Mark A. Warner, M.D., Editor

International Anesthesiology Clinics: Perioperative Echocardiography. Edited by Kyung W. Park, M.D., Hagerstown, Maryland, Lippincott Williams & Wilkins, 2008. Pages: 155. Price: $131.

Transesophageal echocardiography (TEE) is fast becoming the preferred diagnostic tool for evaluation of cardiac, pulmonary and vascular physiology, and pathology. It has been increasingly utilized for both cardiac as well as noncardiac surgeries. With increasing number of centers doing valve repairs as opposed to replacements, the use of TEE will continue to grow. As three dimensional TEE images get better and easier to obtain and interpret, the application of TEE will continue to expand. TEE is a category I indication for hemodynamic instability for non cardiac surgery according to ASA (American Society of Anesthesiologists) guidelines. ICU (Intensive Care Unit) care is leaning towards TEE for guidance towards appropriate care, especially in ventilated patients. The need for increasing echocardiographic experience has prompted the National Board of Echocardiography (www.echoboards.org) to develop standards and tests to evaluate echocardiographers As the number of providers performing and interpreting echocardiography increases, so does the need for books that cater to the wide array of echocardiographic needs.

An ideal book would cover transthoracic, perioperative, and Intensive Care Unit TEE, as well as some aspects of pediatric TEE. *Perioperative Echocardiography*, edited by Kyung W. Park, MD is one such book. It provides TEE information simple enough to be understood by novices yet covers most of the details needed for more extensive comprehension. The book is written by multiple authors and has very good references, imparting credibility to the book. Explanations for various ways of obtaining and interpreting images are not rigid, and the book cautiously warns about possible pitfalls.

Any cardiac book has to delve into physiology to explain complex pathology. This book provides a sufficient depth of explanations for this purpose. It also has an excellent epidemiological introduction to most chapters, citing many good references. It covers the entire spectrum of cardiac problems and supports acquisition of a knowledge base that allows readers to comprehend without additional references or texts. In addition, an understanding of physics is necessary to fully use the capabilities of TEE. The text provides a broad overview of basic TEE physics and calculations initially and, when readers have become accustomed, later chapters go into more detailed explanations and calculations.

The impact of diastolic dysfunction has grown considerably in the last few years and is now recognized to be an important parameter in practice. The book provides an excellent chapter on diastology. The overview encompasses virtually all newer methods of determining diastolic dysfunction. The text also includes well-written chapters on intracardiac masses and noncardiac uses of TEE.

Suggestions for further improvement of the book include better quality and colored pictures. As mentioned in the preface of the book, echocardiology is a visual art. While the images in this text provide good information, they could be improved by using glossy and colored pages. It is hard to make any comments on live images, as there was no CD-ROM, (Compact Disc) a supplement often included with texts on TEE. Three-dimensional echocardiography is becoming more and more common, and this book does not address it. In addition, new texts often offer questions and multiple choice answers either at the end of the book or in the CD-ROM (Compact Disc) format as a way of accessing knowledge gained from the book. This opportunity is not present in *Perioperative Echocardiography.*

Overall, the book is an easy read and provides a wealth of information for both novice and experienced echocardiographers. In only 155 pages, it has managed to convey the most important aspects of TEE. The book should be considered a welcome addition to departmental libraries and those of individuals who are particularly interested in TEE.

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The Comatose Patient. By Eelco F. M. Wijdicks, M.D., New York, Oxford University Press, 2008. Pages: 608. Price: $125.

The comatose patient is an emotionally charged clinical dilemma in both diagnosis and therapy in the intensive care unit. In "The Comatose Patient" Dr. Wijdicks does an excellent job in bringing new concepts to the longstanding knowledge base of this patient population. The book is well laid out and divided into two parts: the first focuses on the development of the modern knowledge base and concepts in clinical care while the second discusses the cause, diagnosis and treatment of coma in seventy-five disease states. Included with "The Comatose Patient" is an Instruction Guide of the FOUR (Full Outline of UnResponsiveness) Score and a DVD.

The first section is the Understanding, Diagnosing, and Care of Comatose Patients. It begins with a cohesive history of the concepts regarding coma including mechanisms, signs, symptoms and patterns described by the great scientists who observed them. "The Neuroscience of the Awake State" looks at the anatomy and chemistry of consciousness. It has long been accepted that bilateral cortical and reticular activating system damage and intrinsic lesion or displacement of the brainstem cause unconsciousness. Wijdicks deemphasizes myths regarding herniation syndrome and stresses the importance of thalamic and brainstem deformation as the major etiology of coma. The figures and diagrams in the section on the neurologic examination are clear and concise, especially those that refer to the cranial nerve examination and brainstem lateralizing signs. The sections on the diagnosis of impaired states of consciousness and brain death are superb. The chapter on brain death diagnosis and pathophysiologic responses gives recommendations and guidelines to better meet criteria for organ procurement. The chapter on law and bioethics in combination with the section on brain death diagnosis and organ donation protocol completes a concise review of this subject.

The chapter on "Neuroimaging and Neuropathology" does not go into the normal brain anatomy and, therefore, assumes the reader to have that basic knowledge. The discussion of various radiologic and pathologic findings in coma is full of useful information and the magnetic resonance imaging findings are correlated to the vignettes in the second half of the book, which may have been helpful to do throughout the book.

Medical management of the comatose patient begins with the ABCs (airway, breathing, circulation) and expands to cover the gamut of intensive care of these patients. Flow diagrams provide a concise plan for the treatment of brainstem and bihemispheric lesions. Many critical care interventions mentioned in this chapter were too brief to offer evidence for institution of an intervention described (*i.e.*, glucose control). The section of coma in media and popular culture looked at news writing, television, movies and internet views and coma but barely touched the surface of the subject. Dr. Wijdicks does, however, correctly deride the media industry for giving a false impression of coma.

In the second section, "The Clinical Approach to the Comatose Patient," the author describes the etiology, treatment plan, and prognosis for 75 disease states. Vignettes introducing these disease states cover trauma, hemorrhagic, ischemic, infectious, metabolic, endo-

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crine, pharmacologic etiologies and even coma after a Rave party. The group of postoperative "comas" is interesting to anesthesiologists and may be useful to those preparing for board examinations. However, anesthetic overdose as a cause of coma in this day and age is somewhat far-fetched and offers little to an experienced anesthesiologist. Each vignette is preceded by a conversation which is meant to introduce the patient's coma as if it is a clinical discussion during rounds. I found the conversation to be somewhat distracting and added little to the description of the disease. The cause of coma in each disease is clearly laid out and summarized in a table. The treatment plans are succinct but narrow in their scope, concentrating on the example in the conversation as opposed to giving a treatment plan for all possibilities of the entity.

The Glasgow Coma Score, introduced in 1974, has been the standard against which all newer scales are judged. It has maintained its prominence in this regard due to its simplicity, correlation to prognosis, the speed it can be performed and the information derived, despite shortcomings of its gross exam and the inability to perform one section of the scale because of intubation. The FOUR Score developed by Dr. Wijdicks has four components (eye response, motor response, brainstem reflexes and respiration) graded on a scale of 0 to 4. The score is more complex than the Glasgow Coma Score, requiring more maneuvers to perform, but it enables the examiner to localize the cause of coma. The Four Score admittedly has advantages over the Glasgow Coma Scale, but it will not become a standard until more data are collected regarding its correlation to prognosis in different disease states so that it can be compared to the Glasgow Coma Scale.

The DVD has five chapters: Instruction of the FOUR Score, Selected Neurologic Findings in Comatose Patients, Seizures and Pseudoseizures, States of Impaired Consciousness, and Clinical Diagnosis of Brain Death. The clinical examples seen on the DVD are excellent teaching tools for showing such pathologic findings as abnormal breathing patterns and eye movements seen in coma. The eye movements seen during cold caloric testing are well depicted. The Clinical Diagnosis of Brain Death and the included performance of the apnea test is an excellent clinical reference.

Coma is not a simple event defined by a specific anatomical or chemical change–it is a complex disease that differs from lesion to lesion. "The Comatose Patient" is an excellent reference for the many types of coma one encounters, even esoteric ones, and belongs in every intensive care unit that cares for patients with neurologic disease.

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