Book Review

Diagnostic Breast Imaging: Mammography, Sonography, Magnetic Resonance Imaging, and Interventional Procedures, 3rd edition
By Sylvia H Heywang-Koebrunner, Ingrid Schreer and Susan Barter
Stuttgart: Thieme, 2014
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I was delighted to be asked to review this book – not least because it means I get to add to my collection the 3rd edition update of a book that has been on my shelf ever since I first started imaging the breast. If I could only have one breast imaging book – this would be it. The authors write in an eloquent and accessible manner, and the quality of their supporting diagrams and clinical images is high.

I have concentrated on reviewing the sonographic content as being of most relevance to the *Ultrasound* audience – I carefully did not say of most *interest* as the rest of the book is just as interesting to anyone who undertakes breast sonography.

Section 1 of the book 'Methods' contains Chapter 4, which is dedicated to sonography. This chapter starts off explaining the main clinical applications of breast ultrasound, noting its importance in the diagnosis of cysts, differentiation of solid masses, assessment of young women and evaluation of the axilla. The interdependent relationship between X-ray mammography and ultrasound imaging in the detection of breast cancer is described.

Next, the authors cover ultrasound 'Equipment Requirements' and 'Examination Technique'. This is the 'science and technology' bit where the authors have done an excellent job of making the 'physics' of breast ultrasound accessible to all. It's not a detailed scientific text, and there is

some repetition, but it does cover basic principles in enough detail to give the novice practitioner an appreciation of what physical parameters and operator-dependent controls and techniques are important for optimising image quality to give good diagnostic performance. Compound and harmonic imaging are covered alongside the (limited) role of Doppler. Elastography is mentioned, but there is more on this in Chapter 6 'Emerging technologies in breast imaging' alongside mention of 3D and automated whole breast ultrasound; one omission is no mention of emergent contrast enhanced ultrasound techniques.

The second half of Chapter 4 describes and illustrates the typical sonographic features of the normal breast and axilla and a range of characteristic benign and malignant appearances. The principles of image interpretation and differential diagnosis using sonographic criteria are explained with a useful summary table provided. The authors carefully and critically review published case series and offer cautionary examples of 'overlapping' characteristics, advocating a multifactorial approach to patient management, where ultrasound findings are considered alongside other available information, such as patient age and family history and within the context of triple assessment (clinical examination, alternate imaging i.e. mammography, and tissue sampling).

Ultrasound-guided interventional techniques are covered in Chapters 7 (biopsy) and 8 (localisation) where the authors critically review alternative procedures and clinical indications, before describing and illustrating how to perform the procedures under image guidance. These descriptions are not extended step-by-step guides and assume a working knowledge of intervention device operation. Sample handling, documentation and interpretation of the histopathological result are included.

The sonographic appearances of a wide range of normal, variant, benign and malignant conditions are described and illustrated in Section 2 of the book 'Appearances'. In Chapters 9–22, the authors have adopted a holistic approach, integrating pathophysiological definitions, aetiology, clinical evidence, imaging and histological indications and findings and significance for patient management. Of particular interest to sonographers, lymph nodes (ultrasound technique and image interpretation) are covered in Chapter 17, implants in Chapter 20 and the male breast in Chapter 22. The final section of the book contains two chapters which cover (the role of ultrasound for) breast screening and assessment of mammography screen-detected abnormalities.

The publishers claim this is *a systematic and pragmatic guide* – I agree. The authors offer a range of personal opinion and insight borne of many years' practical experience, pointing out the relative merits of their advice from both practitioner and patient perspectives. As I said at the outset, if I could only have one breast imaging book, this would be my first choice.

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