In October 2009, Madhav Swaminathan, MD and Linda Shore Lesserson, MD wrote an excellent update on the certification process in perioperative transesophageal echocardiography (PTEE). In that update, reference was made to the development of an exam and certification in basic PTEE. Training and certification in basic PTEE are intended for anesthesiologists who seek to use this modality as a non-diagnostic monitor within the customary practice of anesthesia. Several articles have been published noting the utility of intraoperative TEE during non-cardiac surgery and its potential favorable impact on improving patient care and clinical outcome. TEE has been particularly useful in situations of extremis, such as intraoperative cardiac arrest and significant hemodynamic instability, that are unresponsive to conventional therapy. Intraoperative TEE has also been shown to be a useful monitor of cardiac performance in complex non-cardiac surgical procedures involving patients with multiple comorbidities, including those with reduced cardiac reserve due to ventricular dysfunction, coronary artery disease, or significant valvular disease.

The impetus for developing an education and certification process is to enable anesthesiologists to use intraoperative echocardiography in appropriate clinical situations to improve patient care. Many feel that intraoperative TEE should be available as a monitor of cardiac performance, similar to placing a pulmonary artery catheter or an arterial line.

In 2006, the American Society of Anesthesiologists (ASA) House of Delegates approved the development of a basic echocardiography education training program targeted toward non-cardiac anesthesia practitioners interested in using intraoperative TEE for monitoring and basic evaluation of surgical patients. Through the cooperation of the ASA and the Society of Cardiovascular Anesthesiologists (SCA), four basic PTEE courses are now available each year, two of which are held at the same time as the annual meetings of the respective societies.

The establishment of an echocardiography education program in basic PTEE permitted the subsequent development of a certification process to formally recognize anesthesiologists who have completed predefined training requirements. A combined ASE/SCA task force had previously established initial guidelines for basic training in perioperative echocardiography. Recently, the National Board of Echocardiography (NBE) developed a basic intraoperative TEE certification process that requires an applicant to pass either the advanced PTEE exam or the basic PTEE exam (offered for the first time in November 2010). Applicants seeking NBE diplomate status in basic PTEE must demonstrate that they have obtained clinical training or experience in intraoperative TEE through the performance or review of 150 basic PTEE examinations with variations in the requirement for supervision, time frame for completion, and number of CMEs devoted towards TEE education, depending upon the chosen pathway: Supervised Training or Practice Experience.

Now that guidelines for training and certification in basic TEE have been developed, an important question remains regarding the feasibility of making training available to such a large group of practitioners. Approximately 1,500 anesthesia residents graduate every year, and over 40,000 anesthesiologists are members of the ASA. Training the residents alone would require, at minimum, 75,000 intraoperative exams personally performed per class. If intraoperative echocardiography is considered valuable for certain non-cardiac surgical clinical scenarios, then how do we best train those residents and anesthesia staff interested in using it to improve patient care?

Academic and other educational programs that have the capability to provide practical experience should develop programs to educate physicians in basic PTEE. Many programs with well-developed TEE education curriculums already have responsibilities to educate cardiac anesthesia fellows in advanced PTEE and may find it difficult to provide the numbers necessary for resident and staff education. Since June 30, 2009, residents graduating from core anesthesia programs can only complete advanced PTEE certification through ACGME accredited cardiothoracic anesthesia fellowships. Integral to ACGME accreditation is that other education programs don’t impact the goals and objectives of fellowship education.

What about residents and general practitioners who are at centers where there are limited opportunities to obtain the required training and experience? One thought involves developing programs that include TEE simulation to provide scenarios typically seen by the basic perioperative echocardiographer. This would ensure the trainee has seen the most important and common situations in which TEE has been proven useful, such as in cases of hemodynamic disturbance and cardiac arrest. As of now, there isn’t a commercially available TEE simulator that provides both hands-on use of a TEE probe and coordinated imaging of different clinical situations. Web-based education may be another avenue to provide needed review of intraoperative scenarios for both initial certification and continuing education. However, this option fails to provide hands-on use of a TEE probe.

Providing optimal education to those interested in using this important monitoring tool is the real challenge for the future. Many core anesthesia residency programs now incorporate basic PTEE education as part of their four-years of training. Resident conferences, didactic programs and supervised exams are part of a formal PTEE curriculum. This is in coordination with established advanced PTEE education programs that are part of ACGME fellowships. Simulation and web-based education are in the early stages of development. The combination of expanding current education programs and developing new ways to educate and train residents and anesthesia staff that are focused and effective is both an educational opportunity and a dilemma for the future.

References available online at www.onlinejase.com.
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