REVIEWS OF EDUCATIONAL MATERIAL

James C. Eisenach, M.D., Editor

Physiologic and Pharmacologic Bases in Anesthesiology.

edited by Vincent J. Collins. Baltimore, Williams and Wilkins, 1996. Pages: 952. Price: $89.00.

Peter K. Zahn, M.D.
Timothy J. Brennan M.D., Ph.D.
Department of Anesthesia
The University of Iowa
1510 Steindler Building
Iowa City, Iowa 52242-1009

Physiologic and Pharmacologic Bases in Anesthesiology is a textbook of 46 chapters written by a multi author team comprised largely of anesthesiologists. The strengths of the book are respiratory and cardiovascular physiology; physiology of other systems is added. A large pharmacology section on drugs used in anesthesia emphasizes sedative-hypnotic agents and volatile anesthetics. Four supplemental chapters complete the text. The book contains many detailed tables and diagrams useful for reference; black and white pictures and drawings supplement the text.

The first five chapters detailing respiratory physiology are well written. Equations included in this part help the reader understand principles of pulmonary medicine; yet, these calculations are not used to excess, as in some texts on respiratory physiology. The tables are detailed and serve as a good resource for measures of pulmonary function and normal laboratory values. The discussion on central control of respiration is quite thorough; however, a chapter on respiratory pathophysiology and perioperative management of bronchospasm, chronic obstructive pulmonary disease, and restrictive lung disease is missing.

There is a large series of chapters broadly covering cardiac and circulatory physiology, including hemostasis and shock; particular strong are discussions on perioperative arrhythmias, fluids and electrolytes, and transfusion therapy. Review of coagulation mechanisms was satisfactory; however, surprisingly, there was no mention of low molecular weight heparin and its implications to the anesthesiologist, even though it is referred to in a table on thrombosis prophylaxis. Chapters on the autonomic nervous system, temperature regulation, immune responses, and renal physiology are well written and easily understandable. Unusually, sections covering renal and gastrointestinal physiology are followed by anesthesia for patients with hepatobiliary disease and anesthesia for genitourinary surgery, respectively—no corresponding chapters for other systems and anesthetics for those patients are included.

Although some overlap in physiology and pharmacology is present, chapters 25 through 42 address mechanisms and drugs in general anesthesia with a strong emphasis on volatile anesthetics. Also well covered are barbiturates, benzodiazepines, and opioids; particularly welcome topics reviewed are opiate receptor antagonists and anesthesia for the chemically dependent patient. A separate chapter on diethyl ether and chloroform is interesting from a historical perspective, but chapters covering neuromuscular blocking agents and local anesthetics are missing. Also, the book contains very little review of propofol, etomidate, and ketamine. The final four chapters covering miscellaneous topics, including the physiology of pregnancy, physiology of the normal pediatric patient, acute and chronic disorders, and resuscitation, are interesting, worthy additions.

Overall, this text has a number of superb chapters and several well represented areas. There are missing subjects, particularly in pharmacology, and some "throw-in" chapters disturb the focus of the book. Overall, this effort to incorporate the pharmacology and physiology of anesthesia into a single text falls short of being complete.

Encyclopedia of Anesthesia Practice.

By Steven M. Yentis, Nicholas P. Hirsch, and Gary Smith. Edited by Thomas Feeley. New York, Churchill Livingstone, 1996. Pages: 435. Cost: $80.00.

The Encyclopedia of Anesthesia was first published in 1993 in England. Originally designed for candidates taking the final portion of the examination for the Fellowship of the Royal College of Anaesthetists, the current text is a revision of the English edition intended for the U.S. market. The aim of the book is to provide information on physiology, pharmacology, anatomy, physics, statistics, history, clinical anesthesia, and intensive care to anesthesiologists. The text is written by three anesthesiologists and intensivists from the United Kingdom, and one from the United States. The authors are to be congratulated for providing up-to-date information for more than 1,800 entries covering a wide range of topics.

Following encyclopedia format, the text is divided into 26 chapters, with entries in alphabetical order. The authors have succeeded in writing concise entries, often in a list of "keywords" or a few paragraphs. This gives the reader a brief review of the topic. For example, the ABO blood groups are covered in one paragraph and a table, and analgesia in one sentence. Some entries contain a helpful up-to-date reference for further reading. However, the attempt to cover all of anesthesia and several related topics in one book results in entries that often are too brief (even cryptic) to include new learning. Or, an entry may refer to the unwanted effects of a medication, but, due to space constraints, not specify these effects.

Of some concern is the absence of certain common clinical procedures, such as axillary block. Of greater concern is the presence of recommendations relaying outdated (described as "now rarely used")/or controversial information regarding clinical care. For example, reduction of labor pain using abdominal decompression by negative pressure is not common clinical practice. And, the use of particulate antacids such as magnesium trisilicate is now actively discouraged. In addition, there are errors, likely typographical, but, nonetheless, hazardous. The concentration of hypertonic saline solution is presented as 0.18% when it should be 1.8%, and the concentration of sodium is presented as 135–145 mEq when it should be 135–145 mEq/L.

Efforts to edit the British version of this text for the U.S. market are moderately successful, but the current text still contains a multitude of references, terms, and drugs relevant only to anesthetists in the U.K. For example, the maximum recommended intravenous dose for labetalol hydrochloride in the U.S. is 300 mg, but the text recommends 200 mg; yohimbine is approved in the U.S. for clinical use,