LETTERS TO THE EDITOR

Interactive TEE Review

To the Editor:

Transesophageal echocardiography (TEE) has become a useful intraoperative tool for the cardiac anesthesiologist; however, it continues to extend its utility to noncardiac surgery as well. Hemodynamic instability, cardiac tamponade, and aortic dissection among others are readily diagnosed with TEE, providing an opportunity for prompt treatment. Many anesthesiologists, as well as intensivists and cardiac surgeons, seek proficiency with TEE in preparation for the National Board of Echocardiography's Perioperative Transesophageal Echocardiography examination and certification. Savage et al have developed a self-assessment DVD that in conjunction with a standard TEE textbook provides an excellent background for TEE competency and certification.

The DVD, *Interactive TEE Review: Self-Assessment Examination* (Lippincott Williams & Wilkins, released October 1, 2007), is a fantastic supplement to a comprehensive TEE textbook for reviewing key principles and common pathologies. The review is divided into study and test modes, allowing for direct feedback or a video-based examination. Approximately 400 questions are used covering 31 chapters with topics including physics of ultrasound, surgical anatomy, assessment of valvular function, and organization of a TEE service, among others.

Once the study or test mode is selected, easy-to-navigate menus allow the selection of any or all of the various chapters for review as well as the number of questions desired. The basic format provides a stem question in the top left with multiple-choice answers below. If a TEE loop or still image is involved, it is displayed conveniently on the right with the ability to enlarge to a full view for closer review. When in study mode, correctness and explanations are provided upon answer selection, whereas test mode provides a summary with opportunity for similar explanations upon examination completion. The 2 modes combined provide an opportunity to the echocardiographer for review and self-assessment within the same 31 essential chapters.

The review provides an excellent variety of questions with superb image-quality video loops; however, future versions of the review may benefit from an increase in the volume of questions. Although the explanations to questions are mostly sufficient, another potential addition to further complete the review DVD may include references to standard TEE texts so that the trainee may further investigate areas of deficiency.

This new interactive TEE review DVD offers a splendid coverage of echocardiography to both the established and training anesthesiologists within the cardiac and noncardiac realms. Savage et al are applauded for their work in creating a well-designed, easy-to-navigate, educational TEE resource.

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Intraoperative Echocardiographic Detection of an Anomalous Left Main Coronary Artery

To the Editor:

A nonsmoking 40-year-old man presented for elective coronary angiography because of atypical precordial pain in conjunction with dyspnea during heavy exercise for a duration of 3 months. The coronary angiography revealed 3-vessel disease with a left main coronary artery (LMCA) stenosis of 95% to 99% and a significant stenosis of the right coronary artery. Therefore, the patient was scheduled for on-pump coronary artery bypass graft surgery. Intraoperative transesophageal echocardiography (TEE) revealed a normal-sized left and right ventricle, both with good systolic function. No abnormalities of the cardiac valves were present. However, while visualizing the origin of the coronary arteries from the aorta (midesophageal and short axis), TEE revealed separate origins of the left anterior descending (LAD) artery and the circumflex (Cx) artery from the left coronary sinus of Valsalva (Fig 1). Color Doppler examination showed a laminar flow in the Cx but absent flow in the LAD. Retrospectively, during coronary angiography, the coronary artery catheter was probably inserted into the LAD, which was thought to be the LMCA. Immediately after surgery, new coronary angiography was performed that supported the echocardiographic findings and showed another stenosis of the Cx. Therefore, the patient had to return for an additional bypass.

This case shows the importance of performing a complete intraoperative TEE examination including great attention to details. Coronary angiography remains the gold standard in revealing the anatomy of the coronary arteries and the diagnosis of coronary atherosclerosis. However, TEE is an invaluable diagnostic tool in coronary anomalies, as shown in this case. Several studies show a high correlation

Fig 1. A midesophageal short-axis view of the aorta showing the separate origin of both the Cx and the LAD arteries from the left coronary sinus of Valsalva.

between TEE and coronary angiography in diagnosing coronary artery disease because TEE provides good visualization of the proximal to midsegments of the coronary arteries, particularly when color Doppler is used.¹ A prospective transthoracic echo investigation of the proximal LMCA in young athletes allowed visualization of this artery in 97%.² An issue might be the high frequency of ostial stenoses. Therefore, TEE could be more useful in assessing the origin and the proximal course of the coronary arteries.

TEE allows intraoperative evaluation of global biventricular function, regional wall motion abnormalities, and anatomy and function of heart valves along with information on important hemodynamic issues. In addition, intraoperative echocardiography should routinely include visualization of both coronary artery orifices.

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Intraoperative Thrombosis From a Heparin-Containing Irrigation Solution in a Patient With Heparin-Induced Thrombocytopenia

To the Editor:

Heparin-induced thrombocytopenia (HIT) is a well-recognized syndrome characterized by a decrease in platelet count to less than the lower limit of normal, or greater than 50% from the patient's baseline, after re-exposure to heparin. Two categories of HIT have been delineated: a benign form, type I, and the immune-mediated form known as type II. Type II HIT is associated with an increased risk for potentially catastrophic thrombosis. When thrombosis occurs in the setting of HIT, it is termed "heparin-induced thrombocytopenia with thrombosis."¹