

Mark A. Warner, M.D., Editor

**Avoiding Common Anesthesia Errors.** Edited by Catherine Marcucci, M.D., Norman A. Cohen, M.D., David G. Metro, M.D., and Jeffrey R. Kirsch, M.D. Philadelphia, Lippincott Williams & Wilkins, 2007. Pages: 704. Price: \$54.95.

The Institute of Medicine and other organizations claim that human error results in an alarming number of iatrogenic injuries and deaths each year. The American Society of Anesthesiologists Closed Claims Project provides insight into the character but not the incidence of adverse outcomes in anesthesia. Just how common are errors in medicine and anesthesia, specifically? Minor errors—of little or no consequence to patient outcome—may occur quite frequently but are seldom reported. Some of these minor errors represent “near misses” or “close calls,” narrowly avoiding death or injury. Avoiding errors, whether minor or major, requires education, training, good judgment, vigilance, and experience. We learn how to minimize or reduce errors not only from our personal education and experience but from the experience and insight of our colleagues.

Catherine Marcucci *et al.* have compiled an extensive collection of short treatises on a great number of issues and errors in our practice. Eighteen editors and nearly 200 contributors cover more than 200 topics in this 704-page-long softcover book. Chapters are arranged in sections, and each chapter is approximately four to six pages long.

Sections cover the obligatory basic subject areas such as airway and ventilation, lines and access, and medications. Interestingly, there are also sections on legal issues, professional practice, coding, and billing. The implication is that errors in our practice extend beyond clinical management of our patients. While the book title suggests a focus on “common errors,” several chapters cover topics that are only peripherally related to errors *per se*.

A valuable feature of the book is the practical usefulness of the table of contents itself. Simply perusing the titles of the chapters will provide the reader with numerous practical tips and bits of advice. For example, chapter 57 is titled, “Do Not Forget that Linezolid Is a Monoamine Oxidase Inhibitor (MAOI) as well as an Antibiotic.” The chapter titles also entice the reader to delve into the topics. Chapter 97’s title, “Do Not Use Your Cell Phone in the Operating Room,” and chapter 77’s title, “Be Aware that Schizophrenic Patients Have Greater Perioperative Risks than Age-matched Controls,” beg the questions “Why?” and “Really?” Explanations, answers, and advice are easily obtained after reading short chapters that conclude with “take home points.” For those readers who are compelled to learn even more, there is a list of suggested readings at the end of each chapter.

The editors do not offer a systematic approach to reducing errors in anesthesia practice. This is not a textbook on medical error. In fact, the editors claim that the book originated as an effort to write down the clinical pearls that are verbally passed from senior to junior staff. As chapter 177 begins, “People may understand statistics, but they believe stories.” Much of the subject material seems to have originated from bits of experience, tales of terror, words of wisdom, and anecdotal observations. That is not to say that the material is invalid, opinionated, or unfounded; most chapters seem to be balanced and accurate. Certainly, this is not the heady science of academia or the whimsical whispers heard in ivory towers. Instead, the reviews and advice are concise, pragmatic, and clinical.

Most of us prioritize our approach to high-risk situations by evaluating and managing the ABCs, and so it is with this book. The first sections and chapters cover topics pertaining to the airway, ventilation, circulation, and resuscitation. Instead of starting with the ABCs, users of this book may benefit by beginning their reading near the end of the book. The chapters in the section titled “Human Factors” provide the groundwork for understanding the nature and genesis of errors in medicine. In fact, the material in this section could be used as framework for tying together all the myriad material in the other chapters by

assisting the reader in analyzing, comprehending, and understanding the specific instances of error. For example, it might have been instructive for the authors or editors to analyze each example of error in light of the human factors that contribute to error in general. The authors could have offered whether any particular error was primarily due to a failure in communication, leadership, conflict management, vigilance, or a combination of these factors.

Even without a cohesive theme or approach, the book remains immensely valuable as a one-stop compendium of common error-prone clinical situations. The brief chapters stand on their own and can be read and assimilated quickly and painlessly. Analyzing the situations for a common denominator, understanding why the errors are common, and providing a systematic approach to reducing the incidence of untoward events in anesthesia will remain the task of another edition of this text or a separate text.

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**Irwin and Rippe’s Intensive Care Medicine, 6th Edition.** Edited by Richard S. Irwin, M.D., F.C.C.P., and James M. Rippe, M.D. Philadelphia, Lippincott Williams & Wilkins, 2007. Pages: 2,544. Price: \$239.00.

Irwin and Rippe first published their eponymous *Intensive Care Medicine* 22 yr ago. In the preface to their latest edition, they state that their emphasis is on clinical management, and they reflect: “What was initially primarily a medical intensive care medicine textbook has evolved to focus an equal emphasis on medical, anesthesia, and surgical intensive care” (p. xL vii).

The book is arranged in 18 sections, comprising 211 chapters with more than 2,500 pages. There are 349 contributing authors, who hail from a panoply of specialties, including anesthesiology, surgery, pulmonary medicine, and cardiology. Because the book weighs 10 lb, the reader will welcome the password inside the front cover, which grants access to the on-line, searchable, complete electronic text.

The overall organization is encyclopedic, covering the expected core chapters arranged by organ system, but also including a section devoted to “Surgical Problems in the ICU” and an extensive discussion of “Overdoses and Poisonings.” The book’s concluding section, “Contemporary Challenges in the ICU,” has been substantially expanded from the fifth edition and includes chapters on ethics, economics, and informatics in the critical care context.

Of particular interest to anesthesiologists is the outstanding, nuanced summary of the controversies surrounding the role of pulmonary artery catheters in critically ill patients (chapter 4), the chapter on cardiac surgery (152), and the chapter on preoperative medicine (153). In addition, there is a chapter on management of pain in critically ill patients (chapter 23), which includes a state-of-the-art overview of pain mechanisms and analgesic pharmacology.

## Strengths

Several chapters provide succinct and practical tables summarizing pivotal recent literature on the topic of the section (e.g., “Summary of Advances in Managing Resuscitation,” “Selected Evidence-based Clinical Trials or Meta-analyses Relevant to Antithrombotic Therapy”). Moreover, in most cases, the evidence underlying clinical recommendations is described, and most chapters have references that are up-to-date (as recent as 2006) to the extent possible for a textbook.

In accord with the clinical focus, most sections concentrate on practical aspects of the various topics, and the interested reader is directed to reviews of corresponding basic science frontiers. A notable exception is the extensive coverage of the physiology of acute lung injury, from histology to molecular biology to epidemiology. This is easily forgiven because the writing and organization of the pulmonary section are outstanding. The overall clinical focus remains preeminent, and some creative approaches are used to translate scientific principles into clinical applications. For example, the chapter on acid-base disorders concludes with case scenarios illustrating application of quantitative rules of thumb to real-world diagnostic challenges.

The frequency of headings and subdivisions of chapters and the 75-page index makes it feasible to look up a topic and scan through a chapter for a particular paragraph or reference with reasonable efficiency.

Given the background of the editors (pulmonary/critical care medicine and cardiology), it is not surprising that the discussions of pulmonary and cardiac physiology applied to intensive care unit patients are insightful and effective introductions to their respective sections.

## Weaknesses

Some important contemporary controversies are not presented. For example, the furor regarding the ethics of the manufacturer's marketing strategy for recombinant activated protein C, as well as the debate of the validity of the study design, is not mentioned in the sepsis chapter (chapter 163).<sup>1,2</sup>

Curiously and conspicuously, there is no mention of the heated debate about the relative merits and risks of aprotinin for heart surgery, despite the dedication of an entire chapter (152) to "Management of the Postoperative Cardiac Surgical Patient."<sup>3,4</sup> This chapter's discussion of postoperative arrhythmias seems out-of-date to the reviewer, and in part is in contrast to current American College of Cardiology-American Heart Association guidelines.

The chapter on pulmonary hypertension is an excellent summary of the physiology of the right ventricle and the pulmonary circulation and provides a logical differential diagnosis of pulmonary hypertension. Unfortunately (and not characteristically), treatment discussion emphasizes long-term management of idiopathic pulmonary hypertension. What is frankly missing is an approach to the acute pulmonary hypertension crisis and suggestions for an algorithmic approach to rapid diagnosis and emergency treatment of life-threatening pulmonary hypertension (e.g., after heart transplantation).

The figures and illustrations are all black and white, which is regrettable especially when they are important in evoking a difficult concept to describe with words alone. The quality of some photographic reproductions reminds me of textbooks from years gone by.

Unfortunately, the recent publication of the updated guidelines for preoperative cardiac evaluation renders much of the preoperative

medicine chapter dated; however, the book was already on the shelf when the latest guidelines were published.<sup>5</sup>

There are some overlapping topics. For example, several chapters include redundant descriptions of the molecular biology (including cytokine profiles, endothelial activation, and the inflammatory response) underlying the development of systemic inflammatory response syndrome and multisystem organ failure. Considerable space could have been saved if this important information were condensed into a single chapter and repetitive discussions of this material were replaced by references to the dedicated chapter.

## Assessment

As computers become ubiquitous, and electronic databases of medical literature become increasingly powerful and user-friendly, the textbook may seem less and less relevant as a resource for the front lines of clinical medicine. Nevertheless, the lengthy, multi-authored textbook presents the fundamental biology and the broad overview of clinical problems in more depth and breadth than is possible for the periodical literature. For those who are seeking to review the evidence basis for current critical care, in parallel with a lucid and methodical tutorial of the relevant physiology, the latest edition of *Irwin and Rippe's Intensive Care Medicine* retains its place in the medical library.

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## References

1. Eichacker PQ, Natanson C, Danner RL: Surviving sepsis-practice guidelines, marketing campaigns, and Eli Lilly. *N Engl J Med* 2006; 355:1640
2. Gardlund B: Activated protein C (Xigris) treatment in sepsis: A drug in trouble. *Acta Anaesthesiol Scand* 2006; 50:907-10
3. Mangano DT, Tudor IC, Dietzel C, Multicenter Study of Perioperative Ischemia Research Group, Ischemia Research and Education Foundation: The risk associated with aprotinin in cardiac surgery. *N Engl J Med* 2006; 354:353
4. Hogue CW: Aprotinin use during cardiac surgery: A new or continuing controversy? *Anesth Analg* 2006; 103:1067-70
5. Fleisher LA, Beckman JA, Brown KA, Calkins H, Chaikof E, Fleischmann KE, Freeman WK, Froehlich JB, Kasper EK, Kersten JR, Riegel B, Robb JF, Smith SC, Jr, Jacobs AK, Adams CD, Anderson JL, Antman EM, Buller CE, Creager MA, Ettinger SM, Faxon DP, Fuster V, Halperin JL, Hiratzka LF, Hunt SA, Lytle BW, Nishimura R, Ornato JP, Page RL, Riegel B, Tarkington LG, Yancy CW, American College of Cardiology, American Heart Association Task Force on Practice Guidelines (Writing Committee to Revise the 2002 Guidelines on Perioperative Cardiovascular Evaluation for Noncardiac Surgery), American Society of Echocardiography, American Society of Nuclear Cardiology, Heart Rhythm Society, Society of Cardiovascular Anesthesiologists, Society for Cardiovascular Angiography and Interventions, Society for Vascular Medicine and Biology, Society for Vascular Surgery: ACC/AHA 2007 guidelines for perioperative cardiovascular evaluation and care for noncardiac surgery. *J Am Coll Cardiol* 2007; 50:159-241

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## CORRECTION

In Table 5 of the article on pages 892-902 in the December 2007 issue of *ANESTHESIOLOGY*, the second entry from the bottom, first column, contained a typographical error. The entry should have read as follows:

Urine > 0.5 ml · kg<sup>-1</sup> · h<sup>-1</sup>†

Kheterpal S, Tremper KK, Englesbe MJ, O'Reilly M, Shanks AM, Fetterman DM, Rosenberg AL, Swartz RD: Predictors of postoperative acute renal failure after noncardiac surgery in patients with previously normal renal function. *ANESTHESIOLOGY* 2007; 107:892-902.