

Certification in Screening Echocardiography

1. Introduction and aims

Screening echocardiography

1.1. A standard transthoracic study is necessarily comprehensive and detailed in order to minimise the risk of failing to detect even minor abnormalities. It therefore takes about 40 minutes to perform and report. Furthermore there is usually a delay between the request and the main echocardiography department being able to despatch a sonographer to perform the study even for an urgent case.

1.2. However physicians caring for acutely ill patients often need an echocardiogram with little or no delay. They may also have simple clinical questions which involve ruling out major pathology e.g. pericardial tamponade severe LV impairment, severe valve thickening or regurgitation and RV dilatation.

1.3. A screening echocardiogram is designed to rule out major pathology. An abnormal screening echocardiogram necessitates a standard study, but first-line management can continue whilst this is being arranged.

1.4. Screening echocardiography may be appropriate for intensivists, emergency physicians and specialists in acute medicine.

Certification in screening echocardiography

1.5. The BSE ratified a process for screening echocardiography in 2005 (www.bsecho.org). Unlike adult accreditation it is not organised nationally, but is controlled locally by BSE-accredited echocardiography departments.

1.6. The syllabus is divided into simple modules covering instrumentation and views, the LV, the RV, the pericardium and valves. The operator is expected to recognise an abnormality in any of these structures. Further quantification is not expected. The aim is to recognise when a standard echocardiogram is necessary

1.7. Indications for referral for a standard echocardiogram are:

- Pericardial effusion
- Dilated and poorly functioning RV
- Impaired LV systolic function
- More than mild valve thickening or more than trivial regurgitation
- Unstable haemodynamic state not explained by clinical and screening echocardiographic findings

1.8. The process consists of:

- Training during which competencies are assessed and signed off
- Formal assessment in examination conditions using 10 cases
- Monitoring using quality control, minimum activity and CME

2. Training

2.1. The candidate needs to check that there is a fully accredited echocardiographer who is entitled to teach and train.

2.2. Membership of the BSE is encouraged but not essential.

2.3. The trainee should learn basic views (see appendix) and interpretation directly supervised which would typically require about 30 scans. The trainee needs to learn how to write proper reports, store, review and download examinations.

2.4. Once competent to obtain and interpret basic views the trainee need to obtain at least 50 cases unsupervised, discussing each case with their supervisor or a competent assessor after writing a preliminary report. This is to maintain quality assurance and to aid the trainee to gather independence and confidence, as well as recognition of findings that need a full study and referral. Each discussed case should then be written as a final report and kept in a logbook. This should not take longer than 12 months.

2.5 The trainee is expected to attend teaching sessions and learn interpretation from the teaching set of cases available on the digital archive.

3. Assessment

3.1. Practical competencies will be signed off by the trainer (appendix 1)

3.2. Log-book. There will be no fixed number for certification but all reports will be retained as a demonstration of the cases performed. It is expected that a minimum of 50 independent cases-following the initial training phase will usually be available

3.3. A written examination consisting of 10 full cases will be reported as for normal clinical cases over a one hour period. This is set and marked by an examiner who is independent of the trainer.

3.4 The trainee is expected to report every major abnormality correctly. A minor error (e.g. reporting a normal LV as mildly impaired) is not a reason to fail but systematic errors should lead to further training appropriately focused with a repeat examination usually in 2 months.

3.5. The successful trainee is issued with a certificate and can issue screening reports.

4. Monitoring

4.1 The certificated echocardiographer should not operate in isolation and remains part of the whole echocardiographic process involving the main cardiac department and the head of ITU echocardiography

4.2 Studies will be available for discussion at the weekly departmental meeting

4.3 Feedback will be offered after standard echocardiography

4.4 A minimum of one study per week should be performed

4.5 The successful trainee will be encouraged to train for BSE adult accreditation

4.6 Recertification will be required by passing the 10 case examination every 5 years

5. Relationship with other processes

5.1. Focused or point-of-care echocardiography is increasingly used to improve access to a working diagnosis in acutely ill patients (Ashrafian, 2004; Fedson, 2003; Salustri, 2002; Spurney, 2005).

5.2 Basic training processes such as the Duke University LEAP programme have been shown to teach medical students useful skills (Alexander, 2005). The number of studies have been shown to be moderately related to competency (Nair, 2006) and at least 20 studies are needed to recognise an abnormal LV (Akinboye, 1995) suggesting that the original BSE training set of 80 screening studies to cover the LV, RV, pericardium and valves may be reasonable.

5.3 A statement on echocardiography in emergency medicine was made by the ASE and ACC (Stewart, 1999) and screening or focused echocardiography is already part of the Australian accreditation for emergency physicians (www.acem.org.au/open/documents/ultrasonography.htm) and the American College of Emergency Physicians accreditation (www.acep.org/library/pdf/ultrasound_guidelines.pdf).

5.4 Raoul Breitzkreutz in Germany (Breitzkreutz, 2007) has developed a focused transthoracic echocardiographic algorithm which forms part of the ALS resuscitation algorithm in Germany and courses have been set up. Equally Eric Sloth (Jensen, 2004) (www.fate-protocol.com) from Denmark has published a focused transthoracic echocardiographic examination and has been running courses and educational sessions worldwide.

5.5 Physicians certificated in screening echocardiography by the GSTT process will be encouraged to train further towards full BSE accreditation in adult transthoracic and transoesophageal echocardiography.

6. References

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