

Royal College of Radiologists
BREAST GROUP
Annual Scientific Meeting 2005

Monday 31st October -
Tuesday 1st November 2005

East Midlands Conference Centre
Nottingham

This course has been
approved by the RCR for
9 category 1 CPD credits

RCR
BREAST GROUP

FINAL PROGRAMME AND ABSTRACT BOOK

CONTENTS

Welcome Address	...	...	...	...	...	2
General Information	...	...	...	...	...	3
Scientific Programme						
Oral Presentations	...	...	...	...	...	4-6
Poster Presentations	...	...	...	...	...	7-8
List of Exhibitors	...	...	...	...	...	9
Abstracts of Oral Presentations	...	...	...	...	...	10-15
Abstracts of Poster Presentations	...	...	...	...	...	16-23
Author Index	...	...	...	...	...	24

WELCOME ADDRESS

Dear Colleague,

We are pleased to welcome you to the *Royal College of Radiologists Breast Group Annual Scientific Meeting* at The East Midlands Conference Centre in Nottingham. This purpose built conference venue is located in the campus of Nottingham University and offers state of the art facilities for our event.

The Scientific Programme which follows includes many of the topics you have suggested. There are contributions from well known figures in the world of breast disease and we are especially pleased to welcome Professor James Brenner from San Francisco, California who will be giving presentations on *Controversies in Core Biopsy Result Management* and *The Imaging Perspective on Implants*. We also have a new "Question Time" Session so that you can put your most pressing questions to a panel of experts, which should generate lots of debate and discussion.

Please find enclosed the Final Programme and Abstracts. The course has been approved by the Royal College of Radiologists for 9 category 1 (external) CPD credits. Delegates wishing to claim accreditation should sign the CPD Register each morning. Certificates of Attendance will be available to delegates at the end of the meeting.

We hope that you will enjoy the meeting.



Dr Peter Britton
Chair, RCR Breast Group

Organising Committee:

Dr Peter Britton (Chair)
Dr Erika Denton (Vice-Chair)
Dr Sue Barter (Secretary)
Dr Simon Daniell (Treasurer)
Dr Janet Litherland (Meetings Secretary)

Secretariat:

Hampton Medical Conferences Ltd.,
113-119 High Street, Hampton Hill
Middlesex, TW12 1NJ

Tel: 020 8979 8300
Fax: 020 8979 6700
email: hmc@hamptonmedical.com
www.hamptonmedical.com

GENERAL INFORMATION

Registration

Registration will take place in the main entrance area of the East Midlands Conference Centre (EMCC), on Monday 30th October from 09.00 hrs – 09.55 hrs. Coffee will be served during registration. Your registration fee includes access to all scientific sessions, conference materials, lunches, teas and coffees.

Oral Presentations

All oral presentations will take place in the main Lecture Theatre at the Conference Centre.

Poster Presentations

Posters are located in the Exhibition Suite and will be displayed for the duration of the meeting. Poster presenters are requested to be available for discussion next to their posters during as many refreshment breaks as possible.

Lunches and Tea/Coffee

Lunches, teas and coffees will be served in the Exhibition Suite.

Trade Exhibition

The organisers are pleased to welcome companies with an interest in the field of breast disease. Delegates are encouraged to visit the exhibition stands located in the Exhibition Suite.

CPD Accreditation

The meeting has been awarded 9 Category 1 CPD Credits (Monday 31st October - 5 credits, Tuesday 1st November - 4 credits). Delegates requiring accreditation should sign the CPD Attendance Register on both days. Certificates of Attendance will be available for collection on Tuesday 1st November from the Conference Registration Desk.

Annual General Meeting

Members of the RCR Breast Group are invited to attend the Annual General Meeting, which will be held in the main Lecture Theatre, after Session 3 on Monday 31st October at 16.45 hrs.

Coaching

A complimentary coaching service has been organised to transport delegates staying at the three conference hotels to and from the EMCC. Please refer to the Coaching Form in your delegate pack for details on timings and also coaching signs by the Conference Registration Desk.

Secretariat

The conference secretariat staff will be available throughout the meeting to assist you with any queries. They will be located at the Conference Registration Desk, in the main entrance area of the EMCC.

SCIENTIFIC PROGRAMME – MONDAY 31ST OCTOBER 2005

MONDAY 31ST OCTOBER 2005

09.00-09.55 COFFEE & REGISTRATION

09.55-10.00 Introduction and Welcome **Dr Peter Britton**
Chair, RCR Breast Group

SESSION 1 GOING CR/DIGITAL – WHAT YOU NEED TO KNOW

Chair: Dr Peter Britton (Cambridge)

10.00-10.20 1.1 The ins and outs of CR Dr Erika Denton (Norwich)

10.20-10.40 1.2 The ups and downs of full field digital mammography: lessons from the pilot sites Dr Matthew Wallis (Coventry)

10.40-11.00 1.3 The implications for QA Dr Malcolm Ramsdale (Guildford)

11.00-11.30 1.4 New technologies; the changing face of the NHSBSP? Dr Robin Wilson (Nottingham)

11.30-12.00 Discussion

12.00-13.30 LUNCH & POSTER VIEWING

SESSION 2 KEYNOTE SPEECH

Chair: Dr Matthew Wallis (Coventry)

13.30-14.15 2.1 Controversies in core biopsy result management Professor R. James Brenner (San Francisco, USA)

14.15-14.30 2.2 Report from MARIBS Dr Ruth Warren (Cambridge)

14.30-14.45 2.3 Report from the Age Trial Dr Andy Evans (Nottingham)

14.45-15.00 Discussion of practical implications

15.00-15.30 TEA & POSTER VIEWING

SESSION 3 QUESTION TIME

Chair: Dr Erika Denton (Norwich)

15.30-16.45 Panel:
Dr Lis Kutt (Bristol)
Dr Tony Maxwell (Bolton)
Dr Andy Evans (Nottingham)

16.45-17.45 **ANNUAL GENERAL MEETING**

20.00hrs Conference Reception and Dinner, Exhibition Suite, EMCC

TUESDAY 1ST NOVEMBER 2005

SESSION 4 STAGING & MANAGEMENT OF THE AXILLA

Chair: Dr Helen Burrell

09.00-09.25	4.1	Imaging the axilla pre-operatively	Dr Eleanor Cornford (Nottingham)
09.25-09.50	4.2	Primary surgical management of the axilla	Professor Arnie Purushotham (London)
09.50-10.00		Discussion	
10.00-10.20	4.3	Imaging axillary complications	Dr Bernadette Carrington (Manchester)
10.20-10.40	4.4	Oncological management of the axilla	Dr Adrian Harnett (Norwich)
10.40-11.00		Discussion	

11.00-11.40 *COFFEE AND POSTER VIEWING*

SESSION 5 SCIENTIFIC SESSION

Chair: Dr Sue Barter (Cambridge)

11.40-11.45		Update on RCR Website	Dr Chris Flowers (Swansea)
11.45-12.45		Proffered Papers	
11.45-11.55	5.1	Interval breast cancers: prognostic features and survival by subtype and time since screening GJR Porter , AJ Evans, HC Burrell, AHS Lee, IO Ellis, J Chakrabarti (Nottingham)	
11.55-12.05	5.2	Ductal Carcinoma In Situ (DCIS) – The role of prognostic indicators in informing treatment and reducing local recurrence M Wallis , K Clements, J Macartney, G Lawrence, M Lee, M Wheaton, O Kearins, H Bishop (Edgbaston)	
12.05-12.15	5.3	Minimal change cancer – a new teaching tool HM Dobson (Glasgow)	
12.15-12.25	5.4	Can we refine our use of MRI in the management of breast cancer patients undergoing neoadjuvant chemotherapy? BJG Dall , KN Franks, S Kumar, DJ Dodwell, TP Perren (Leeds)	
12.25-12.35	5.5	Patients with inconclusive triple assessment; is MRI the answer? I Jolley , BJB Dall	
12.35-12.45	5.6	Preliminary results from the West Midlands Breast Screening Histories Project 1988-2001 M Wallis , G Lawrence, E O’Sullivan, O Kaerins, N Tappenden (Coventry)	
12.45-14.00		<i>LUNCH & POSTER VIEWING</i>	

SESSION 6

BREAST PROSTHESES

Chair: Dr Janet Litherland (Glasgow)

14.00-14.30	6.1	The current surgical perspective on implants	Mrs Eva Weiler-Mithoff (Glasgow)
14.30-15.15	6.2	The imaging perspective on implants	Professor R. James Brenner (San Francisco, USA)
15.15-15.30		Discussion	
15.30-15.40		Presentation of prizes & closing remarks	Dr Erika Denton (Norwich)
15.40		TEA & Close of Meeting	

POSTER PRESENTATIONS

- P.1 ***Agfa embrace CR mammography – the South Durham experience***
RG Henderson, E Parker (Darlington)
- P.2 ***Fuss free follow up***
AC Havard, JL Smith (Milton Keynes)
- P.3 ***The influence of mammographic background pattern on the pathological features, radiological features and survival in screened women***
GJR Porter, AJ Evans, LJ Hamilton, EJ Cornford, JJ James, HC Burrell, ARW Wilson, AHS Lee J Chakrabarti (Nottingham)
- P.4 ***Improved accuracy of wire guided breast surgery with supplementary ultrasound***
S Kolpattil, MA Crotch-Harvey (Macclesfield)
- P.5 ***Atypical and malignant radial scars of the breast – how accurate is preoperative core biopsy?***
AJ Maxwell (Bolton)
- P.6 ***An audit of patients satisfaction following the introduction of advanced practitioner led assessment clinics***
C Bradley, RL Tetlow, RL Chitnis, AE Hubbard (Cottingham)
- P.7 ***Do lesions with indeterminate (B3 or B4) core biopsy result require surgical excision?***
C Flis, M Michell, N Dutt (London)
- P.8 ***Mammographic features and needle biopsy results of surgically excised screen detected papillary lesions***
C Flis, M Michell, N Dutt (London)
- P.9 ***Improving pre-operative diagnosis – a historical perspective***
HM Dobson (Glasgow)
- P.10 ***Clinical experience with MRI-guided breast biopsy***
S Bacon, DD Manuel, BJG Dall (Leeds)
- P.11 ***Role of core biopsy in the management of radial scars and complex sclerosing lesions: do all lesions need to be excised?***
JA Rink, KB Muhammed, C Holgate, JR Steel, PA Jones, RM Watkins (Plymouth)
- P.12 ***New ultrasound scanning modalities: breast cancer size measurement and comparison with histology***
AM Gilchrist, LM Smart, ME Smith, JS Walsh, TN Doig, JF Loane (Edinburgh)
- P.13 ***Comparison of available mammotome and 14g core biopsy site markers - ease of use, cost, ultrasound visibility and size of MRI susceptibility artefact at 1.5 and 3.0 tesla***
AE Hubbard, L Turnbull (Hull)
- P.14 ***The use of Vacuum Assisted Mammotomy (VAM) in the management of indeterminate breast lesions***
R Sinnatamby, PD Britton, SE Pinder(Cambridge)
- P.15 ***Individual film reading performance figures in screening: The Welsh experience***
E Edwards, D Brook, K Gower-Thomas (Cardiff)
- P.16 ***Radiographer led stereo core biopsy – an audit of the effect on screening assessment clinics***
T Edmunds, L Edwards, K Gower-Thomas (Cardiff)

POSTER PRESENTATIONS (cont.)

- P.17 ***Diagnosis of axillary lymph node metastases by ultrasound-guided fine needle aspirate cytology in primary operable breast cancer***
D Lewis, C Flis, M Michell, N Dutt (London)
- P.18 ***¹⁸F-labelled fluoro-2-deoxy-D-glucose Positron Emission Tomography/Computed Tomography (FDG-PET/CT) in breast cancer – a pictorial review***
ID Lyburn, RJ Chambers, RAR Green, TD Mills, JS Green, BS Sanghera, WL Wong (Cheltenham)
- P.19 ***Are the resources associated with mammotome breast biopsy well spent?***
J Simpson, J Liston (Leeds)
- P.20 ***Review of interval breast cancers presenting in women who participated in the Age Extension (65-69yrs) Screening Pilot***
DD Manuel, J Liston (Leeds)
- P.21 ***Diagnosis of silicone breast implants ruptures by MR imaging: a pictorial review***
V Tang, A Jain (Manchester)
- P.22 ***Has two-view mammography decreased the number of interval breast cancers in Wales?***
K Gower-Thomas, G Osborn, E Edwards, J Evans, G Stevens, J Pollitt (Cardiff)
- P.23 ***CAD prompt size and reader behaviour – a UK screening programme evaluation***
FJ Gilbert, SM Astley, CRM Boggis, MGC Gillian, PM Griffiths, SW Duffy, MA McGee (Aberdeen)
- P.24 ***Is it possible to predict which microcalcification may be adequately biopsied by 14g core rather than VACB?***
A McCall, C Cordiner, H Dobson, J Litherland (Glasgow)
- P.25 ***Ultrasound staging of the axilla in primary breast cancer***
A Aylwin, N Wakeham, N Barrett, S Comitis, S McLaggan, K Satchithananda, R Williamson, N Zaman, W Svensson (Epping)
- P.26 ***Audit of male breast disease: an 8 year retrospective review of imaging and pathological findings***
S McLaggan, A Aylwin, N Barrett, S Comitis, W Svensson, N Zaman, K Satchithananda (London)
- P.27 ***MRI guided 10g vacuum-assisted biopsy of the breast: experience with the Vacora biopsy system***
W Teh, V Patel, N Kandasamy (Harrow)
- P.28 ***Accurate pre operative planning of axillary surgery in breast cancer patients by combining ultrasound with patent blue dye sentinel node biopsy***
J Aitken, I Anwar, WP Whitear, A Tate, T Archer, C Mortimer (Ipswich)
- P.29 ***A 'package' to facilitate the implementation of the NICE guidelines for familial breast cancer***
D Dalgliesh, D Goddard, P McLarnon (Bath)

LIST OF EXHIBITORS

The Royal College of Radiologists Breast Group are grateful to the following companies for their support:

Agfa Gevaert Ltd
27 Great West Road
Brentford
Middlesex
TW8 9AX

Johnson & Johnson Medical Ltd
Ethicon Endo-Surgery, Breast Care
The Braccans, London Road
Bracknell
Berkshire
RG12 2AT

QADOS
Unit 5, Lakeside Business Park
Swan Lake,
Sandhurst,
Berkshire
GU47 9DN

Bard Limited
Forest House,
Tilgate Forest Business Park
Brighton Road, Crawley
West Sussex
RH11 9BP

Kimal plc
Arundel Road
Uxbridge
Middlesex
UB8 2SA

Sectra Limited
Witan Court
272 Witan Gate West
Milton Keynes
MK9 1EJ

Blackwell's Exhibitions
Beaver House
Hythe Bridge Street
Oxford
OX1 2ET

K_Med
31 New Cavendish Street
London
W1G 9TT

Southern Scientific
Scientific House
Rectory Farm Road
Lancing
West Sussex
BN15 0DP

BVM Medical Ltd.
BVM House
Trinity Lane
Hinckley
Leicestershire
LE10 0BL

Mana-Tech Ltd
Studio 2,
Waterside Court
Third Avenue
Burton-on-Trent
DE14 2WQ

Toshiba Medical Systems Ltd
Manor Court
Manor Royal
Crawley,
West Sussex
RH10 9PY

Fuji Photo Film (UK) Ltd
Unit 12, St. Martins Way
St. Martins Business Centre
Bedford
MK42 0LF

NHS Cancer Services Collaboration
Westward House
Lime Kiln Close
Stoke Gifford
Bristol, BS34 8SR

UK Medical Ltd
Radiology Division
Albreda House
Lydgate Lane
Sheffield
South Yorkshire, S10 5FH

GE Healthcare
Coolidge House
352 Buckingham Avenue
Slough, Berkshire
SL1 4ER

Philips Medical Systems
The Observatory
Castlefield Road
Reigate, Surrey
RH2 0SG

William Cook Europe ApS
Sandet 6
DK 4632
Bjaeverskov
Denmark

The Royal College of Radiologists Breast Group would also like to thank Philips Medical Systems for their generous sponsorship of the Conference Dinner Drinks Reception.

Oral Presentations

1.1

The ins and outs of CR

Dr Erika Denton, Consultant Radiologist, Radiology Department, East Block level 2, Norfolk and Norwich Hospital, Colney Lane, Norwich, NR4 7UY

CR mammography is a possible cost effective alternative to full field digital mammography. We have used Fuji CR mammography since 2001 in Norwich. I will discuss our experience including the change in practice this has facilitated, the use of different monitors for reporting and the differences between 100 micrometer and 50 micrometer pixel size CR systems from Fuji.

1.3

The implications for QA

Dr Malcolm Ramsdale, Consultant Physicist, NCCPM, Royal Surrey County Hospital, Guildford, GU2 7XX

Going CR/digital has major implications for QA since it is recognised that these exciting developments may not always be superior to traditional film/screen mammography. Imaging performance standards for CR/digital being developed in the UK are likely to be based on an addendum to the European Protocol. The standards are described in terms of threshold contrast for a particular detail size as measured by imaging a suitable test object. Available CR/digital systems in the NHSBSP and elsewhere have been tested by the NCCPM with results showing significant variation and some CR systems failing to meet minimum standards. In CR/digital mammography the dose to the image receptor can impact significantly on threshold contrast. Optimisation of image quality and dose will be a challenge in CR/digital, as well as the continuing challenge in bridging the knowledge gap between clinical and physical image quality assessment.

1.2

The ups and downs of full field digital mammography: lessons from the pilot sites

Dr Matthew Wallis, Consultant Radiologist, Breast Screening Unit, Coventry & Warwickshire Hospital, Stoney Stanton Road, Coventry, CV1 4FH

Pilots of full field digital mammography systems are ongoing.

Technical and clinical evaluation of image quality and reliability is likely to be satisfactory for most, if not all, of the systems, so I anticipate they will all be suitable for symptomatic work.

Screening is a different problem:

- Mammography equipment must provide rapid consistent throughput.
- Work stations need to be user friendly and allow soft copy reading, cope with double reading and arbitration/consensus.
- Strategies for dealing with prior films (don't bother, adjacent roller viewers and digitising) will be reviewed.
- Data interfaces and long term storage is the key to releasing revenue to pay for the equipment. These are the least developed. The pilots have probably clarified the questions but no more.

1.4

New technologies; the changing face of the NHSBSP?

Dr Robin Wilson, Consultant Radiologist, Department of Clinical Radiology, City Hospital, Hucknall Road, Nottingham, NG5 1PB

A number of new technologies have emerged over recent years that show varying promise for breast imaging and breast cancer screening. The most important of these is full-field digital Mammography (FFDM). FFDM is at least as good as conventional mammography for the early detection of breast cancer and it has a number of logistical advantages, including filmless reporting and archiving, faster processing and screening throughout, automated QC and interfacing with PAC's and teleradiology. These alone make the FFDM a viable economic alternative to conventional mammography. One of the major potential benefits of FFDM is the ability to easily apply computer aided detection (CAD). However, to date actual performance of CAD has fallen well short of expectation. FFDM also facilitates tomosynthesis and this is likely to become a commonly applied technology in the near future.

There is increasing evidence that Ultrasound is an effective adjunctive screening method in the dense breast and this has major implication for the NHSBSP. There are justifiable concerns about the high false positive results but elastography may prove to have a role in improving the specificity of ultrasound. Magnetic resonance mammography (MRM) is emerging as the method of choice for screening younger women. Wider access to MRM will be needed in the near future.

Application of these new technologies as soon as possible is essential if the NHSBSP is to survive and move forward. Replacing current conventional mammography machines with more of the same cannot be justified in the light of current choice.

2.1

Controversies in core biopsy result management

R. James Brenner M.D., J.D., FACR, FCLM Professor of Radiology, Chief, Breast Imaging, University of California, San Francisco, USA

The advent of percutaneous large core breast biopsy—by stereotaxis, ultrasound, or MRI— for nonpalpable breast lesions identified by imaging alone has changed the manner in which most patients are currently managed, and recommendations from the radiologist is critical to successful outcomes.

Classically, five types of benign pathologic entities invite considerations for excision because of reported “upstaging” to malignancy. Atypical ductal hyperplasia (ADH), associated with malignancy at excision in about 20% of cases, usually requiring excision. However, when four or fewer terminal ductal lobular units are involved, excision may not be universally indicated. Atypical lobular hyperplasia (ALH) and lobular carcinoma in situ (LCIS) are associated with the increased likelihood of cancer development, but not necessarily at the same site. Several small series suggest the potential need for excision, but this view may be too simplified. Radial scars, historically associated with malignancy, may be sufficiently sampled percutaneously when not associated with atypia. Papillary lesions if completely removed and benign may not require further intervention; partial removal raises the issue of undersampling when portions of the lesion are benign and other portions malignant.

Other lesions need be carefully analyzed to ensure concordance if excision is not recommended. These include focal fibrosis, fibroadenoma/phyllodes discrepancies, sclerosing adenosis, and pseudoangiomatous stromal hyperplasia (PASH). Finally the newly described spectrum of columnar cell alteration need be considered for biopsy, especially when associated with atypia.

Finally, issues of epithelial displacement need be considered. While sometimes making the diagnosis difficult for the pathologist, most evidence suggests that “seeding” of viable malignancy is unlikely.

2.3

Report from the Age Trial

Dr Andy J. Evans, Consultant Radiologist, Department of Clinical Radiology, City Hospital, Hucknall Road, Nottingham, NG5 1PB

The age trial is a multi-centre randomised trial of screening mammography in younger women. Between 1991 and 1997 160,921 women were randomised in a 2:1 ratio to intervention and control arms. The intervention arm were invited for annual mammographic screening from age 40-41 for 7 years and then for 3 yearly screening at age 50-52 as per normal NHSBSP screening. The control arm was invited to NHSBSP screening at age 50-52.

Uptake was 68-70% and prevalent and incident referral rates were 4.6% and 3.4% respectively. Invasive cancer detection was 0.09% and in situ 0.02%. There was little contamination in the control arm. The predicted mortality reduction based on the pathological features of invasive cancers detected up to the end of 1999 was 10-11%.

This finding should be interpreted with caution as many intervention group cancers were diagnosed after this date and the benefit if DCIS detection was largely ignored in this analysis. Node positivity rates in the intervention arm and control arm were 32% and 41% respectively (a 22% relative risk reduction). The first actual mortality results will be published in early 2006.

The mammographic features of screen-detected cancers in the trial were different from those seen in older women. Microcalcification was commoner (47%) and spiculate masses less common (25%).

The previous screens of screen-detected cancer patients were abnormal in retrospect in 57% of cases, calcification was the dominant feature missed in this group (50%). 24% of interval cancers had features on previous screens. These included similar frequencies of asymmetry, deformity and calcification.

2.2

Report from MARIBS

Dr Ruth Warren, Consultant Radiologist, Addenbrooke's Hospital, Cambridge

Genetically predisposed women often develop breast cancer when young and when dense breast tissue reduces the sensitivity of X-ray mammography (XRM). A UK multicentre study comparing the performance of contrast enhanced magnetic resonance imaging (CE MRI) with XRM in these women commenced in 1997.

Women at high risk of breast cancer, with a strong family history of breast cancer and/or high probability of a BRCA1, BRCA2, or TP53 mutation were recruited from 22 centres. Women aged 35 to 49 years were offered annual MRI and XRM for between 2 and 7 years. CE MRI measurement and evaluation followed a published protocol with a defined scoring scheme. The 2-view XRM followed national standards. CE MRI and XRM were independently double read and blinded from the other modality.

In 649 women screened by both XRM and CE MRI (1881 screens) 35 cancers were detected: 19 by CE MRI only (all invasive), 6 by XRM only (3 invasive, 3 ductal carcinoma in situ (DCIS)), 8 by both (invasive, 2 DCIS), with 2 interval cases (1 invasive, 1 DCIS). Mean invasive tumour size was 15 mm. The number of invasive cancers with grades 1-3 was 3, 7 and 19 respectively; there were 6 DCIS cases. Recall rates were 3.93% for XRM, 10.7% for CE MRI and 12.7% for both. Benign surgical biopsy rate was 3.72 per 1000 screens, comparable with UK population screening. Cancer detection rates were 26.9 (prevalence) per 1000 women and 12.8 (incidence) per 1000 woman-years. Sensitivity was significantly higher for CE MRI (77%, 95% CI 60-90%) than for XRM (40%, 24-58%) ($p=0.01$), and was 94% (81-99%) when both methods were used. Specificity was 93% (92-95%) for XRM, 81% (80-83%) for CE MRI ($p<0.0001$) and 77% (75-79%) using both methods. The difference between CE MRI and XRM sensitivities was particularly marked among BRCA1 carriers (13 cancers 92% vs. 23%, $p=0.004$).

Interpretation

In this multicentre study, CE MRI was significantly more sensitive than XRM in cancer detection for the entire cohort, but especially in the sub-group of BRCA1 carriers. Specificity for both procedures was acceptable. Despite a high proportion of grade 3 tumours, tumours were small and few women were node positive. Annual screening combining CE MRI and XRM would detect most tumours in this risk group.

4.1

Imaging the axilla pre-operatively

Dr Eleanor Cornford, Consultant Radiologist, Nottingham Breast Unit, City Hospital, Hucknall Road, Nottingham, NG5 1PB

Axillary lymph node status is the most important prognostic factor in breast cancer patients. It is currently determined by surgical dissection with complete axillary dissection providing the most accurate information. A pre-operative diagnosis of axillary metastases would facilitate axillary clearance and reduce the need for axillary radiotherapy. CT, MRI, PET and Scintimammography have all been used to radiologically stage the axilla but none have proven to be sufficiently sensitive or specific to guide axillary surgery in individual patients. CT and MRI studies have however been useful in determining size and morphology criteria, which are now being used in ultrasound practice to select axillary nodes for preoperative ultrasound guided biopsy. Using these criteria it is now possible to make a pre-operative diagnosis of nodal metastases in approximately 40% of node positive patients.

4.2

Primary surgical management of the axilla

Professor Arnie Purushotham, Consultant Breast Surgeon
Guys and St Thomas' Hospital, London

Surgery to axillary lymph nodes in patients diagnosed with breast cancer is performed in order to stage the disease with a view to providing prognostic information and is also therapeutic in node positive patients. International consensus until recently has been to perform an axillary lymph node dissection in all patients with invasive breast cancer and in the U.K. the alternative procedure of four node axillary sampling also gained favour amongst many surgeons. A more recent alternative which is rapidly gaining widespread acceptance is sentinel lymph node biopsy in patients with early breast cancer. The available evidence suggests that different approaches to the axillary lymph nodes may be adopted in patients based on the risk of nodal positivity thereby tailoring treatment to the individual patient and consequently improving the quality of care.

4.4

Oncological management of the axilla

Dr Adrian Harnett, Consultant Clinical Oncologist, Norfolk and Norwich Hospital, Norwich, NR1 3SR

Oncological management relies on good surgical treatment of the axilla having first been performed and can not make up for inadequate surgery. It should not be used to try and compensate for this and salvage poor surgery.

The aim of Oncological management in conjunction with surgery is threefold; firstly to prevent uncontrolled axillary disease, to minimise morbidity such as lymphoedema, brachial plexopathy and restriction of shoulder movement, and finally to improve survival. The oncological approach to management of the axilla is influenced and should be guided by both patient factors and previous clinical intervention and should have occurred already through the multidisciplinary team meetings.

Obviously factors such as tumour stage, type of presentation, inflammatory breast cancer (and previous oncological treatment), patient age and performance status are all going to affect how the axilla is managed. Pre-operative imaging of the axilla and the role of ultrasound after sentinel node biopsy is discussed with respect to oncological recommendations.

Collaboration with the Histopathologist is imperative regarding the completeness of axillary analysis, including both the presence of micrometastases and extranodal extension. The relationship between lymph node micrometastases and axilla relapse, and the impact of systemic treatment are on going issues.

Radiotherapy will be discussed in detail, including newer radiotherapy techniques including intensity-modulated radiotherapy (IMRT), fractionation studies and target volumes. Systemic treatment will be mentioned briefly as governed by axillary involvement.

4.3

THERE IS NO ABSTRACT AVAILABLE FOR THIS PRESENTATION

5.1

Interval breast cancers: prognostic features and survival by subtype and time since screening

GJR Porter, AJ Evans, HC Burrell, AHS Lee, IO Ellis, J Chakrabarti
Nottingham Breast Institute, Nottingham City Hospital NHS Trust, Nottingham

We have analysed pathological features (grade, lymph node stage, vascular invasion, oestrogen receptor status, size, and histological type) and survival for 538 interval cancer cases by subtype and time since previous screen between 1988 and 31/12/2000. Women presenting in the first year following screening were more likely to be lymph node positive (47% vs 40%, P-value=0.02). Women presenting with group 1 cancers (true intervals) were more likely to be histological grade 3 than group 2 and 3 intervals (minimal signs and false negatives respectively); 52% vs 35%, P-value 0.01. Group 3 interval cancers were more likely to have histological lobular features than other intervals (47% vs 20%, P-value<0.0001). However there was no significant difference assessed by Kaplan-Meier survival curves by sub-group or interval year with 5-year survival rates for groups 1, 2, and 3 of 80%, 81%, and 80% or by interval year with years 1,2,3, and 4 having 5-year survivals of 81%, 82%, 78% and 75%. We were surprised by the uniformity of survival given differences in classical prognostic features between these groups.

5.2

Ductal Carcinoma in Situ (DCIS) – the role of prognostic indicators in informing treatment and reducing local recurrence

M Wallis³, K Clements¹, J Macartney², G Lawrence¹, M Lee²
M Wheaton³, O Kearins¹, H Bishop⁴

¹ West Midlands Cancer Intelligence Unit, Edgbaston, ² Walsgrave Hospital NHS Trust, Coventry, ³ Warwickshire, Solihull and Coventry Breast Screening Service, Coventry, ⁴ Royal Bolton Hospital, Bolton

A retrospective study of cases of DCIS diagnosed in the West Midlands during the period 1st April 1988 – 31st March 1999 was undertaken. The aim of this study was to collect pathological, treatment and radiology data in order to construct guidelines for the management of screen detected DCIS.

Of the 840 cases originally identified, full pathology data were available for 616 cases and full treatment information available for 701 cases. A retrospective radiological review was completed on 669 cases. Follow up data were attained for a maximum of 16 years and a minimum of 5 years. Mastectomy rate (35.9%) remained constant over the period concerned and was clearly related to radiological size and proximity to nipple. Local recurrence occurred in 13.8% (62 of 449) of women treated conservatively.

Van Nuys index became more predictive of local recurrence when the radiological size was used as it was noted that pathology consistently 'under estimated' the size of the radiologically more extensive tumours. There was good correlation with tumour grade and calcification type with 53% of high grade tumours displaying casting calcifications.

We used the dataset to construct a Pre operative radiological index using size, type of calcification and distance from the nipple. This predicted type of operation and local recurrence risk in conservatively treated breasts, indicating that there is a role for radiological characteristics to provide information previously only available post operatively. A greater number of cases would be required to establish this coherently. It is hoped that the Sloane Project will be able to answer these questions.

5.3

Minimal change cancer – a new teaching tool

HM Dobson

West of Scotland Breast Screening Centre, Glasgow

As medical practitioners, it is mandatory to provide evidence of maintaining good medical practice. Whilst emphasis is placed on clinical outcomes, alternative evidence is provided frequently in preparation for appraisal; one such piece of evidence is participation in the *PERFORMS*TM educational tool or the "equivalent". To date, there has been little guidance as to what an "equivalent" educational tool may comprise.

The West of Scotland Breast Screening Service has developed a CD-ROM based teaching tool which in pilot testing has been identified as a useful complement to *PERFORMS*TM and is suggested to provide an equivalent educational tool.

The teaching tool contains a collection of real-life minimal sign cancers identified as being single reader pick-ups, thus the reader is aware from the start that each of these cases is difficult and that one of two experienced readers has passed these as normal. Being CD-ROM based, the teaching tool can be utilised more flexibly in terms of timing and location and offers a choice of mode. By using the SELF ASSESSMENT mode, the reader can review the series of cases and test their own performance against the real-life outcomes of the cases, whereas alternatively the reader could use TEXT BOOK mode, where the cases are viewed in their entirety as if leafing through the pages of a text book. The cases are viewed sequentially, separating out the screening films from the diagnostic work-up films and following viewing of the images, the reader is able to access clinical and teaching notes pertinent to each individual case. The teaching is based on that of up to date published material and is accompanied by references.

The use of the teaching aid is complemented by the opportunity at the annual Radiology Update Day to discuss the various teaching points and the combination of working through the CD-ROM and discussion at the Radiology Update Day will be approved by RCR for CME Category 1 points.

The content and format of this teaching aid has been piloted among Scottish film readers and results of the pilot will be presented in addition to examples from the teaching aid.

It is thought that this teaching aid would be of particular benefit to those individuals with a greater emphasis on symptomatic practice as this would allow a number of minimal change cancers, far greater than is seen in symptomatic practice, to be viewed and worked through at one sitting.

The teaching aid can be updated annually by the addition of single reader pick-ups from real-life screening practice.

5.4

Can we refine our use of MRI in the management of breast cancer patients undergoing neoadjuvant chemotherapy?

BJG Dall, KN Franks, S Kumar, DJ Dodwell, TP Perren
United Leeds Teaching Hospitals NHS Trust, Leeds

We performed a retrospective audit of 78 patients who received neoadjuvant chemotherapy. Patients had a pre-treatment MRI scan, a 2nd scan following 2 or 3 cycles of chemotherapy and a 3rd scan at the end of treatment. The volume, extent and activity of the disease was assessed and the response to chemotherapy scored (- 1=Progressed 0=No Response 1=Minimal Response 2=Partial 3=Almost Complete 4= Complete). The 3rd MRI scan was compared to the histology.

Extent of disease (1st MRI): MRI matched mammography/ultrasound in 62 patients (79%) and identified additional disease in 17 patients(21%). 16 of these patients had multifocal disease.

Response to chemotherapy: change between 1st and 2nd MRI scans was as follows:-

Extent of residual disease (3rd MRI): size at MRI equalled size at histology in 46 patients(61%), MRI<histology 19patients(25%), MRI>histology 11patients(14%).

The 10 patients who had a complete pathological response scored 2 or 3 on the second scan.

It is now the policy of our Multidisciplinary Team to use MRI after 2 cycles to change chemotherapy regimes, to plan surgery and to prompt u/s guided marker clip placement if wide local excision(WLE) is likely to be a future option and MRI shows a good response. The 3rd MRI does not always accurately reflect residual disease, particularly if it is multifocal but it may not be necessary if a mastectomy is planned. It does provide important information in conjunction with mammography and ultrasound if WLE is planned.

5.6

Preliminary results from the West Midlands Breast Screening Histories Project 1988 - 2001

M Wallis¹, G Lawrence², E O'Sullivan², O Kaerins², N Tappenden²
¹ Coventry and Warwickshire Hospital, Coventry, ² West Midlands Cancer Intelligence Unit, Edgbaston

The aim of the study was to allocate a screening status, based on a woman's screening history, to all cases of primary breast cancer diagnosed in the West Midlands since screening began until 31st March 2001. A data extract was obtained from the West Midlands Cancer Registry to identify these cases. Screen-detected tumours were identified through data from regional breast screening units and remaining tumours were assigned one of eight mutually exclusive screening status categories.

Overall, using the algorithm developed, a screening status was assigned to 14,681 breast cancers. 42% were screen-detected, 26% interval cancers, 13% diagnosed before invite, 10% non-attenders, 2% not known to the NHSBSP and 3% were diagnosed in lapsed attenders. 4% of the entire cohort remained unresolvable. From 1988 to 2001 there was an increase in screen detected cancers, interval cancers and lapsed attenders, with the most marked increase amongst interval cancers. The data shows a decrease in the number of women diagnosed before invite, and non attendance also decreases slowly after reaching a peak between 1992 and 1995.

The data set obtained is a valuable resource for evaluating the NHS Breast Screening Programme (NHSBSP). Incidence, mortality and survival statistics have been calculated and can be presented according to screening status and differences explained in terms of prognostic characteristics. This process has been incorporated into standard practice within the West Midlands and data will be updated as a matter of routine.

5.5

Patients with inconclusive triple assessment; is MRI the answer?

I Jolley, BJK Dall
United Leeds Teaching Hospitals NHS Trust, Leeds

Between June 2001 and October 2004 (41 months) 798 breast MRI scans were performed at our institute. 138 of these scans were performed because, after triple assessment and multidisciplinary review there was continuing uncertainty about the presence or absence of breast cancer. This is a retrospective audit of those patients with complete data (n = 122). There are three subgroups: ladies presenting with metastatic axillary LN'S (17) ; ladies where there is continued clinical concern despite normal imaging and biopsy (70) ; ladies with unresolved imaging after triple assessment (35).

The MRI scan was reported as M1(normal), M2(benign), M3(indeterminate), M4(suspicious) and M5(malignant) and compared with the histology. If M1 and M2 are considered negative and M3, M4 and M5 are considered positive MRI has a sensitivity of 91% and a specificity of 83%. There were 3 false negative and 15 false positive scans. Comparing the MRI score with the score from mammography and ultrasound there was no change in 52 cases. MRI correctly upgraded the lesion in 27 cases (ie identified occult carcinomas) and correctly downgraded the lesion in 29 cases (confirmed normal/benign). There were 12 incorrect upgrades (hyperplasia, infection, fat necrosis) and 2 lesions were incorrectly downgraded (DCIS, invasive tumour).

MRI is both sensitive and specific in the further assessment of this challenging group of patients in whom standard triple assessment has failed to reach a diagnosis.

6.1

The current surgical perspective on implants

Mrs Eva M. Weiler-Mithoff, Consultant Plastic Surgeon,
Canniesburn Plastic Surgery Unit, Royal Infirmary, Glasgow, G4 0SS

ABSTRACT AVAILABLE AS A SEPARATE HANDOUT

6.2

The imaging perspective on implants

R. James Brenner M.D., J.D., FACR, FCLM Professor of Radiology,
Chief, Breast Imaging, University of California, San Francisco, USA

The imaging of breast implants begins with screening mammography where the primary effort of cancer detection is accompanied by evaluation of implant integrity. Saline implants, if ruptured, collapse within days and noticed clinically. Silent ruptures of silicone implants cannot be detected mammographically unless there is extracapsular silicone in the breast, which infers intracapsular leak, unless there has been prior replacement.

Ultrasound evaluation has a relatively high sensitivity for extracapsular silicone, creating a reverberative artifact often called the "snowstorm appearance." Intracapsular leak can be recognized by the "stepladder sign" of the collapsed shell within a pool of free silicone, as well as disruption of the envelope usually associated with focal areas of echogenicity called "heterogenous aggregates."

The gold standard for liquid silicone implant integrity evaluation is MRI, usually using an inversion recovery technique and T2 weighted images. Collapsed implants demonstrate a "linguine sign" similar to the stepladder sign of ultrasound. Focal leakage, when constrained by adhesions of the envelope to the fibrous capsule, create "inverted loop" and "subcapsular" signs.

Extensive studies have now shown a lack of a direct causative relationship of silicone to a variety of collagen vascular diseases, although some women may be more prone than others.

Two manufacturers of silicone implants remain, MgGhan/Inamed and Mentor. Evolving improvements in implant shell strength and components have led to the designation of three "generations" of implant development. . The likely rate of rupture is probably 15% at 10 years, with many failures occurring initially during implantation.

Poster Presentations

P.1

Agfa embrace CR mammography – the South Durham experience

RG Henderson, E Parker
Darlington Memorial Hospital, Darlington

The Agfa Embrace CR mammography equipment was withdrawn from use in June 2004 following a case of missed microcalcification in France. Bishop Auckland General Hospital was the first in the UK to use this equipment, and by June 2004 1104 patients had been examined with it.

All these patients were contacted by letter and a telephone hotline was set up. Over 77% responded, and 58% were re-examined using conventional screen/film mammography. These were graded using the Breast Imaging Reporting and Data System (BIRADS). 395 were BIRADS grade 1, 151 grade 2, 20 grade 3, 2 grade 4 and 1 grade 5. All those scoring 3 or above were further assessed. Most of these had breast cysts, but one cancer and one radial scar were found. This episode brought to light some issues of patient administration which have altered our practice and may have wider application elsewhere. The advisability of a co-ordinated international (and particularly European) response to such critical incidents will be discussed.

P.3

The influence of mammographic background pattern on the pathological features, radiological features and survival in screened women

GJR Porter, AJ Evans, LJ Hamilton, EJ Cornford, JJ James, HC Burrell, ARW Wilson, AHS Lee, J Chakrabarti
Nottingham Breast Institute, Nottingham City Hospital NHS Trust, Nottingham

It is generally assumed there is an excess of interval cancers in women with radiographically dense breasts and that this leads to a higher breast cancer mortality in this group. We have classified the background pattern (BIRADS system) of 684 screened women who have presented with either a screen detected or interval cancer. Breast cancer specific survival was ascertained with a mean follow up of 9 years. There was an excess of interval cancers in women with dense breasts (P -value <0.0001). However Kaplan-Meier survival curves were obtained for screen detected, interval, and both groups combined according to background pattern. No statistically significant difference in survival was observed despite an excess of interval cancers in women with dense mammographic background patterns.

Screened women presenting with breast cancer with a dense mammographic background pattern have similar survival to women with a fatty background pattern despite an excess of interval cancers. This data supports the screening of women with a dense background pattern.

P.2

Fuss free follow up

AC Havard, JL Smith
Milton Keynes General NHS Trust, Milton Keynes

The use of a database to call women on mammographic surveillance is described.

The system was developed to ensure that follow up mammography could be independent of outpatient clinic attendance and therefore less subject to time interval variations and less subject to being overlooked altogether. The system is robust and carries on uninterrupted when the patient is discharged from clinic and thus fits perfectly with recommendations for shortened length of clinical follow up.

Women are called direct by imaging and normal results are sent standard "all clear" letters directly to their home addresses. Those needing further assessment are recalled directly and then either reassured or, if tissue sampling is required, their results and further management plans are discussed in the MDT.

This system has been well received by staff and patients. The screening interval has been regularised and the times from both exposure to results and to outcome of further assessment have been dramatically reduced. The chances of women being lost to follow up both from a regular surveillance programme and following an abnormal screen have also been reduced.

The system is, as near as possible, subject to the same standards as the NHSBSP and the results to date show all targets met or exceeded.

This paper is proffered in response to numerous requests for further information.

P.4

Improved accuracy of wire guided breast surgery with supplementary ultrasound

S Kolpatil, **MA Crotch-Harvey**
Macclesfield District General Hospital, Macclesfield

Impalpable breast lesions have always been a challenge for the breast surgeon. Abnormalities visible solely on mammography are a particular problem; these are usually localised by stereotactic wire placement. The entry point of the wire may be distant to the lesion itself causing difficulty in identifying the position of the wire tip and the unnecessary removal of tissue along the wire during dissection. Furthermore surgeons are striving to keep benign biopsies to 20g of tissue or less in order to comply with BASO guidelines.

To improve the accuracy of preoperative localisation in these cases we introduced a supplementary ultrasound scan to identify the exact location of the wire tip. We have audited the benefits of the additional procedure by analysing two groups of 15 patients, from periods before and after the introduction of the new technique. Specimen mammograms from each case were examined to determine the proximity of the lesion to the centre of the specimen. We have found that there was a significant (19%) improvement in accurate localisation following the introduction of ultrasound. Furthermore, the surgeons have reported considerable benefit in terms of ease of surgery and reduced operating time. It has also been the experience of others (1) that this technique results in significantly smaller diagnostic biopsy specimens and improved cosmesis. Logically the technique should also improve clearance margins and reduce the need for further surgery in therapeutic operations.

1. Benson SRC, et al. Combined image guidance excision of non-palpable breast lesions. *The Breast* (2004) 13, 110-114

P.5**Atypical and malignant radial scars of the breast – how accurate is preoperative core biopsy?****AJ Maxwell**

Royal Bolton Hospital, Bolton

Fourteen women underwent preoperative core biopsy of mammographically detected lesions which showed the imaging features of radial scars and proved on excision biopsy to be radial scars with associated atypical hyperplasia or neoplasia. An average of five 14 gauge needle cores were taken; in five under ultrasonic guidance and in nine under stereotactic guidance.

The seven invasive cancers ranged in size from 2 to 10 mm (mean 5 mm). Lobular carcinoma in situ (LCIS) was correctly diagnosed on core biopsy in three women, but invasive ductal carcinoma was also found in one at surgery. Atypical lobular hyperplasia was correctly diagnosed in one woman, but LCIS was additionally found at surgery. Atypical ductal hyperplasia was correctly diagnosed in one woman. Four women had core biopsies reported as showing features possibly due to or suggestive of malignancy (B3 or B4). Three of these had invasive cancer at excision biopsy; the other had ductal carcinoma in situ (DCIS). In two cases the core biopsy was reported as showing features of a radial scar only (B3) and in one case it was reported as benign (B2) (two invasive carcinomas, one DCIS at surgery).

Of the 10 women who turned out to have frank malignancy, only two had a definite preoperative diagnosis of malignancy. In 9 of the 14 cases the core biopsy failed to give a definitive diagnosis or underestimated the disease.

Percutaneous 14 gauge core biopsy tends to underestimate disease and cannot be used to reliably exclude atypia or malignancy in radial scars.

P.7**Do lesions with indeterminate (b3 or b4) core biopsy result require surgical excision?****C Flis, M Michell, N Dutt**

King's College Hospital, London

To describe the mammographic features and outcome of breast lesions with indeterminate (B3 or B4) core biopsy (CB) diagnosis. CB was performed on 2910 patients between 1994 and 2004. 258 (8.9%) patients had a B3 or B4 CB result. 237 (8.1%) patients had a B3 and 21 (0.7%) had a B4 result. 213 patients underwent diagnostic surgical excision. Of these more than half (61%) were found to be benign on excision biopsy. 72% of B3 and 24% of B4 CB lesions were found to be benign on excision biopsy. Of the 45 (19%) patients who did not have an excision biopsy, 36 (80%) are currently on routine screening. The commonest mammographic sign of a B3 or B4 lesion is microcalcification followed by both a stellate lesion and a mass. The commonest mammographic sign of a benign B3 or B4 lesion is a stellate lesion followed by a mass. The commonest benign histological outcome was a radial scar followed by fibrocystic/sclerosing adenosis and duct papilloma. The commonest sign of fibrocystic/sclerosing adenosis is microcalcification, of a radial scar is a stellate lesion and of a duct papilloma is a mass.

The standard practice for most B3/ B4 lesions has been to proceed to diagnostic surgery because of the high overall rate of malignancy (39%). However, with newer technologies eg. Vacuum assisted CB allowing larger tissue samples to be removed, diagnostic surgery may be avoided in some cases.

P.6**An audit of patient satisfaction following the introduction of advanced practitioner led assessment clinics****C Bradley**, RL Tetlow, RL Chitnis, AE Hubbard

Humberside Breast Screening Service, Cottingham

An audit was commissioned to measure patient satisfaction following the introduction of advanced practitioner (AP) led assessment clinics, a new NHS BSS development.

A prepaid anonymous postal questionnaire was handed out to 500 sequential patients over a 4-month period. There was a poor response at 35%; of these 11.7% said they were seen by AP alone, 33.5% said they were seen by a doctor alone and 36.9% said they were seen by both. 2.8% believed they were only seen by a technician (T), which is of concern as this included 3 stereo and 1 mamotome procedures. 20% were unsure who assessed them. Satisfaction was recorded on a scale of 1 to 6, 6 being the highest. The mean result for all groups was 5.02. There was no statistical difference between any of the groups identified by the patients. The lowest mean satisfaction level scored by T was 4.8 and the highest 5.38 by AP.

We conclude that the patients do not necessarily remember who assessed them and are unable to differentiate between staff members despite formal introductions. The response level suggests it is of little patient concern.

P.8**Mammographic features and needle biopsy results of surgically excised screen detected papillary lesions****C Flis, M Michell, N Dutt**

King's College Hospital, London

To describe the mammographic features and results of core biopsy (CB) of screen detected papillary lesions.

Retrospective review of mammographic signs and CB results of screen detected papillary lesions.

Between 1989 and 2003 there were 51 surgically excised papillary lesions. 39 (76.5%) were papillomas, 11 (21.6%) were encysted papillary DCIS and 1 (1.9%) was a papillary carcinoma. The most common mammographic feature of a papilloma was a mass with benign or equivocal features followed by indeterminate calcification. The most common feature of encysted papillary DCIS was a mass with suspicious features followed by a mass with microcalcification showing malignant features. The feature of the papillary carcinoma was a mass with suspicious features. The most common CB result of a papilloma and encysted papillary DCIS is indeterminate (B3 or B4). The CB result of the papillary carcinoma was malignant invasive. The mammographic features are described in this presentation. Details of the histopathological features of the CB findings of papillary lesions will be presented. It is hoped that in future it will not be necessary to excise all screen detected papillary lesions.

P.9

Improving pre-operative diagnosis – a historical perspective**HM Dobson**

West of Scotland Breast Screening Centre, Glasgow

Since 1996, the BASO annual review of screen detected cancers has published minimum (70%) and achievable (90%) targets for pre-operative diagnosis of invasive disease. The West of Scotland Breast Screening Centre, which commenced in 1988 and is responsible for the administration, screening, assessment and onward relevant referral of 48% of the eligible population of Scotland, presents a historical review of the techniques of pre-operative diagnosis. Initially relying on image-guided FNA, the service presented disappointing results with absolute sensitivity of 60% and a False Negative Rate for cancers of 22%. In 1996, x-ray guided and latterly ultrasound guided core biopsy were introduced which quickly resulted in an improvement in performance to a plateau for pre-operative diagnosis (invasive cancer) of 80%. In 2001, the addition of prone table for x-ray guided biopsies resulted in an improvement in the pre-operative diagnostic rate to 87%. The further addition of large volume core biopsy (x-ray guided – mammotome) has now resulted in a pre-operative diagnostic rate (invasive disease) of 97%. A prospective analysis of the first 200 large volume core biopsies will be presented. There is evidence that the addition of large volume biopsy has halved the number of repeat x-ray guided biopsies (9% to 4%), halved the histological underestimate rate following a core diagnosis of B5A (DCIS) from 22% to 12% and halved the rate of indeterminate cores, i.e. B3/4, from 4 per 100 (conventional core) to 2 per 100 (large volume core). The analysis of these data indicate that large volume core biopsy would be the modality of choice in small clusters of indeterminate (R3) calcifications, particularly in a fatty breast.

The poster will present these data highlighting the advantages of prone table over upright system and large volume technique over conventional core technique, including a qualitative analysis of acceptability of the techniques from both the patient and clinicians' perspective.

The conclusions following the introduction of large volume biopsy are broadly similar to those recently published in *Clinical Guidelines of Breast Cancer Screening Assessment (updated April 2005)*.

P.11

Role of core biopsy in the management of radial scars and complex sclerosing lesions: do all lesions need to be excised?

JA Rink, KB Muhammed, C Holgate, **JR Steel**, PA Jones, RM Watkins
Primrose Breast Care Centre, Derriford Hospital, Plymouth

Up to 30% of all radial scars (RS) and complex sclerosing lesions (CSL) are known to be associated with malignant disease. This study was designed to assess the value of core biopsy (CB) in the diagnosis and management of RS and CSL.

179 patients with a histological diagnosis of RS or CSL in surgically excised specimens were identified over a 17 year period. In those patients who had a preoperative CB the sensitivity, specificity and positive predictive value for associated breast carcinoma was established.

22 (31%) of 71 RS and 27 (25%) of 108 CSL had an associated malignancy. 97 (54%) of 179 cases had preoperative CB. Overall the sensitivity of a positive (B4 or B5) CB result for finding associated malignancy was 55%. Specificity and positive predictive value of CB was 100%. In the 150 cases (83%) for which the RS or CSL was the index lesion and any associated malignancy was of smaller diameter, the sensitivity of CB was only 15%. For the 29 (17%) cases where malignancy was the main pathology the sensitivity of CB was 87% (chi-squared test for difference, $P < 0.05$)

In cases where malignancy was an incidental finding in a RS or CSL CB had very low sensitivity for identifying the associated cancer. Standard CB alone is insufficient to confidently exclude malignancy in a lesion with the appearances of a RS or CSL.

P.10

Clinical experience with MRI-guided breast biopsyS Bacon, DD Manuel, **BJG Dall**

The Leeds Teaching Hospitals NHS Trust, Leeds

A retrospective audit of consecutive biopsies performed using a commercially available breast biopsy system on a 1.5T MRI scanner was undertaken. Between April 2002 and April 2005 breast MRI scans were performed on 705 patients. Sixteen patients required an MRI-guided biopsy because the lesion identified on MRI was not visible on 'MRI-directed' mammography and ultrasound. The same needle localisation procedure was used for all patients and two different biopsy systems were employed: a BARD gun system (n=9); and more recently a Mammotome vacuum system (n=7). Lesion characteristics (e.g. size, morphology, enhancement) and an 'MRI score' dependent on these characteristics (M5=malignant, M4=suspicious, M3=indeterminate) were documented. The procedure times were recorded for the vacuum-assisted biopsies. All histological results and follow-up interventions were reviewed. Mass lesions and areas of enhancement ranged from 6 to 30mm and 10 to 65mm, respectively. Of the M5 lesions (n=4) all 4 were carcinomas; 2 were diagnosed on MR biopsy and 2 were technical failures ("misses"); both patients had the lesions removed surgically. Of the M4 lesions (n=5) 2 were carcinomas and 3 were radial scars. Of the M3 lesions (n=7), 2 were carcinomas, 2 were fibroadenomas and 3 were normal breast tissue. The average time taken for the vacuum assisted biopsy was 53 min (range, 43-71 min). To realise the full potential of MRI as an adjunct to triple assessment, MRI-guided biopsy is an essential investigation to sample MRI-detected lesions that are not visible on 'MRI-directed' mammography and ultrasound.

P.12

New ultrasound scanning modalities: breast cancer size measurement and comparison with histology

AM Gilchrist¹, LM Smart¹, ME Smith¹, JS Walsh¹, TN Doig², JF Loane²

¹ South East Scotland Breast Screening Programme, Edinburgh,

² Western General Hospital, Pathology Department, Edinburgh

New ultrasound modalities of X-resolution and SonoCt give more tissue information than conventional scanning. However, it is unclear how this correlates with histology or will influence tumour measurement.

We measured cancer size in 43 patients with screen detected breast cancer using conventional ultrasound, Xres and SonoCT and compared these with histology. Edge characteristics such as haloes and microlobulations were also noted.

All sonographic modalities tended to underestimate tumour size compared to histological measurement. There was good correlation for size measurement between each of the three ultrasound modalities, (Pearson correlation coefficient $r = 0.959 - 0.993$ for paired modalities). Correlation with histology ($r = 0.5 - 0.7$) was lowered by a small proportion of cases which showed gross discrepancies. Sonographic haloes, high grade and DCIS were associated with discrepancies between radiological and histological measurements. SonoCT gives better visualisation of the tumour edge features and inclusion of sonographic haloes in the tumour measurement will more accurately reflect true tumour size.

P.13**Comparison of available mammotome and 14g core biopsy site markers- ease of use, cost, ultrasound visibility and size of MRI susceptibility artefact at 1.5 and 3.0 tesla****AE Hubbard**¹, L Turnbull²¹Hull and East Yorkshire NHS Trust, Hull, ² University of Hull, Hull

A wide variety of biopsy site markers readily available on the UK market were assessed for ease of use, by experienced radiologists and interventional trained advanced and consultant radiographer practitioners. Ultrasound visibility was assessed immediately, and, where possible at localisation prior to surgery (2-6 weeks). A lard phantom was prepared for MRI, and imaged at usual breast protocols, using Phillips 1.5 T, and 3.0 T scanners. The locations of the markers contained within it determined by an X-ray map of the phantom.

No single marker offers economy ease of use and x-ray, ultrasound and MRI visibility

The ease of use and ultrasound visibility of the markers varied greatly. The size of the MRI artefact differed very little from 1.5 to 3 tesla. Some of the smaller, titanium markers proved difficult to see on 5mm slices using many of our usual sequences.

P.15**Individual film reading performance figures in screening: the Welsh experience****E Edwards**, D Brook, K Gower-Thomas
Breast Test Wales, Cardiff

An IT system for quality assuring film reading, QAR, was created in 1999 and redeveloped in 2004/05 by the Breast Test Wales (BTW) in-house software developer. The system uses a data warehouse extracted weekly from the NBSS, held in Microsoft SQL Server tables, with a front-end menu written in Microsoft C#. The data is collated from all three BTW centres with a division code added to provide unique identifiers.

The download function in the NBSS is an additional feature created by the local NBSS support team. IT support and maintenance of the QAR system, the downloads and the data warehouse are required, hence the QAR system is currently only available in Wales.

The system allows the individual film reader access on a regular basis to their figures for films read, recall rate, cancer detection rates for all cancers, small invasive cancers and non-invasive cancers. It also provides the reader with the numbers of missed cancers and these individual cases can be reviewed to assess areas of weakness for further professional development. Information is provided on the progress of training of a reader and validates their competency to be part of the screening programme.

This ongoing feedback allows the reader to: audit their own competency compared with colleagues; adjust their practice if required; review their year on year performance.

The figures have shown year on year increased performances of individual readers and contribute to maintaining a high quality screening programme.

P.14**The use of Vacuum Assisted Mammotomy (VAM) in the management of indeterminate breast lesions****R Sinnatamby**, PD Britton, SE Pinder
Cambridge University Hospitals NHS Foundation Trust, Cambridge

We describe our experience of VAM in the management of indeterminate lesions with the aim of avoiding diagnostic surgery. 31 patients underwent VAM during a 26 month period. In 11 patients VAM was performed prospectively as a combined diagnostic and excision procedure either for papillary lesions seen on ultrasound (6), presumed radial scars (2) or indeterminate Ca²⁺. 19 patients had B3 lesions on initial core biopsy (13 papillomata, 4 radial scars, 2 atypical columnar cell change and 1 ALH). 1 patient had a benign core biopsy but a radiologically indeterminate nodule. Following VAM, benign histology was confirmed in 28 patients (90%) in whom further surgery was deemed unnecessary. 3 patients (10%) required surgery – 1 for cytological atypia at VAM (final pathology benign) and 2 for DCIS.

Our experience supports the current NHSBSP guidelines accepting VAM in the management of certain indeterminate breast lesions. It appears to be well tolerated and avoided the need for surgery in 90% of such patients.

P.16**Radiographer led stereo core biopsy – an audit of the effect on screening assessment clinics****T Edmunds**, E Edwards, K Gower-Thomas
Breast Test Wales, Cardiff

The high incidence of breast cancer in Wales together with the added pressure of two-view mammography and the age extension to 70 has, over the past four years, increasingly pressurised radiologists in assessment sessions.

Over this period, Breast Test Wales (Cardiff) has developed a team of radiographers extending their role in stereo imaging to aid throughput of patients requiring stereo core biopsy.

Initially developing a local "Stereo Imaging Standard" which trained radiographers to efficiently use the Siemens Opdim System, the role progressed to the radiographer targeting the lesion prior to the radiologist performing the biopsy.

This role has in the past six months extended further, with 3 radiographers carrying out biopsies on 150 consecutive Breast Test Wales patients.

The process has been audited from its instigation, recording – the time taken for the biopsy procedure; the number of cores taken; whether micro-calcification was present in the specimen, and the number of cases with a definitive diagnosis after stereo core procedure. Comparison was made to previous data where available. The mean time for a stereo core biopsy was 15.7 minutes (n=59). The mean number of passes per biopsy was 4.5 (n=91). 129 women had a definitive diagnosis (n=150) = 86% success rate. Therefore nearly 40hrs of radiologist time was saved over the 6 month period.

This process led to new training and procedural protocols being established.

The study demonstrates that radiographer led stereo core biopsy can release radiologist time in assessment sessions without a negative impact on diagnosis.

P.17**Diagnosis of axillary lymph node metastases by ultrasound-guided fine needle aspirate cytology in primary operable breast cancer**

D Lewis, **C Flis**, M Michell, N Dutt
King's College Hospital, London

Retrospective analysis of the findings of axillary ultrasound and lymph node FNAC of patients with operable breast cancer. The ipsilateral axilla was scanned in 30 patients. Lymph nodes were classified as abnormal if the cortex was greater than 2mm, there was a change in shape or loss of fatty hilum. Abnormal nodes were found in 17 (57%) patients and axillary lymph node FNAC was performed in 15 (50%) patients. There were 7 malignant, 7 inadequate and 1 benign result. All patients with malignant FNAC results were found to have nodal metastases at surgery. No nodal metastases were found in the patient with the benign lymph node FNAC. Of the patients with malignant FNAC results, 5 (71%) patients had more than 3 lymph nodes involved at surgery, 5 (71%) patients had tumours greater than 30 mm in size and 5 (71%) were grade 3 and 2 (29%) were grade 2 tumours. Of the 30 patients who had an axillary ultrasound, 15 had nodal metastases at surgery and ultrasound guided FNAC identified 7 of these patients (sensitivity was 47%). In total 47% of node positive patients were identified preoperatively by ultrasound guided FNAC. 71% of patients identified preoperatively had more than 3 nodes involved at surgery and 71% had tumours greater than 30mm. Thus a malignant FNAC result is more likely when there are several nodes involved and with increasing size of the tumour.

P.19**Are the resources associated with mammotome breast biopsy well spent?**

J Simpson, J Liston
Leeds Wakefield NHS Breast Screening Service, Leeds

To ascertain if mammotome biopsy for selected cases is cost-effective. Is additional expense justified by an improvement in non-operative diagnosis rates for malignancy? Most units achieve the NHS Breast Screening Programme target of >90% for non-operative diagnosis of invasive breast cancer. This is more challenging for non-invasive cancers, where diagnosis often depends on targeting small clusters of calcification. Interim analysis from the UK NHSBSP multicentre image guided trial indicates that an 11-gauge mammotome biopsy is more likely to provide a diagnostic result than a standard 14-gauge core biopsy. Thirty-seven patients underwent mammotome biopsy over a 21 month period, each having previously undergone assessment of calcification with standard core biopsy where results were non-diagnostic or there was discordance with pathology results. Mammographic findings, pathology results of conventional and mammotome biopsies and the final outcome were recorded prospectively. Standard core biopsy failed to achieve a non-operative diagnosis in 14 cases subsequently proven to be malignant, but mammotome biopsy established a non-operative diagnosis of malignancy in 79% (11/14) of these difficult cases. 16 women were discharged following a benign mammotome biopsy. 2 women required surgical biopsy to prove benignity. 5 women required follow-up review. Findings of improved diagnostic accuracy with mammotome biopsy in assessment of calcification concord with the preliminary findings of a large multicentre trial. If used selectively, additional costs are offset by saving surgical/theatre resources and avoiding any associated morbidity. In this study resources associated with mammotome biopsy were well spent.

P.18**¹⁸F-labelled fluoro-2-deoxy-d-glucose positron emission tomography/computed tomography (fdg-pet/ct) in breast cancer – a pictorial review**

ID Lyburn¹, RJ Chambers², RAR Green³, TD Mills⁴, JS Green⁵, BS Sanghera², WL Wong²
¹ Gloucestershire Breast Screening, Cheltenham, ² Paul Strickland Scanner Centre, London ³ Royal National Orthopaedic Hospital, London, ⁴ Royal Berkshire Hospital, Reading, ⁵ Cheltenham General Hospital, Cheltenham

Breast cancer, like most malignancies, usually has a high rate of glucose metabolism, enabling imaging with ¹⁸F-labelled fluoro-2-deoxy-D-glucose (FDG). FDG Positron Emission Tomography-Computed Tomography (PET/CT) can detect primary breast tumours and metastatic disease. Mammographically occult tumours and multifocal disease may be identified, but lesions up to 10mm in size may not be detected restricting the role FDG PET/CT in evaluating primary breast tumours. Out with the breast in staging and restaging FDG PET/CT may identify involved locoregional nodes and provides the most comprehensive imaging evaluation of systemic metastatic disease. It is of use when morphological imaging is problematic, for instance in differentiating recurrent malignancy from post radiation plexopathy and also in assessing treatment response of systemic disease – baseline and repeat studies post treatment allow the potential of individualizing therapeutic regimens. This exhibit will outline the current potential role of FDG PET/CT in breast cancer and present several illustrative cases.

P.20**Review of interval breast cancers presenting in women who participated in the age extension (65-69yrs) screening pilot**

DD Manuel, J Liston
Leeds University Hospitals Trust, Leeds

To compare cancer detection rates and interval cancer rates in 50-64 versus 65-69yr old women who underwent screening. To review pathological data and the length of time between screening and diagnosis of an interval cancer in the two groups. Leeds Wakefield Screening Service routinely invited women aged 65-69 in addition to women aged 50-64 for screening between 1997 and 2000. Histopathological features of interval cancers in the two age groups were compared and analysed. Interval cancer cases were identified from the Regional Cancer Registry database after sufficient time had elapsed to allow full ascertainment. RESULTS :
Group 1: (50-64 yrs) : 64320 screened → 349 screen detected cancers (5.4/1000) + 226 interval cancers (3.5/1000).
Group 2: (65-69yrs) : 14467 screened → 119 screen detected cancers (8.3/1000) +39 interval cancers (2.7/1000).
Group 1: Ductal 72%, Lobular 15%, other 12%: Grade I 13%, II 51%, III 31%:
Nodes zero 50%, (1-6) 31%, (>7) 11%: Size <15mm 27%, 16-26mm 44%, 27-48mm 16%, >49mm 8%:
Length <12months 23%, 13-24months 36%, 25-36 months 39%.
Group 2: Ductal 74%, Lobular 7%, others 16%. Grade I 20%, II 31%, III 44%.:
Nodes zero 48%, (1-6) 26%, (>7) 8% :
Size <15mm 36%, 16-26mm 38%, 27-37mm 8%, >38mm 10%:
Length <12months 13%, 13-24 38%, 25-36months 49%.
Higher cancer detection rates with lower interval cancer rates were observed in older women compared to younger women. No significant differences were identified in the interval cancer histopathological features or the interval length time.

P.21

Diagnosis of silicone breast implants ruptures by MR imaging : a pictorial review

V Tang, A Jain
South Manchester University Hospitals, Manchester

Many studies have shown that MR is the most accurate method of imaging to diagnose the rupture of breast implants, with a sensitivity of 72-94% and a specificity of 85-100%. During 2001-2004, 66 patients presented with symptoms of breast implant rupture in our breast unit and subsequently had MR breast imaging. The patients were scanned with a dedicated surface breast coil and a 1.5T scanner, and the MR images were interpreted by 2 consultant radiologists. There were a total of 105 silicone breast implants, with implants ranging from 1 to 30 years old. The majority of the implants were between 10 and 20 years old. We reviewed the MR images and reports of this series, which showed 18 intra-capsular ruptures, 9 extra-capsular ruptures and 7 suspicious ruptures. Other MR findings included free silicone, silicone granulomas in soft tissue and lymph nodes, capsular contracture and focal herniation of the implants. The purpose of this review is: (1) to discuss the MR technique used to image the silicone implant. (2) to show the types of breast implants we encountered (3) to illustrate the different signs of implant rupture and subsequent complications seen on MR from our series. One of our cases showed an incidental breast carcinoma detected on the MR, performed for a patient with suspected implant rupture who had no history of breast cancer.

P.23

CAD prompt size and reader behaviour - a UK screening programme evaluation

FJ Gilbert¹, SM Astley², CRM Boggis², MGC Gillan¹, PM Griffiths², SW Duffy³, MA McGee⁴

¹ University of Aberdeen, Aberdeen, ² University of Manchester, Manchester, ³ Wolfson Institute of Preventative Medicine, London, U ⁴ Christchurch School of Medicine, Christchurch

Computer aided detection (CAD) has been designed to aid human detection of breast cancer either by reducing oversight or by detecting cancers at an earlier stage.

The influence of CAD prompting on reader behaviour was evaluated in 10,267 mammograms, including 315 biopsy proven cancer cases detected at the evaluation mammogram and in the subsequent 6 years. Mammograms previously double read were re-read by a single reader using CAD. Of these 119 (38%) had a prompt in the area of the tumour (94% of tumours detected at the evaluation screen and 17% of the subsequent tumours).

Of the 119 cancers with a prompt in the region of interest, prompt size was available in 110 (92%) cases. There was a significant trend of increasing likelihood of a decision to recall with prompt size ($p=0.04$). Of those above the median prompt size, 88% were the subject of a recall decision, whereas of those with prompt sizes below the median, 75% had a recall decision.

P.22

Has two-view mammography decreased the number of interval breast cancers in Wales?

K Gower-Thomas, G Osborn, E Edwards, J Evans, G Stevens, J Pollitt
Breast Test Wales, Cardiff

We aim to assess whether there has been a reduction in numbers of interval cancers diagnosed in Wales following the introduction of two-view mammography at incident rounds in 2001.

Women aged 51 to 65 years having incident round screening between 1998 and 2003 in Wales were included in the study and followed up for 36 months. Women who had self-referred, with cancer recurrence (local / contra-lateral disease), DCIS / LCIS, cytologically verified disease, bilateral disease and other malignant tumours in the breast were excluded. Interval cancers presenting in this group up to June 2004 were identified using cancer registry records.

23217 women were screened between 1998 – 2000 in Southeast Wales with a further 13420 screened between 2001 – 2002 in the same region after introduction of two views at the incident round. Interval cancer rates per 10000 women screened in the Southeast were as follows. If initially screened in 2000, rates were 2.75 cancers after 1 – 12 months, 17.85 after 13 – 24 months and 13.73 after 25 – 36 months. For those screened in 2001 rates were 3.2 / 11.2 / 8 for the same time periods. For those screened in 2002 rates were 2.79 after 12 months and 11.16 after 24 months. Rates are also available for the other regions in Wales and show a similar decline.

Two-view mammography has decreased interval cancer rates in Wales. This decline has implications for quality of patient care and has a role to play in reducing litigation.

P.24

Is it possible to predict which microcalcification may be adequately biopsied by 14 g core rather than VACB?

A McCall, C Cordiner, HM Dobson, J Litherland
West of Scotland Breast Screening Programme, Glasgow

Sampling all microcalcification with VACB has significant cost implications. Our study was designed to assess whether some microcalcifications may be adequately biopsied by 14g core biopsy rather than attempting an initial sample with VACB.

In total 115 women who had 14g core biopsy were included in the study. Of these, at first core biopsy, 63% were deemed to have an adequate diagnostic biopsy at the MDM with representative calcium retrieval, no repeat biopsy and no subsequent upgrade at surgery. Clinical Guidelines for Breast Cancer Screening Assessment (NHS BSP Publication 49) has since been published and states that a minimum of 3 flecks of microcalcification should be obtained. If this specification is added to our data, the success rate falls to 42%. However, if a patient has casting microcalcifications suspicious of DCIS in the breast, a success rate with 14g core biopsy approaching 80% can be expected, even if no calcifications are obtained within the specimen.

The density of scattering of microcalcification was assessed using a grid of 5 mm squares. In cases where there were fewer than 5 microcalcifications within a 5 mm square, the operator was significantly less likely to obtain a diagnostic biopsy in fatty breasts, compared with fatty glandular or dense patterns ($p<0.05$).

It is therefore possible to be selective about which microcalcifications can be biopsied with a 14 g core needle and which with VACB.

P.25**Ultrasound staging of the axilla in primary breast cancer**

A Aylwin¹, N Wakeham², N Barrett², S Comitis², S McLaggan²,
K Satchithananda², R Williamson², N Zaman², W Svensson²
¹ St. Margaret's Hospital, Epping, ² Charing Cross Hospital, London

Axillary lymph node status is the major prognostic factor in women diagnosed with breast cancer. Preoperative staging with axillary ultrasound (AUS) can identify patients with nodal metastases who are therefore unsuitable for axillary sampling or sentinel node biopsy. Published studies on AUS and needle biopsy have shown sensitivities of 26-74% and specificities of 80-99%, but using differing criteria. The aim of this study was to identify the most sensitive and specific AUS features. Criteria for nodal abnormality were length:width ratio <2, cortical eccentricity, cortical thickness >2mm and absence of the hilum. 50 consecutive patients with suspected breast cancer received AUS, with fine needle aspiration (FNA) on all abnormal nodes. AUS results were then compared with the FNAC and/or final surgical histology. Lymph nodes were identified in 45/50 (90%) patients. 27/50 had involved nodes on surgery/FNAC. AUS had an overall sensitivity of 93%, with a specificity of 96% (PPV = 96%, NPV = 92%). Assessment of each criterion is shown in the table below.

Criteria	Sensitivity (%)	Specificity (%)
Length: width ratio<2	70	89
Cortex >2mm	93	94
Eccentric cortex	26	100
Absence of hilum	37	100

These results compare favourably with the published data, and suggest that patients with abnormal AUS should progress straight to axillary node clearance and not be considered for sentinel node biopsy, with its inherent cost implications.

P.27**MRI guided 10g vacuum-assisted biopsy of the breast: experience with the Vacora Biopsy System**

W Teh, V Patel, N Kandasamy
Northwick Park Hospital, Harrow

A total of 22 women were referred for MRI guided 10G vacuum biopsy of 23 lesions with the Vacora (Bard) biopsy between September 2003 and July 2005. All lesions were not amenable to mammographic or ultrasound guided biopsy. The diagnostic MRI were performed for investigation of axillary metastatic adenopathy in 3 cases, further assessment of newly diagnosed primary invasive carcinoma in 6 and family history screening in 3 and as part of further imaging work-up in the rest. One woman underwent MRI-guided FNA due to the sub-areolar position of the lesion. A woman with bilateral lesions detected had only one lesion visible at the time of biopsy. Following biopsy, 5 had invasive carcinoma diagnosed (23.8%), one had widespread DCIS (4.8%), one had atypia (4.8%). There were 12 benign results (57.1%) and one non-diagnostic (B1) biopsy (4.8%). The results of the biopsies influenced management in 11/21 (52.4%). We conclude that MRI guided vacuum biopsy can be accurately performed in the majority of cases and is a useful adjunct in the management of MRI detected lesions.

P.26**Audit of male breast disease: an 8 year retrospective review of imaging and pathological findings**

S McLaggan, A Aylwin, N Barrett, S Comitis, W Svensson, N Zaman
K Satchithananda
Charing Cross Hospital, London

Male breast disease makes up a small but important part of the work of breast units. We reviewed the previous 8 years experience of male breast disease at our institution, establishing the range of pathologies, both benign and malignant, and their imaging features. All consecutive cases of male breast pathology in the previous 8 year period were identified retrospectively from pathological and radiological databases. Ultrasonic and mammographic features were reviewed and correlated with histology where available. Total number of cases: 385 (21% with imaging and histology, 79% with imaging only). Gynaecomastia: 82%; Benign solid lesions: 7%; Malignant solid lesions: 3%; Others: 8%. While the majority of patients are diagnosed with simple gynaecomastia, a significant minority are diagnosed with malignancy. The investigation of choice in most of these patients was ultrasound, with mammography and/or biopsy useful adjuncts. This audit shows that ultrasound is a valuable and reliable tool in the investigation of male breast disease and should be mandatory in patients with a palpable abnormality.

P.28**Accurate pre operative planning of axillary surgery in breast cancer patients by combining ultrasound with patent blue dye sentinel node biopsy**

J Aitken, I Anwar, WP Whitear, A Tate, T Archer, C Mortimer
Ipswich Hospital Breast Unit, Ipswich

The technique recommended for introduction of sentinel lymph node biopsy into breast units throughout the UK uses patent blue dye and a radiolabelled tracer. Using a radiolabelled tracer in a district general hospital is cumbersome. Many centres in the USA have abandoned the tracer in favour of blue dye alone. Pre operative axillary ultrasound scan (USS) is a safe, non invasive method of axillary assessment used in our radiology department, (90% specificity, 57% sensitivity).

Between May 2004 and May 2005 patients whose imaging suggested breast carcinoma underwent axillary USS at the time of initial consultation, before biopsy. Those with a normal axillary USS were offered a patent blue dye assisted axillary node procedure to remove the "sentinel" node, along with a standard 4 node sample. 84 patients have so far undergone such surgery. The sentinel node was identified in 90% of the patients and there is a 91.7% correlation between normal axillary USS and normal histology of the blue node as well as the 4 node sample. The 7 patients with involved nodes had further axillary treatment. 27 had involved axillary lymph nodes on US. They underwent axillary clearance. 18 had histological involvement.

This is a time efficient and accurate technique which employs the principles of sentinel node surgery avoiding the difficulties associated of a radiolabelled tracer. Unlike sentinel lymph node biopsy it includes pre operative assessment, allowing more accurate surgical planning. 90% of patients have the correct initial axillary procedure.

P.29**A 'package' to facilitate the implementation of the NICE guidelines for familial breast cancer**

D Dalglish, D Goddard, P McLarnon.
Bath Breast Unit, Bath

In May 2004 the National Institute for Clinical Excellence (NICE) issued guidelines for the management of familial breast cancer. We present the package, which we have developed for the implementation of the guidelines within our secondary care family history clinic at the Royal United Hospital NHS Trust in Bath.

The package includes:

1. User-friendly tools for risk assessment and referral guidelines.
2. Standard letters sent to women on our family history screening programme prior to issue of the guidelines.
3. Protocols for triaging new referrals, the consultation in the family history clinic and imaging.

AUTHOR INDEX

Aitken J	P.28	Lawrence G	5.2, 5.6
Anwar I	P.28	Lee AHS	5.1, P.3
Archer T	P.28	Lee M	5.2
Astley SM	P.23	Lewis D	P.17
Aylwin A	P.25, P.26	Liston J	P.19, P.20
		Litherland J	P.24
Bacon S	P.10	Loane JF	P.12
Barrett N	P.25, P.26	Lyburn ID	P.18
Bishop H	5.2		
Boggis CRM	P.23	Macartney J	5.2
Bradley C	P.6	McCall A	P.24
Brenner RJ	2.1, 6.2	McGee MA	P.23
Britton PD	P.14	McLaggan S	P.26
Brook D	P.15	McLarnon P	P.29
Burrell HC	5.1, P.3	Manuel DD	P.10, P.20
		Maxwell AJ	P.5
Chakrabarti J	5.1, P.3	Michell M	P.7, P.8, P.17
Chambers RJ	P.18	Mills TD	P.18
Chitnis RL	P.6	Mortimer C	P.28
Clements K	5.2	Muhammed KB	P.11
Comitis S	P.25, P.26		
Cordiner C	P.24	Osborn G	P.22
Cornford EJ	4.1, P.3	O'Sullivan E	5.6
Crotch-Harvey MA	P.4		
		Parker E	P.1
Dalgliesh D	P.29	Patel V	P.27
Dall BJG	5.4, 5.5, P.10	Perren TP	5.4
Denton E	1.1	Pinder SE	P.14
Dobson HM	5.3, P.9, P.24	Pollitt J	P.22
Dodwell DJ	5.4	Porter GJR	5.1, P.3
Doig TN	P.12	Purushotham A	4.2
Duffy SW	P.23		
Dutt N	P.7, P.8, P.17	Ramsdale M	1.3
		Rink JA	P.11
Edmunds T	P.16		
Edwards E	P.15, P.16, P.22	Sanghera BS	P.18
Ellis IO	5.1	Satchithananda K	P.25, P.26
Evans AJ	2.3, 5.1, P.3	Simpson J	P.19
Evans J	P.22	Sinnatamby R	P.14
		Smart LM	P.12
Flis C	P.7, P.8, P.17	Smith JL	P.2
Franks KN	5.4	Smith ME	P.12
		Steel JR	P.11
Gilbert FJ	P.23	Stevens G	P.22
Gilchrist AM	P.12	Svensson W	P.25, P.26
Gillan MGC	P.23		
Goddard D	P.29	Tang V	P.21
Green JS	P.18	Tappenden N	5.6
Green RAR	P.18	Tate A	P.28
Griffiths PM	P.23	Teh W	P.27
Gower-Thomas K	P.15, P.16, P.22	Tetlow RL	P.6
		Turnbull L	P.13
Hamilton LJ	P.3		
Harnett A	4.4	Wakeham N	P.25
Harvard AC	P.2	Wallis M	1.2, 5.2, 5.6
Henderson RG	P.1	Walsh JS	P.12
Holgate C	P.11	Warren R	2.2
Hubbard AE	P.6, P.13	Watkins RM	P.11
		Weiler-Mithoff EM	6.1
Jain A	P.21	Wheaton M	5.2
James JJ	P.3	Whitear WP	P.28
Jolley I	5.5	Williamson P	P.25
Jones PA	P.11	Wilson ARW	1.4, P.3
		Wong WL	P.18
Kandasamy N	P.27		
Kearins O	5.2, 5.6	Zaman N	P.25, P.26
Kolpattil S	P.4		
Kumar S	5.4		

**Royal College of Radiologists
Breast Group
Annual Scientific Meeting**

2006

Monday 6th - Tuesday 7th November 2006

**Edinburgh Conference Centre
Heriot-Watt University
EDINBURGH**

Secretariat:

Hampton Medical Conferences Ltd
113-119 High Street
Hampton Hill
Middlesex, TW12 1NJ, UK

Tel: 020 8979 8300

Fax: 020 8979 6700

Email: hmc@hamptonmedical.com

Website: www.hamptonmedical.com