

■ BOOK REVIEWS

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The Echo Manual from the Mayo Clinic, By Jae K. Oh, James B. Seward, and A. Jamil Tajik. Boston, Little, Brown and Company, 1994. Pages: 252. Price: \$79.95.

Anesthesiologists starting a training program in cardiac echocardiography often need a simple reference text as a guide to imaging specific structures, to explain an equation, or to discuss cardiac correlates of noncardiac disease. *The Echo Manual* endeavors to be the beginner's guide to echocardiography. It dwells on the practical aspects of examination and diagnosis without a weighty discussion of the theory of ultrasound.

A historical development of cardiac echocardiography introduces the text, followed by chapters illustrating the various merits of transthoracic and transesophageal imaging. The reviews of basic principles required to analyze left ventricular function or calculate hemodynamics derived from measurements of areas and velocities are clear and easy to follow. Eleven chapters form the body of the book as a presentation of echocardiographic findings associated with specific disease states. The topics range from noncardiac systemic illness (hemochromatosis as an example) to a summary of congenital heart disease. One chapter discusses the use of cardiac echo in the operating room and a guide to echo monitoring of nonsurgical procedures. The text concludes by outlining requirements for a complete examination focused to the referring diagnosis.

The Echo Manual is exactly what it claims to be: a quick reference for either a trainee or a modestly experienced echocardiographer. Diagnostic discussions do not attempt to be comprehensive but cover the principal points succinctly and guide the reader toward a rapid diagnosis. References and indexing are adequate, but not exhaustive, in keeping with the brevity of the text. The use of illustrations, particularly the artist's drawings, offers an immediate grasp of the salient anatomy. The emphasis is on the most common and easily acquired planes of section, with a brief introduction to multiple plane imaging. Integration of warnings about common errors of technique or interpretation occurs throughout the text in association with the appropriate pathophysiology.

The strength of *The Echo Manual* is the breadth of its synopsis in a readable and enjoyable form. Anesthesiologists may prefer less emphasis on transthoracic and more discussion of transesophageal examination. This is a good companion volume for the anesthesiology resident spending a rotation studying basic echocardiography with a cardiology service.

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Transesophageal Echocardiography. Edited by William K. Freeman, M.D., James B. Seward, M.D., Bijoy K. Khandheria, M.D., A. Jamil Tajik, M.D. Boston, Little, Brown and Company, 1994. Pages: 599. Price: \$185.00.

Transesophageal echocardiography (TEE) is becoming a standard-of-care monitor for open heart surgery, particularly for repair of the mitral valve. Selected closed cardiac cases, such as the coronary artery

bypass patient with postinfarct angina and left bundle branch block, also may benefit. TEE may detect myocardial ischemia when the electrocardiogram is unhelpful or locate an intracardiac thrombus before the surgeon lifts the heart. Anesthesiologists will be expected to exhibit increasing levels of proficiency with TEE interpretation or yield the head of the table to cardiologists. *Transesophageal Echocardiography*, a comprehensive reference authored mostly by cardiologists, will be appreciated best by highly experienced echocardiographers.

The first chapters briefly review the history of TEE and offer an example for organization of the TEE laboratory and the requisite training of personnel. Beautifully prepared cadaveric specimens display basic cardiac anatomic structures in comparison with echographic images in the same plane of section. Specific advantages of biplane and omniplane examination are presented in contrast to the widely available and less expensive single-plane instrument. Seward's chapter on "Limitations and Pitfalls" of TEE ranks as one of very few self-contained discussions on the subject in texts devoted to TEE.

The core of the text includes sections on semiquantitative evaluation of ventricular function, regional assessment of ischemia, chronic valvular abnormalities, vegetations, and prosthetic valves. Although primarily directed to cardiologists who evaluate patients outside the operating room, the methods and conclusions will be appreciated by anesthesiologists who use echocardiography to guide intraoperative management. An excellent illustrated differential diagnosis of intracardiac thrombus and other mass lesions is presented in juxtaposition with a similarly thorough review of cardiac embolic sources. A well written but brief chapter on congenital heart disease could be developed into a complete text on the subject. Examination of the thoracic aorta is discussed in a separate chapter with appropriate discussion of the limited visualization of the ascending aortic segment.

Several specialty chapters are of particular interest to anesthesiologists. The chapter on intraoperative TEE presents criteria for a variety of intraoperative decisions with special emphasis on repair of the mitral valve. A systematic approach to the heart with residual disease being prepared for separation from cardiopulmonary bypass, however, was not included. A chapter on TEE in critically ill patients is case-oriented, with examples ranging from postoperative coronary revascularization with tamponade to evaluation of donors for cardiac transplant. The final chapter discusses three-dimensional reconstruction echocardiography without burdensome mathematics, although the importance of this methodology to cases such as cardiomyoplasty was left to the reader.

Transesophageal Echocardiography may be recommended as a comprehensive reference for anesthesiologists experienced with echocardiography, although the intended audience appears to be cardiologists working primarily outside the operating room. The text is less helpful in defining the important role of TEE monitoring when evaluating relative severity of multiple lesions in the setting of ongoing intraoperative insults or separating a patient from cardiopulmonary bypass. Anesthesiologists working with cardiology departments can use this text or its references when developing basic standards of care or beginning institutional TEE programs.

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