Training & Certification Issues in Perioperative TEE

Jack S. Shanewise, M.D.
Professor & Director, Division of Cardiothoracic Anesthesiology
Columbia University College of Physicians & Surgeons
New York, New York

Over the past fifteen years, several important developments in the area of perioperative transesophageal echocardiography (PTE) have occurred, including increased educational opportunities for anesthesiologists, the development and promulgation of practice guidelines for the performance of PTE, and the development of certification of individuals in PTE.

PTE requires significant skills and knowledge to perform, and there are many educational opportunities available for anesthesiologists in this area. Numerous books, educational video tapes, and CD-ROMs have been produced addressing the topic of PTE. The Society of Cardiovascular Anesthesiologists (SCA) has provided transesophageal echocardiography (TEE) workshops at beginning, intermediate and advanced levels at the annual meeting for over 20 years. The next meeting will be held in Boston, April 28 to May 2, 2012. The annual meeting of the American Society of Anesthesiologists has included a workshop on TEE for several years as well as other sessions addressing PTE. The SCA and the American Society of Echocardiography (ASE) have co-sponsored an extensive post graduate course entitled Comprehensive Review & TEE Update for the past fourteen years. This course has been well received by over 500 participants each year. The faculty included cardiac anesthesiologists, cardiac surgeons and cardiologists. The next course will be held in San Diego, California, February 6-11, 2012. The annual meeting of the ASE will have an intraoperative echocardiography symposium organized by Scott Reeves, current chair of the Intraoperative Council. The next meeting will be in National Harbor, June 30 to July 3, 2013. Several other excellent local meetings on TEE intended primarily for anesthesiologists have been developed over the past few years, so keep your eyes open and participate if you are interested.

Two documents addressing PTE have been published that are worth mentioning and your attention. The first is Practice guidelines for perioperative transesophageal echocardiography, published in 1996. It is a report by the American Society of Anesthesiologists and the Society of Cardiovascular Anesthesiologists Task Force on Transesophageal Echocardiography. This was a group of 11 anesthesiologists and cardiologists and one methodologist that reviewed the literature regarding PTE and developed recommended indications for its use during surgery. The document also addresses the issues of knowledge and training needed to perform PTE. Daniel Thys, now a past president of the SCA and the National Board of Echocardiography (NBE), chaired this group. The SCA and ASA have recently updated these practice guidelines, an effort that once again was led by Daniel Thys. The second document is the ASE/SCA guidelines for performing a comprehensive intraoperative multiplane transesophageal echocardiography examination. This provides recommendations for what comprises a complete, comprehensive intraoperative TEE examination and was endorsed by both the American Society of Echocardiography Council for Intraoperative Echocardiography and
the Society of Cardiovascular Anesthesiologists Task Force for Certification in Perioperative Transesophageal Echocardiography. It was published simultaneously in each society’s official journal in October of 1999.

Certification of physicians specifically for echocardiography began with the creation of the ASEeXAM Parent Committee by the ASE in 1993. This group was chosen and led by Ned Weyman, a prominent cardiologist/echocardiographer at MGH and past president of the ASE, and produced an examination intended primarily for cardiologists with special training in echocardiography. The examination was evaluated extensively after a pilot administration in 1995 and has been offered annually at the ASE meeting to any physician since 1996. After the 1996 administration of the test by the ASE, an independent corporation, ASEeXAM, Inc, was created to separate the certifying entity from the professional society to avoid potential conflicts of interest. The ASEeXAM is now called the Examination of Special Competence in Adult Echocardiography (ASCeXAM).

The SCA initiated a parallel process two years after the ASE with the formation of the Task Force for Certification in Perioperative TEE, led by Sol Aronson. This group’s examination was given in a pilot form in 1997 and has been offered at the SCA annual meeting to any physician since 1998. It is now called the Examination of Special Competence in Advanced Perioperative TEE Exam (advPTEeXAM). Almost 5,000 physicians, mostly anesthesiologists, have taken this exam. In late 1998, the SCA and ASEeXAM, Inc negotiated to create the National Board of Echocardiography (NBE), which now develops and administers both the ASCeXAM and advPTEeXAM. By charter, three of the ten members of the NBE are SCA members and a supermajority of eight is required to change the bylaws, ensuring that the interests of anesthesiologists will be well represented.

I had the privilege of serving on the ASEeXAM Parent Committee and ASEeXAM, Inc board from 1996 to 1998 and the NBE from 1998 until the present time. I was also a member of the SCA Task Force for Certification in Perioperative TEE. I would like to assure you that both ASCeXAM and advPTEeXAM were created through the extraordinary efforts of knowledgeable and dedicated people. I have learned that it is much easier to take a test than to make one from scratch. Both examinations were created with the guidance of the National Board of Medical Examiners (NBME), a fact that ensured the quality and fairness of both tests. Involvement of the NBME is not inexpensive and accounts for most of the cost of producing and administering the tests.

In 2001, the NBE approved a process for true board certification in adult general echocardiography, which requires not only passing of the ASCeXAM, but documentation of adequate training and/or experience in echocardiography. Previously, the NBE had only been able to “certify” that an individual has passed the test. With this process, certification of a physician by the NBE truly means she/he is able and competent to practice echocardiography at a high level. This certification has several subcategories including stress echocardiography and TEE. There is a certification pathway intended for those whose practice is limited to TEE that has been of interest to a few anesthesiologists who spend a large portion of their time devoted to echocardiography, but the vast majority of those seeking certification through the ASCeXAM have been cardiologists. The NBE introduced a similar certification process for anesthesiologists
taking the advPTEeXAM in 2003. The first step in this process was the development of training guidelines for perioperative TEE. Towards this end, the SCA and the ASE formed a joint task force led by Michael Cahalan to develop these guidelines, which were adopted by both the SCA and the ASE in 2002\textsuperscript{5,6}. The NBE referred to these guidelines when creating the requirements for board certification in perioperative TEE. The NBE has certified more than 1,500 individuals since the first perioperative TEE certification committee meeting in February 2004. The certificates issued by the NBE expire after 10 years, and recertification tests have been developed and administered for both the ASCeXAM and the advPTEeXAM allowing practitioners to maintain current certification.

At the 2006 annual meeting of the ASA the House of Delegates passed a resolution that the ASA develop a certification process in Basic PTE, intended for those using TEE for intraoperative monitoring rather than diagnostic purposes during cardiac surgery. The ASA and the NBE have collaborated to create a certification process based on the ASE/SCA Training Guidelines in Perioperative Echocardiography for basic PTE, which was launched last year. An examination in Basic PTE was developed by the NBE with the NBME under the leadership of Stan Shernan and Gregg Hartman and was given for the first time November 8, 2010.

Another major development in PTE testing and certification is that the examinations given by the NBE were moved to a computerized format and given at testing centers around the country starting in 2009. This allows candidates to take the NBE exams at a local testing center rather than having to travel to one central location.

We have watched the level of knowledge in echocardiography among anesthesiologists increase over the years in part as a direct result of the testing and certification in PTE. I am sure it and the Perioperative TEE certification processes will help to keep us focused on the goal we set out on long ago, improving our ability to take care of the most critically ill and complicated patients.


