BOOK REVIEWS

Edward Lowenstein, M.D., Editor

Respiratory Failure in the Child. (Clinics in Critical Care Medicine, Vol. 3) Edited by GEORGE A. GREGORY. New York, Churchill Livingstone, 1981. Pages: 205. Price: $32.50.

When clinical experts in pediatric intensive care from North America contribute to a volume, anesthesiologists, pediatricians, and intensivists should take notice and advantage of the effort. This book is a compilation of articles on the diagnosis and treatment of respiratory failure in children who are beyond the first month of age. Included in the ten topics are the important treatment modalities (intubation, assisted ventilation and monitoring) as well as discussions of several specific disease processes.

Because seventeen writers are involved, a certain unevenness of style is expected; however, all the sections are perspicuous and enjoyable. Outstanding presentations are made by Drs. Lister and Taher on the "Management of Respiratory Failure of Cardiac Origin," by Drs. Downes and Heiser on "Status Asthmaticus in Children," and by Dr. Dobrin on "Perspectives on the Management of the Child with Aspiration and Pneumonia." An excellent list of references following each article permits access to more detailed material while it keeps the text compact by reducing digressive material to a minimum.

This is a handy review for anyone who has severely ill children in his charge on a daily basis. It is strongly recommended for residents and for those who only periodically encounter children with respiratory failure.

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Monitoring of Vital Parameters During Extracorporeal Circulation. Edited by H. P. KIMMICH. Basel, Switzerland, Basler Druck-Und Verlagsanstalt, 1981. Pages: 318. Price: $113.25.

In March 1981, the International Conference on Monitoring of Blood Gases, Blood Ion Concentrations and Respiratory Gas Exchange in View of Its Application During Extracorporeal Perfusion was held in Nijmegen, The Netherlands. This volume is a collection of 37 papers presented at this meeting that promises "an exceptionally thorough critique of new monitoring methods," "a valuable information source for anesthesiologists, heart surgeons, and medical and biological engineers and physiologists." The monographs are divided into five sections. These headings are: Continuous Invasive Monitoring of Pa_{O_2}, Monitoring of Blood Gases in Blood and Tissue, Monitoring of Blood Ion Concentrations, Noninvasive Monitoring of Blood Gases, and On-Line Monitoring of Respiratory Gas Exchange. Four of these groups of articles are preceded by an introduction and overview. Most articles are in the form of expanded abstracts, reviews, or descriptions of the technology in the area. Many of the technical papers are sufficiently complex to leave the uninitiated, clinically oriented physician wishing that night courses in biomedical engineering were available at the local Junior College. Surprisingly, only five of 37 papers involve animals or patients actually undergoing cardiopulmonary bypass. The remainder of the papers leave the reader wondering how they could be included in a book of this title. The majority are *in vitro* or animal studies that regretably fall short of placing "major emphasis . . . on methods of clinical value." Indeed, clinical value or benefit is now shown for most of the techniques described. The form and content of most monographs would preclude publication in any major journal. The volume might be valuable to those with a research involvement in on-line measurements of P_{O_2} and tissue oxygenation. To the practicing cardiac anesthetist, it would be of little interest.

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Transcutaneous P_{O_2}. Edited by RENATE HUCH, ALBERT HUCH, AND DIETRICH W. LÜBBERS. New York, Thieme-Stratton Inc. 1981. Pages: 170. Price: $20.00.

This book presents a comprehensive discussion of the theory, principles, techniques, and applications of transcutaneous oxygen pressure (TcP_{O_2}) measurements (or more appropriately cutaneous oxygen tension). The book is organized into four major sections which begin with a historical perspective of the development of transcutaneous oxygen measurement. This is followed by an in-depth theoretical discussion including a review of the pertinent anatomic and physiologic factors of the skin which influence the transport and exchange of both oxygen and heat. In addition to these considerations, an attempt is made to give insight into the meaning of TcP_{O_2} and variables effecting measurement. In the section emphasizing principles and techniques, the authors use the electrode (a Clark-type electrode) they developed to discuss the basic principles of electrode design. The discussion includes a description of the electronics, construction of the electrode, and the significant effects of membrane materials, temperature, pressure, and electrode characteristics upon function and performance. A limited discussion of other TcP_{O_2} analyzers commercially available in Europe is also given. Reference is made to some American systems. The fourth and final section presents a summary of clinical and physiologic applications.

The book is very concise. As a result of this laconic style, some portions are difficult to comprehend. The review of the anatomy and physiology of the skin circulation and heat transfer is thorough and reasonably well-written. Likewise, the chapters discussing the interfering effects of temperature, pressure, and circulation are succinct. Unfortunately, the equations and theory presented in the theoretical section require significant time for the reader to fully comprehend. The development and derivations of several equations are confusing.

With the exception of the application section, this reviewer feels the book is too concise and difficult for the novice in the field to grasp the concepts and fine points of the scientific and mathematical material presented. However, the book will satisfy the need for a quick reference text by individuals with some experience and understanding of transcutaneous P_{O_2} measurement.

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Management of Medical Problems in Surgical Patients. MARK E. MOLITCH. Philadelphia, F. A. Davis Company, Pages: 795. Price: $40.00

Resembling the search for the "Rosetta Stone," anesthesiologists have long sought a book to help analyze the medical aspects of surgical disease in a manner which clarifies anesthetic risk. Molitch's book is a diversified multi-authored work which pulls together an impressive amount of knowledge in a superbly organized form. It starts with a fascinating discussion of decision analysis theory that is revealing and provocative, although a little mathematically complex for many practitioners. The theoretical infrastructure that fuels daily "reflex" decision making is described in a stimulating manner.

The sections on fluids, acid-base, renal failure, cardiology, and respiratory disease are aimed at problems seen by anesthesiologists, and carefully distinguish the classical medical approach from the specific needs of the surgical patient. Several chapters analyze subjects often missed in books designed specifically for anesthesiologists but nonetheless are important to us for the total care of the surgical patient. Subtly immersed in the chapters about allergy, rheumatology, dermatology, and nutrition are not only items helpful to daily anesthetic practice, but some basic "nuggets" of medical knowledge of benefit to all busy practitioners scrambling for sophisticated and broadly applicable continuing medical education.

It is easy to attribute outmoded references to cyclopropane, ether, and methoxyflurane to the fact that the authors are internists, but this does not detract from the success of the book in describing the medical problems of the surgical patient in a form that is appealing to anesthesiologists who desire to take part in the organized multi-disciplinary care of complex surgical problems.

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Pharmacology of Neuromuscular Function. BY W. C. BOWMAN. Baltimore, University Park Press, 1980. Pages: 186. Price: $19.75. (hard-cover).

Modern balanced anesthesia techniques owe a large measure of their success to the rational use of muscle relaxants. Professor Bowman's monograph offers the anesthesiologist a concise view of current developments in neuromuscular physiology and pharmacology. The latter include the "new generation" of synthetic agents that possess the desirable safety attribute of a wide separation of dose-response curves for neuromuscular (nicotinic) and cardiovascular (muscarinic) effects. (Another worthy example of the synthetic fruits born of modern manipulative chemistry surprisingly not mentioned by Professor Bowman, is pipecurium bromide, a long-acting member of the new order.)

The final chapter (chapter 5), "Muscle Contraction—Drugs Affecting Muscle Contractility," is disappointingly brief and suffers by comparison with the original chapter upon which this monograph presumably is based (Chapter 17 in *Textbook of Pharmacology*, by Bowman and Rand, 1980, Blackwell Scientific Foundations, Oxford). The latter incidently could provide excellent supplementary reading to the present text, despite considerable overlap of subject matter.

This book is well-printed and neatly bound in an attractively designed hard-cover. Typographical errors thankfully, are infrequent (by modern standards), but referals to figures 3–10b and 3–11 on pages 87 and 93 of the text are incorrect and should read figures 3–8b and 3–9, respectively. More liberal use of some of the superb illustrations offered in the original chapter referred to earlier would have been worthwhile. The juxtaposition of isoflurane to Forane® on page 82 could confuse the uninitiated, and represents the only departure by the author from the use of generic rather than trade names of drugs, a practice worthy of universal application.

More than forty pages (pp 134–180) of print present more than 800 references, offering an excellent introduction to the literature on this important subject. Professor Bowman's personal expert contribution to the field is reflected in the 27 references that bear his name as first author!

In summary, overall the book is a pleasing and readable monograph covering current concepts in a rapidly developing subject. The author has achieved his "hope and intent that the book will meet the needs of anesthesiologist and nurse anesthetists." The book should in addition, prove invaluable to students studying for Fellowship or Board examinations, and be considered recommended reading by all anesthesiologists, the majority of whom administer muscle relaxants daily, as an exercise in continuing medical education.

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