Review CD-ROM 1:
(Nota: this review is for the first version of this program)

2D imaging and Doppler of the normal heart.

Practical Echocardiography for the Neonatologist. Nick Evans and Girvan Malcolm. Australia: RPA.

The heart is a deceptively simple structure. Its main function is to power the circulation and it achieves this with only two pumps and only four valves. Most diagrammatic representations of the heart underestimate its true anatomical complexity so that the first contact of the novice with the complex three dimensional anatomy is intimidating. Even the great arteries, which are easy to depict diagrammatically, have a complex changing relationship with each other as they curve through the upper mediastinum. All these problems are compounded by our terminology because the “right” ventricle is in fact anterior to the “left” ventricle and the “left” atrium is posterior.

Neonatologists are interested in echocardiography because it allows assessment of the ductus in prematurity, it provides functional haemodynamic assessment, and it offers recognition or exclusion of structural heart disease although exclusion with confidence often requires expert assessment. The foundation of expertise in echocardiography is a clear understanding of the three dimensional anatomy. This is difficult to teach and time consuming to learn.

This CD provides the neonatologist with a superb introduction to three dimensional cardiovascular anatomy. It then links the anatomical arrangement to the standard echocardiographic views and illustrates the basics of Doppler and colour Doppler assessment of blood flow. The video images are clear and are provided side by side with anatomical diagrams illustrating the plane of the cross sectional image or the orientation of the Doppler probe. This CD will be of interest and of value to all those first learning echocardiography, including technicians and trainee paediatric cardiologists, and not just neonatologists.

Obviously, recognition of normality requires familiarity with abnormality and this is due to be presented in a later CD. If that matches the quality of this first CD then between them they will provide a valuable introduction to echocardioicographic assessment of the neonate.

Dr Chris Wren
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Review CD-ROM 2:
(Nota: this review is for the first version of this program)

Structural and transitional haemodynamic problems in the newborn.

Practical Echocardiography for the Neonatologist. Nick Evans and Girvan Malcolm. Royal Prince Alfred Hospital, Sydney, Australia.

This second CD, covering structural and transitional haemodynamic problems in the newborn, is the companion volume to part 1, which dealt with normal 2D imaging and Doppler. In this latest volume, the authors deal comprehensively with the use of echocardiography in the diagnosis and assessment of preterm patent ductus arteriosus, pulmonary hypertension, and low output states. They also provide an introduction to recognition of structural cardiovascular malformations.

The CD is divided into six sections that deal, respectively, with the ductus arteriosus, atrial shunting, measurement of flow and ventricular output, assessment of ventricular function and hypertrophy, measurement of pulmonary artery pressure, and an introductory description of common types of cardiovascular malformation. Images are mainly provided as a mixture of text and video clips.

The first section on patent ductus arteriosus is excellent, providing many examples of the diagnosis and assessment of functional importance. The section on measurement of pulmonary artery pressure provides a valuable insight into one of the more important applications of cardiac ultrasound in neonatology. The sections on atrial shunting, flow measurement, and assessment of ventricular function cover applications of cardiac ultrasound that are likely to be less familiar to most neonatologists and will require more assimilation. The final section, on structural congenital heart disease, is really only an introduction to what is obviously a very large subject. The authors stress that suspicion or confirmation of a cardiovascular malformation should lead directly to a cardiological referral and they highlight the difficulty in exclusion or confirmation of some diagnoses, particularly total anomalous pulmonary venous connection and coarctation of the aorta. Some of the examples of cardiovascular malformations are of rather disappointing quality and some of the more difficult problems, such as coarctation of the aorta, are dealt with only very briefly. There is also possible confusion between coarctation of the aorta and interruption, which cardiologists regard as different abnormalities. The self assessment section offers the opportunity of testing your skills in recognition of various examples but there is no leeway in terminology. For example, TAPVC (connection) is counted as a wrong answer for TAPVD (total anomalous pulmonary venous “drainage”).

Overall this is a valuable guide to the way in which neonatologists should use echocardiography and what they should expect to be able to achieve. I think it is likely to be of more use than a textbook as echocardiography is mainly about interpretation of moving images. Details of both CDs are available at www.cs.nsw.gov.au/ropa/neonatal/default.htm.

Dr Chris Wren
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