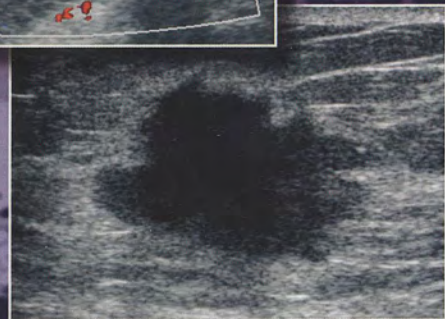
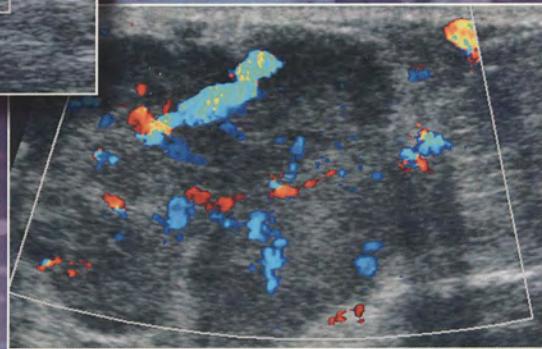
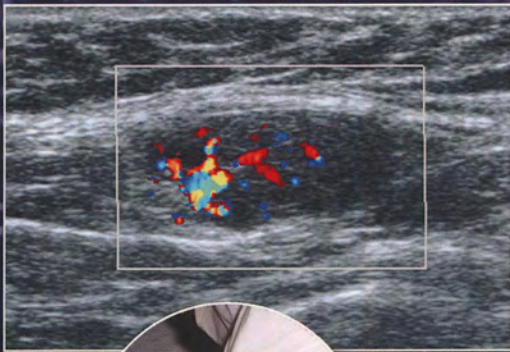


Breast

ULTRASOUND

HOW, WHY AND WHEN

Edited by
Anne-Marie Dixon



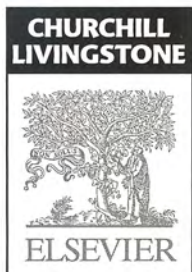
CHURCHILL
LIVINGSTONE
ELSEVIER

Breast Ultrasound

HOW, WHY and WHEN

Anne-Marie Dixon MHS_c PGCHEP DMU DCR(R)

Senior Teacher, University of Bradford, Bradford, UK



EDINBURGH LONDON NEW YORK OXFORD PHILADELPHIA ST LOUIS SYDNEY TORONTO 2008

© 2007, Elsevier Limited. All rights reserved.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior permission of the Publishers. Permissions may be sought directly from Elsevier's Health Sciences Rights Department, 1600 John F. Kennedy Boulevard, Suite 1800, Philadelphia, PA 19103-2899, USA: phone: (+1) 215 239 3804; fax: (+1) 215 239 3805; or, e-mail: healthpermissions@elsevier.com. You may also complete your request on-line via the Elsevier homepage (<http://www.elsevier.com>), by selecting 'Support and contact' and then 'Copyright and Permission'.

First published 2008

ISBN-13: 978 0 443 10076 5

British Library Cataloguing in Publication Data

A catalogue record for this book is available from the British Library.

Library of Congress Cataloging in Publication Data

A catalog record for this book is available from the Library of Congress.

Notice

Knowledge and best practice in this field are constantly changing. As new research and experience broaden our knowledge, changes in practice, treatment and drug therapy may become necessary or appropriate. Readers are advised to check the most current information provided (i) on procedures featured or (ii) by the manufacturer of each product to be administered, to verify the recommended dose or formula, the method and duration of administration, and contraindications. It is the responsibility of the practitioner, relying on their own experience and knowledge of the patient, to make diagnoses, to determine dosages and the best treatment for each individual patient, and to take all appropriate safety precautions. To the fullest extent of the law, neither the Publisher nor the Editor assumes any liability for any injury and/or damage to persons or property arising out or related to any use of the material contained in this book.

The Publisher

Printed and bound in the United Kingdom

Transferred to Digital Print 2011

Working together to grow
libraries in developing countries

www.elsevier.com | www.bookaid.org | www.sabre.org

ELSEVIER BOOK AID International Sabre Foundation

ELSEVIER

your source for books,
journals and multimedia
in the health sciences

www.elsevierhealth.com

The
publisher's
policy is to use
paper manufactured
from sustainable forests

Contents

List of contributors	vii
Acknowledgements	viii
Preface	ix
List of abbreviations	x

1. Introduction 1

Anne-Marie Dixon

2. Breast cancer, diagnosis and imaging: a historical perspective 7

Gillian R. Clough

3. Principles of diagnostic medical ultrasound 19

Heather Venables

4. Equipment for breast ultrasound 35

Heather Venables

5. Breast anatomy and normal ultrasound appearances 59

Mike Stocksley and Anne-Marie Dixon

6. Ultrasound examination technique 81

Anne-Marie Dixon

7. Ultrasound image interpretation, recording and reporting 109

Anne-Marie Dixon

8. Benign breast disease 139

David S. Enion and Anne-Marie Dixon

9. Malignant breast disease 163

Anne-Marie Dixon

10. Ultrasound of the augmented breast 183

Anne-Marie Dixon

11. Breast disease in the male patient 197

Caroline Begaj

12. Ultrasound-guided interventional techniques 207

Anne-Marie Dixon

14. Breast imaging service provision, education and training 259

Jacqui Lee and Anne-Marie Dixon

13. Additional diagnostic imaging techniques 239

Anne-Marie Dixon

Glossary 267

Index 275

List of contributors

Caroline Begaj DMU DCR(R)

Clinical Specialist in Ultrasound, Bradford Teaching Hospitals Foundation NHS Trust, St Lukes Hospital Bradford, UK

Gillian R. Clough MHSc PGCHEP DCR(R)

University Teacher, University of Bradford, Bradford, UK

Anne-Marie Dixon MHSc PGCHEP DMU DCR(R)

Senior Teacher, Division of Radiography, University of Bradford, Bradford, UK

David S. Enion MB ChB FRCS(G) DMRD FRCR

Consultant Radiologist, Royal Blackburn Hospital, Blackburn, UK

Jacqui Lee MEd BEd (Hons) DMU DCR(R)

Lead Sonographer, Eccleshill NHS Treatment Centre, Bradford, UK

Mike Stocksley MSc Cert Ed MDCR DMU

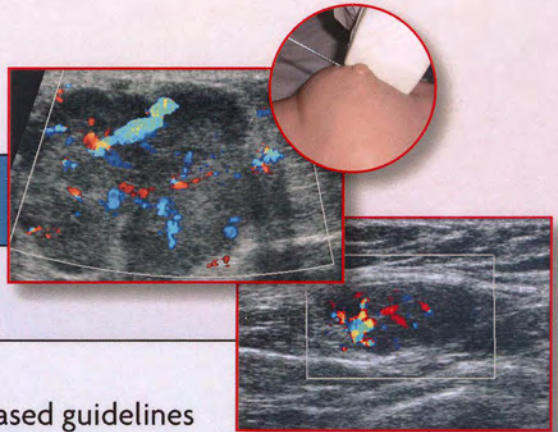
Course Leader in Clinical Ultrasound, Department of Allied Health Professions, Faculty of Health and Social Care, London South Bank University, London, UK

Heather Venables BEd (Hons) DMU DCR(R)

Senior Lecturer (Ultrasound), Faculty of Education Health and Sciences, University of Derby, Derby, UK

Breast ULTRASOUND

HOW, WHY AND WHEN



This is a wide-ranging book reflecting evidence-based guidelines for breast ultrasound practice. It provides a hands-on guide for all practitioners working in the field of breast ultrasound. Highly illustrated, it serves as a comprehensive guide for the breast imaging specialist and the multi-disciplinary breast care team.

Key features

- Step-by-step guide to performing, interpreting and reporting breast ultrasound examinations
- Extensive coverage of the underlying principles and practice of breast ultrasound
- Holistic chapter on ultrasound of the male breast
- Application-specific physics and equipment chapters
- Experienced editor and contributing team with current experience in clinical practice and educational delivery.

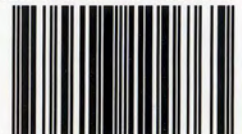
This product is appropriate for:

- imaging
- ultrasound
- radiography

CHURCHILL
LIVINGSTONE
ELSEVIER

www.elsevierhealth.com

ISBN 978-0-443-10076-5



9780443100765