The Cardiothoracic Anaesthesia Society of South Africa (CASSA) consensus paper for accreditation of anaesthetists in South Africa in perioperative echocardiography

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Abstract

There is a need to develop an accreditation process for South African physicians who practise perioperative echocardiography. International level accreditation will bring legitimacy to the process of training practitioners in perioperative echocardiography and ensure standards of practice. Accreditation will be developed as a two-year process during which candidates with a College Fellowship or MMed degree may register with a supervisor and submit a portfolio of 120 comprehensive echo reports and five complete digital studies for assessment. If these are judged to be of an adequate standard, the candidate will be eligible to sit an exam consisting of a multiple-choice question theory and echo video paper and an oral exam.

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Introduction

Perioperative transoesophageal echocardiography (TEE) has been utilised by anaesthetists for over 25 years and has become an established imaging modality.TEE is recognised as the gold standard intraoperative cardiac monitoring and diagnostic tool in certain cardiac procedures, for example in mitral valve repair and congenital heart surgery.[1] There is evidence that intraoperative TEE provides valuable information which significantly influences clinical management and improves patient outcome.[2] The roles for perioperative echocardiography have been extended to include intensive care[3] and noncardiac surgery.[4] Recently, the Class 1 indications for perioperative echocardiography have broadened. Both the European Association of Cardiothoracic Anaesthesiologists (EACTA)/European Association of Echocardiography (EAE) working group[5] and the American Society of Anesthesiologists (ASA)/Society of Cardiovascular Anesthesiologists (SCA) task force[6] have taken the view that it is now reasonable to insert a TEE probe in every patient who has to undergo cardiac surgery. In addition, the ASA/SCA guidelines suggest that TEE is used in thoracic aorta surgery and in any patient where haemodynamic instability is expected.[7]

Any clinician using TEE in the areas of perioperative medicine has the responsibility of performing at an acceptable international standard. Accreditation is a process that establishes and maintains this standard of practice by defining proficiency and recognising it in the practitioner. Therefore, accreditation has become a powerful driver of the learning process, and brings legitimacy to the process of training. Accreditation in perioperative TEE is not a statutory requirement in South Africa, but demonstration of proficiency will become a desirable, if not essential, prerequisite for practice in all disciplines requiring TEE.

A recent guest editorial in the *Southern African Journal of Anaesthesia and Analgesia*[8] was written to initiate the debate among South African anaesthetists surrounding the topic of accreditation in perioperative echocardiography. Up to this point, the debate has been continued by cardiac anaesthetists, and particularly by members of the Cardiothoracic Anaesthetic Society of South Africa (CASSA), which is a special interest group that falls under the umbrella of the South African Society of Anaesthetists (SASA). South Africa is fortunate in that it is able to follow in the footsteps of organisations in North America and Europe and to benefit from their experience in developing the accreditation process. Importantly, it is able to avoid the pitfalls and controversies that have accompanied the introduction of the accreditation processes in the USA and Great Britain.[9]

Accreditation in the USA

The accreditation process in the USA was initiated in the mid-1990s and consolidated when the SCA developed its first formal examination in Perioperative TEE in 1998.[10] The SCA combined forces with the American Society of Echocardiography (ASE) to establish the National Board of Echocardiography (NBE), which had the responsibility to administer examinations and develop a certification process in

clinical echocardiography. Certification consists of two levels, a basic perioperative TEE exam (Basic PTEeXam®) which is a nondiagnostic, primarily monitoring accreditation and an advanced perioperative TEE exam (Advanced PTEeXam®) which is a diagnostic accreditation. To become board-certified in perioperative echocardiography, the candidate has to have passed the NBE exams, have a state licence to practise medicine, hold current medical board certification and satisfy the NBE that required training pathways have been followed. The current pathway requirements are that the candidate has to complete a one-year fellowship in cardiac anaesthesia. For anaesthetists who qualified before June 2009, experience pathways may be submitted. These consist of a practice experience pathway and a supervised experience pathway. The practice experience pathway requires the candidate to have completed 300 cases over a two-year period, and the supervised pathway requires the candidate to complete 300 cases, 150 of these with the supervisor present. The most contentious issue has been that anaesthetists who pass the exam fail to progress to full certification because of an inability to complete the experience or supervised pathways. These anaesthetists have been awarded testamur status, but are not board certified in perioperative echo. It is a statutory requirement to have the Basic PTEeXam® to use TEE as a monitor, and the Advanced PTEeXam® to use TEE as a diagnostic tool during anaesthesia and in the intensive care unit.

Accreditation in the United Kingdom and Europe

The accreditation process in the United Kingdom was set up as a joint responsibility by the ACTA and the British Society of Echocardiographers (BSA) as a service to practicing echocardiographers. The first written examination was in 2002.[11] Accreditation is neither compulsory nor regulatory, and there is no grandfather clause. The candidate is expected to enrol with a supervisor who has passed the British Society of Echocardiography (BSE) accreditation process. The candidate is expected to submit a logbook of 125 TEE reports, collected over a period of two years. If the candidate holds accreditation in transthoracic echocardiography (TTE), he or she will have to submit only 75 TEE reports. The reports must be accompanied by five complete digital studies. Within these two years, the candidate is expected to pass the written examination which consists of 50 theory and 50 echo loop MCQs. Reaccreditation is awarded every five years on the submission evidence of continuous echocardiography practice and attendance of courses.

Europe followed a similar route with EACTA and EAE developing a TEE examination and accreditation process in 2005. Once again, both an examination and logbook within a two-year period is expected for full accreditation. In 2004, the Japanese Society of Cardiovascular Anesthesiologists launched their first TEE competency examination (www.jscva.org/2009).[12] In the UK, collaboration between the Intensive Care Society (ICS) and BSE has led to similar success in accreditation of TTE in critical care. After careful negotiations and planning over the past few years, the first ICS/BSE accreditation examination is planned for the end of 2012.

Australasia does not have an accreditation process in TEE, but maintains its standards through diplomas and degree qualifications from specific institutions.

South African accreditation

An editorial in *South African Heart*, published in 2010,[13] discussed the expansion of echocardiography from the traditional domain of cardiology into noncardiology specialties, such as anaesthesia and intensive care, and raised questions about the oversight of this expansion, its standardisation and its quality control. In order to begin the process of answering these questions, the initial steps to set up South African accreditation in perioperative echocardiography

Table I: Comparison of accreditation systems in the US and UK/Europe with the South African proposal

	USA	UK/Europe	South African proposal
Compulsory/regulatory	Yes	No	No
Grandfather clause	No	No	No
Supervision	One-year Fellowship	One year Europe and two years UK	Two years
Number of cases required over a two-year period	300	125 (120 Europe) comprehensive reports and five video studies. 75 TEE reports if already qualified in TTE	120 comprehensive reports and five video studies
Timing of exam	Exam first, then reports	Exam first, then reports	Reports first, then exam
Examination	1x1 hour case-orientated block and 3x1 hour MCQ blocks	50 theory and 50 echo loop MCQs	50 theory and 50 echo loop MCQs plus oral exam
Qualification	Basic Perioperative TEE (PTEeXam) Advanced Perioperative TEE (Advanced PTEeXam)	ACTA/BSE TEE accreditation	Certificate in perioperative echocardiography
Reaccreditation	10-year reaccreditation exam and logbook	Five years continuing practice and attendance of courses	Five years maintenance of logbook, CEUs and submission of reports and video studies on request

have been taken. An echocardiography committee has been convened as a subcommittee of CASSA and tasked with the development of the accreditation assessment. The committee has made contact with cardiology interest groups in South Africa, because it is believed that cooperation between the two disciplines of anaesthesia and cardiology is of utmost importance for the success of this venture. It is proposed that these bodies will set up an examination board together. Accreditation will be developed as a two-year process, during which candidates with a College Fellowship or MMed degree will register with a supervisor and submit a portfolio of 120 comprehensive echo reports and five video case studies for assessment. If the reports are judged to be of an adequate standard, the candidate will be eligible to sit the exam paper that will consist of a MCQ theory and a video case study section. If successful, the candidate will be invited to the oral examination, where theoretical knowledge and echo image interpretation will be examined. The experience in the UK, where the candidates write the exam and then submit the logbook over the following two years, has been that some candidates write the exam, but fail to complete the logbook in time, and consequently are not awarded certification. The process of submitting the echo reports is part of the learning process and the success rate of candidates will be improved after two years of study and undergoing the process of having their echo studies critiqued by the supervisor.

The first enrolment of candidates is planned for January 2013. The first accreditation examination is to be held in September 2015.

The standard of the submission of reports and echo loops and the standard of the examination should be of an international level, equivalent to the ACTA/BSE accreditation process. In order to ensure this standard, an external examiner will be appointed from the ACTA/BSE accreditation committee. The candidates will be expected to have a thorough knowledge of the science of ultrasound, safety issues and contraindications to TOE, as well as both basic and advanced transthoracic and transoesophageal ultrasound assessment of the heart in the perioperative setting (see Table II). Prospective candidates will be encouraged to make use of printed textbooks, digital material and distance learning courses to ensure a comprehensive knowledge of echocardiography. Regional discussion and local echo interest groups are advised as a further aide to gaining experience and furthering the understanding of perioperative echo.

Reaccreditation will be required every five years. It will consist of maintenance of a logbook, collection of continuing education units via attendance of refresher courses and congresses, and submission of comprehensive echo reports and echo case studies only on request of the official accreditation body.

Conclusion

Accreditation is a necessary process to ensure proper standardised training in perioperative echocardiography and to maintain international standards of practice. The process is well under way in South Africa and the first examination is expected to take place in September 2015.

Table II: Examination syllabus for the Certificate in Perioperative Echocardiography[14]

- Indications for perioperative echocardiography
- Physics of ultrasound
- Knobology
- Safety and contraindications to transoesophageal echo
- Reporting an ultrasound exam
- Comprehensive ultrasound examination
- Left and right ventricles
- Ascending and descending thoracic aorta
- Mitral valve
- Aortic valve
- Tricuspid valve, pulmonary valve and pulmonary artery
- Assessment of mitral valve repair
- Cardiac masses and pericardial disease
- Basics of congenital heart disease in adult patients
- Echocardiography during hemodynamic instability and emergency care
- Echo in the catheter laboratory

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