

*Michael J. Avram, Ph.D., Editor*

**Cardiopulmonary Bypass.** Edited by Sunit Ghosh, M.B.B.S., F.R.C.A., Florian Falter, M.D., Ph.D., F.R.C.A., and David J. Cook, M.D. Cambridge, United Kingdom, Cambridge University Press, 2009. Pages: 207. Price: \$60.00.

The development of cardiopulmonary bypass (CPB) changed the realms of cardiac, thoracic, and vascular surgery. Continuing research and development feed a growing wealth of information about CPB. *Cardiopulmonary Bypass* provides a complete overview of the field for all providers involved with the practice of CPB in a book of manageable size and length. The editors of this book are experienced anesthesiologists from world-renowned centers in the United Kingdom and the United States. Experts from both the United Kingdom and the United States contributed to this book and include surgeons, anesthesiologists, and perfusionists.

The opening chapters are filled with figures of equipment and monitors and how they come together in a system for CPB. They provide an appropriate introduction to those who are new to CPB while providing a review for those who are already familiar with the system. The chapters on the conduct of CPB and weaning from CPB are easy to follow and thorough, providing information about different clinical applications and alternatives.

The chapter on anticoagulation and coagulopathies is written with a contribution from Linda Shore-Lesserson, M.D., who is known for her expertise on this topic. The chapter reviews the coagulation cascade, current strategies in anticoagulation and monitoring, and bleeding disorders in the setting of CPB. Information about medications used for anticoagulation, its reversal, and the prevention of bleeding is up to date. The topic of heparin-induced thrombocytopenia is well covered from pathophysiology to diagnosis to management in patients undergoing cardiac surgery. The chapter ends with a brief, but useful, section on the management of a bleeding patient.

Although it changed the scope of cardiothoracic surgery, CPB is associated with organ dysfunction. There is a general chapter that gives an overview of the effects of CPB on each organ system, and then there are chapters appropriately dedicated to myocardial protection, deep hypothermic circulatory arrest, cerebral morbidity, and renal protection. The chapter on myocardial protection is written by Constantine Athanasuleas, M.D., and Gerald D. Buckberg, M.D., cardiothoracic surgeons who are known for their contributions to the fields of myocardial protection and cardiac failure. The chapter on deep hypothermic circulatory arrest flows well,

covering history to neuroprotective techniques, and the chapter on cerebral morbidity builds on that chapter, providing more information about neurophysiology and neurologic complications. Information on acute kidney injury is written by a nephrologist and is a great update and review for all providers of CPB.

The book spends an appropriate amount of time on extracorporeal membrane oxygenation and circulatory devices as well as the use of CPB in noncardiac procedures. The chapter on extracorporeal membrane oxygenation is impressively thorough for a review book. Some of the recent advances that use the concepts and components of CPB have occurred in the use of circulatory devices. The chapter gives an overview of the different devices used, with relevant figures. In addition, the different indications for device implantation are discussed.

The editors have fulfilled their goal of writing an “easily readable source of material for the everyday practice of clinical perfusion.” Each chapter is written with references that are current and complete without being overwhelming. Because this book covers the fundamentals of CPB in adults, it does not venture into details on newer techniques, such as those used in minimally invasive surgery or pediatric surgery. For those learning and teaching about CPB, this book is a wonderful companion to reference textbooks that are already available.

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**Core Topics in Thoracic Anesthesia.** Edited by Cait P. Searl, F.R.C.A., and Sameena T. Ahmed, F.R.C.A. Cambridge, United Kingdom, Cambridge University Press, 2009. Pages: 215. Price: \$81.00.

The practice of thoracic anesthesia requires detailed knowledge of respiratory physiology, pharmacology, anatomy, and related surgical techniques for a patient population that frequently has major comorbidities. *Core Topics in Thoracic Anesthesia* is a multiauthored British text that provides a clear and concise introduction to the evaluation and management of patients undergoing thoracic surgery. Consistent with the goals of the *Core Topics* series, this text provides anesthesia trainees at all levels with a readily readable review of the perioperative care of the thoracic surgical patient. This hard-bound edition comprises three sections: preoperative consid-

erations, anesthesia for specific procedures, and postoperative management. The chapters in each section are short (about five to ten pages) and are accompanied by complementary tables, diagrams, and photographs.

The first section, preoperative considerations, reviews general background material in anatomy, physiology, and pharmacology as a practical foundation for the practice of thoracic anesthesia. The subsequent two chapters discuss common respiratory diseases and important aspects of the preoperative assessment for thoracic surgical procedures. Although some readers may find the detailed review of respiratory diseases too extensive in places, this does not detract significantly from the overall success of this chapter.

In the conclusion of the section on preoperative considerations, two chapters review one-lung ventilation in detail, with the discussion covering the indications and current modalities, all aided with complementary figures. Double-lumen endotracheal tubes are explained thoroughly, including helpful practical advice on size selection, insertion technique, and confirmation of correct position. The management of one-lung ventilation is also reviewed in a practical and problem-solving fashion.

The second section, anesthesia for operative procedures, comprises 12 chapters describing anesthetic considerations for thoracic procedures, including bronchoscopy, lung resection, and lung transplantation. The chapters covering anesthesia for esophageal and chest wall surgery explain the operative management of these diseases and associated anesthetic concerns clearly. The chapters on lung transplantation and pulmonary endarterectomy are especially well written and may serve as a good refresher for more experienced practitioners who do not routinely participate in these procedures. In the conclusion of this section, the chapters on anesthetic concerns in the morbidly obese and elderly are particularly helpful because these patient groups are not uncommon in contemporary thoracic anesthetic practice.

The third and final section of this text reviews postoperative management in both the short-term and beyond. The inclusion of this section is commendable as the field of anesthesiology continues to expand into all areas of perioperative care. The chapter on perioperative fluid management provides a balanced discussion of this contentious issue, including a brief review of pertinent recent clinical trials. Two chapters are dedicated to pain management after thoracic surgery. The first examines the use of regional anesthetic techniques in the immediate postoperative period, and the second reviews mechanisms of chronic neuropathic pain and associated therapeutic interventions. The application of various ventilatory modes in acute lung injury is presented clearly in the chapter covering the management of postoperative respiratory problems. Although narrower in scope, the chapter on extracorporeal membrane oxygenation is excel-

lent and serves as a thoughtful primer on this valuable treatment modality.

Overall, *Core Topics in Thoracic Anesthesia* provides an excellent introduction to the field of thoracic anesthesia. The preoperative and postoperative sections provide a foundation of core principles in thoracic anesthesia, with the surgical chapters in the second section building upon these concepts within the framework of specific procedures. Furthermore, the surgical techniques section can also serve as a useful quick reference. The surgical chapters discuss procedures encountered in the operating room to facilitate optimal anesthetic management. This text presents the material clearly and concisely without overwhelming the reader with excessive detail and controversy.

This text has a decidedly British focus and so does not necessarily reflect management approaches and guidelines in other parts of the world. Authors frequently cite British epidemiologic data and clinical recommendations from *The British Thoracic Society* and *The Society of Cardiothoracic Surgeons of Great Britain and Ireland*. This represents an opportunity to expand the scope and applicability of this material in the next edition. A second opportunity to improve the text would be to add more high-quality images that illustrate the pathology being presented more clearly. This image clarity might be enhanced with the introduction of color photographs. A third opportunity for improvement of the next edition would be to include the appraisal of important and relevant clinical trials wherever feasible throughout the book. This would provide the reader with an immediate appreciation of the current areas of investigation. A fourth opportunity would be to improve the consistency across chapters, including adding a “key points” section at the conclusion of each chapter.

In summary, the editors and authors of *Core Topics in Thoracic Anesthesia* successfully meet their goal of providing a readable introductory text on thoracic anesthesia for thoracic anesthesia trainees at all clinical levels. We congratulate the editors on their fine focusing of the material with an appropriate level of detail to facilitate effective and safe practice of this anesthetic subspecialty. We strongly recommend this text to anesthetic practitioners seeking an introduction to thoracic anesthesia and to more experienced practitioners looking for a refresher on a thoracic anesthesia topic. Furthermore, this text not only provides a foundation in thoracic anesthesia but also will motivate the reader to pursue a more detailed discussion of this anesthetic subspecialty.

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