. The chapters on Design of the Operating Room, Anesthesia Equipment of Pediatrics, and Monitoring During Surgery make no mention of the equipment necessary for effective intraoperative resuscitation. The chapter on equipment also fails to describe the wide variety of modern masks, oropharyngeal airways, and laryngoscope blades available for pediatric use. No discussion of anesthesia or postanesthetic care of children with a cleft palate, the most common craniofacial anomaly we encounter, has been included in any chapter. Indeed, a chapter devoted to the anesthetic and postanesthetic management of the major craniofacial anomalies would seem appropriate for this type of comprehensive textbook.

The chapter entitled Pharmacology fails to deal at all with anticholinergic drugs or cardiovascular agents. This is left to the authors of other chapters to accomplish, which they do with varying degrees of scholarship and depth. It would be advantageous to have a more extensive discussion of pediatric pharmacology, including drug toxicity, in one place to which the other authors and the reader could refer.

Neither the otherwise clear and practical chapter on Anesthesia for Premature Infants nor that on Induction of Anesthesia emphasizes the hazards of anesthesia induction in preterm infants with gastroesophageal reflux, although reflux itself receives appropriate discussion in the chapter on metabolism. Intussusception, the most common cause of abdominal emergencies between 3 months and 3 years of age, receives no mention anywhere in the book. Except for one sentence about its effect on metabolic rate, pheochromocytoma likewise has been totally neglected. No where is there a description of the characteristics of the infant at risk of sudden infant death syndrome (SIDS) and the possible relevance to anesthesia and postanesthetic care of infants with a history of premature birth. However, SIDS does receive brief mention in three chapters.

One annoying deficiency that the publisher should strive to correct in the next edition is the frequent separation by a page or more of a table or figure from the text that cites that item. For example, in the chapter on metabolism, up to four pages of separation occur; also, two figures in that chapter appear to be inadvertently repeated (figs. 6 and 7 and 6–8 are identical to figs. 6–11 and 6–12). To the publisher's credit, the typographic errors are few; the paper, binding, and clarity of illustrations excellent; and the index complete and accurate.

The above negative criticisms should be kept in perspective. Dr. Gregory and his co-authors deserve our congratulations and appreciation for completing a Herculean task in a scholarly, lucid, and practical manner. I have been practicing anesthesia and critical care in an academic children's hospital for more than 20 years and found that I learned a great deal from this book. I recommend it as obligatory reading for residents in anesthesiology and as a most valuable reference for experienced anesthesiologists, including those who specialize in pediatric anesthesia. I look forward with keen anticipation to the next edition.

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Manual of Cardiac Anesthesia. EDITED BY STEPHEN J. THOMAS. New York, Churchill Livingstone, 1984. Pages: 469. Price: $27.50.

The 469-page paperback *Manual of Cardiac Anesthesia* contains 17 chapters. It is reasonably priced and printed on heavy bond in an easy-to-read typeface.

Dr. Thomas very poignantly asks in the preface "Why another book about cardiac anesthesia?" Upon first glance, I would ask the same question. On closer perusal, however, I realize that this is a unique book on cardiac anesthesia. This manual is valuable to the practicing anesthesiologist, the academic anesthesiologist, and the anesthesia resident.

Unlike other books on cardiac anesthesia, this is an accessible reference to succinctly described topics. The book also emphasizes pathophysiologic profiles of a wide variety of cardiac lesions, which is of importance to the cardiac and noncardiac anesthesiologist alike. This manual allows ready access to information, a distinct advantage to the practicing anesthesiologist. To the academic anesthesiologist, it provides succinct presentations and summaries of subjects that can be well adapted to a teaching format. To the anesthesia resident, it presents a basic overview that can be absorbed in a one-month rotation. Since this book is principally a manual and does not describe all related topics in complete detail, it should be used in conjunction with more detailed texts on cardiac anesthesiology and classic cardiology texts.

The contributors are physicians from a variety of prestigious academic and private medical institutions, endowing the text with the advantage of several points of view. With such diversity, it has the potential disadvantage of repetition, although I was pleased to find that this was not a frequent occurrence.

Most of the relevant subject areas on patients with cardiac disease are covered. For the general anesthesiologist, this is sufficiently complete coverage. However, for the cardiac anesthesiologist, several subjects are not discussed, such as cardiac transplants and heart assist devices. Of particular acclaim are the chapters on pharmacology, preoperative assessment of the adult, coronary artery disease, valvular heart disease, and regulation of hemostasis. These chapters are thorough, well written, easily comprehended, and clinically pertinent. Generally, the remaining chapters are also well written. These are sections of these chapters, however, that I think require improved organization and revision, which a second edition of the manual could easily accomplish.

Overall, I recommend this manual as a complement to more complete texts in anesthesiology and cardiology.

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