
Abstracts for poster presentation at the Association of Breast Surgery Conference & AGM, 21st & 22nd May 2012, Bournemouth International Centre

P1. B3 (Indeterminate) biopsy - screening round alters rate of malignancy.

Richard Hunt, Amanda Thorne, Elizabeth Burd, Jasper Gill
Musgrove Park Hospital, Taunton, UK

Introduction: One percent of breast screened women have an abnormality which requires core biopsy. The majority of these will be diagnostic, however some are graded as B3 (lesion of uncertain malignant potential). Options include repeat core biopsy and diagnostic open (surgical) biopsy. In situ or invasive malignancy is found in up to one third of these cases.

Methods: All women who had NHS BSP screening mammograms and subsequent core biopsy graded as B3 at Musgrove Park from 2000–05 were identified. The cases were reviewed and the final histology was identified

Results: 51 women had B3 biopsies; mean age 56.1 years (range 50–83 years) 38 of the women had their B3 lesion excised. 15 out of 38 excisions were malignant (39%). 13 women were in the prevalent (first) screening round and the rate of malignancy was 15% (2/13). 25 were in incident (subsequent) screening rounds and malignancy was present in 52% (13/25) (Fishers exact test $p=0.03$)

Discussion: The final rate of malignancy in screen detected B3 lesions at Musgrove Park is 39% and comparable with published studies. The different rate of malignancy between the prevalent round, (15%) and incident rounds (52%) has not previously been reported. This difference should inform our discussion with patients and may alter management. We should be encouraging patients to have B3 lesions excised, especially if they are in the incident screening rounds, as half of these lesions will be malignant.

P2. Sentinel lymph node biopsy before mastectomy and immediate breast reconstruction may predict post-mastectomy radiotherapy and improves the choice of reconstruction.

Gurdeep Singh Mannu, Ali H. Navi, Amir Morgan, Shaukat M. Mirza, Sue K. Down, Naheed Farooq, Amy Burger, Magad Hussien
Norfolk and Norwich University Hospital, Norwich, Norfolk, UK

Background: Adjuvant post-mastectomy radiotherapy (RT), which is often unpredicted, is known to negatively affect the cosmetic outcome of immediate breast reconstruction (IBR).

Aim: To investigate the role of sentinel lymph node biopsy (SLN) in predicting RT and improving the choice of IBR.

Patients and Methods: All patients who had mastectomy and IBR between January 2004 and January 2007 were reviewed retrospectively. Axillary staging (clearance or SLN) was performed at the same time until

October 2005 (Group 1), when the Unit's protocol was updated to perform SLN initially prior to mastectomy and IBR (Group 2). Patients in group 2 with positive SLN were offered either a delayed reconstruction or a temporary sub pectoral immediate tissue expander, while all options were offered if SLN was negative and in group 1 patients.

Results: 139 patients were reviewed. 20 patients received unexpected RT in group 1 (14 tissue expander, 4 Latissimus Dorsi flap with an implant and 2 DIEP flaps) compared to 11 patients in group 2 who had a temporary tissue expander due to expected RT ($P=0.03$). Unexpected RT caused delayed complications in 14 patients (70%) compared to no delayed complications in patients who received expected RT in group 2.

Conclusion: SLN biopsy before IBR helps to predict RT and avoids its negative cosmetic effect on breast reconstruction. Patients with positive SLN biopsy are best offered a temporary sub pectoral tissue expander for IBR.

P3. Patient Satisfaction and Abdominal Wall Function: TRAM versus DIEP Flap Breast Reconstruction

John Miles¹, Adeel Bajwa², Phillip Polson², Collen Muberekwa²

¹Queen Elizabeth Hospital, Birmingham, UK

²Good Hope Hospital, Birmingham, UK

Introduction and Aims: Patient satisfaction and abdominal wall function after TRAM (Transverse Rectus Abdominis Myocutaneous) and DIEP (Deep Inferior Epigastric Artery Perforator) flap breast reconstruction will help inform both patients and surgeons. This questionnaire study assessed cosmetic and abdominal wall outcome after these reconstructions performed at a single institute.

Materials and Methods: All patients ($n=63$) who had undergone either TRAM or DIEP reconstruction at Good Hope Hospital over a period of 4 years were sent a questionnaire assessing their cosmetic satisfaction and function of their abdominal wall approximately one year post-reconstruction.

Key Results and Supporting Statistical Analysis: The response rate was 68%. 9 patients who had DIEP reconstructions (median age 50, range 47–57) and 37 patients with DIEP reconstructions (median age 46, range 19–64) were included. Patients were more satisfied with the cosmetic outcome of TRAM flaps compared to DIEP flaps (Mann Whitney U test, $p=0.0332$). No significant difference between abdominal wall function ($p=0.2966$) or activities of daily living ($p=0.7938$) were detected.

Conclusions: Patients were more satisfied with the cosmetic results of TRAM flaps compared to DIEP flaps. However there was no significant difference in functional outcome, both in terms of abdominal wall strength and effect upon activities of daily living between the two groups.

P4. What do Preoperative Scintigrams add to Sentinel Lymph Node Detection in Breast Cancer?

Nikhil Sharma, Alp Notghi, Martin Sintler

Sandwell and West Birmingham Hospitals (SWBH) NHS Trusts, West Bromwich, UK

Background: Sentinel Lymph Node (SLN) identification is achieved with combined preoperative isotope, in theatre blue dye injection and use of a gamma probe. Scintigram use for preoperative SLN identification and localization is controversial. Studies suggest that scintigrams add little to SLN detection and there are issues of patient dissatisfaction, cost and time expense. The aim of this study was to evaluate the clinical value of scintigrams and to compare this to intraoperative SLN identification techniques.

Methods: Retrospective study using all patients undergoing SLN biopsy (SLNB) between April 2010-11. Scintigram reports, operation notes and pathology results were analysed to obtain the required data.

Results: 228 patients underwent SLNB, 9 patients excluded as no notes available. 34 patients did not have a scintigram (time constraints and isotope availability). From the remaining 185 patients, 171 (92%) scintigrams identified a node and 14 (7.5%) failed to do so. Intraoperatively, 97% demonstrated a "hot" node using the gamma probe and in 93% a "blue" node identified. The SLN identification rate with probe or blue dye was 98%.

Conclusion: Intraoperative SLN identification is more accurate and reliable. Scintigrams add little to patient management and their routine use should be abandoned.

P5. Repeat surgery following Breast Conservation and Intra-operative Sentinel Lymph Node Analysis for Breast Cancer

Natalie Dabbas¹, Ramsey Cutress², Martin Wise¹, Constantinos Yiangou¹, Avi Agrawal¹

¹Queen Alexandra Hospital, Portsmouth, UK

²Princess Anne Hospital, Southampton, UK

Introduction: Intra-operative sentinel node analysis (IOA) for breast cancer reduces the need for a second operation by revealing metastasis intra-operatively, allowing immediate axillary clearance. Critics argue that a limited number of patients derive benefit, mainly because further surgery is often required for another reason. We aimed to identify the proportion of women avoiding further surgery by the use of IOA, taking into account those who required further surgery for reasons other than axillary node metastasis.

Methods: All patients undergoing sentinel node biopsy with IOA as part of breast conservation surgery over one year were reviewed. Patient demographics, margin positivity, sentinel node metastasis, requirement for further surgery, and cavity shave involvement were analysed.

Results: 253 patients were analysed. IOA revealed metastasis in 56 (22.1%) patients who all underwent immediate axillary clearance. 43 of these (17% of total) did not require further surgery for another indication. 39 (15.4%) patients required further oncological surgery: 16 excision of margins; 13 completion mastectomy; 6 excision of margins followed by mastectomy; 3 completion axillary clearance; and 1 excision of recurrence. 20.6% had involvement of any circumferential histological margin. Cavity shaves were performed in 28.5% patients, the majority of which were clear of malignancy.

Conclusions: Approximately 15% of patients undergoing breast conservation surgery for breast cancer require further surgery to the breast. A further 17% were saved repeat surgery by the utilisation of intra-operative analysis since they had immediate axillary clearance with later histologically proven sentinel node metastasis, and had NOT required further surgery for another reason.

P6. The experience of performing breast cancer surgery as day cases in a single institution

Denise Chan, Tasha Gandamihardja, Jackie Lewis, Katy Hogben

Charing Cross Hospital, Imperial College Healthcare NHS Trust, London, UK

Introduction: The NHS aims for 75% of all elective surgeries to be performed as day cases. This is highly desirable as it reduces the risk of thromboembolic disease and hospital acquired infections, improves patient satisfaction and reduces costs. We investigate what proportion of surgeries for breast cancer, over a 12 month period, were performed as day cases in a single institution.

Methods: Data was collected retrospectively utilising departmental databases, for all patients having elective breast surgery between April 2010 and March 2011. According to the unit's existing practice, operations deemed suitable as day cases were wide local excisions, sentinel lymph node biopsies, re-excision of margins, implant-based reconstruction, nipple procedures and autologous free fat transfer. Non-day case surgeries were mastectomies, axillary lymph node clearances and any autologous reconstructive procedure.

Results: 648 breast surgeries were performed on 529 women and 3 men (mean age 55.9 years, range 16-95 years). 71.6% (n= 464) were for breast cancer. According to our unit's policy, of the breast cancer cases, 56.5% (n=262) were expected to be performed as day cases. 84.4% (n=221) were successfully discharged home on the same day, with 15.6% (n=41) unexpectedly requiring an overnight stay. No patient was readmitted following same day discharge.

Conclusions: We have found that a large number of breast cancer surgeries could be performed as day cases. Effective pre-operative assessment, nurse-led patient discharge, good post-operative support for patients and ensuring the availability of robust social care provision may further increase the number of day case breast cancer surgeries.

P7. When should axillary drains be removed post axillary dissection?

A systematic review of randomised control trials.

Thomas Kelley, David Thomson, Dominic Furniss

University of Oxford, Oxford, UK

Introduction: The aim of this systematic review was to determine an evidence-based optimal strategy for management of drains following axillary dissection. Despite randomised control trials addressing the issue over the past 20-30 years, there is no widely accepted consensus as to when drains should be removed post axillary dissection.

Methods: We searched the electronic databases Medline, Embase, CINAHL, Cochrane Library of Systematic Reviews and Web of Science Citation Index. References within identified studies were also searched. Seven studies were independently identified and data extracted according to a pre-determined proforma based on the Cochrane Collaboration data extraction template by two independent researchers. Validity was determined according to a published standard. Discrepancies were resolved by consensus.

Results: There was no difference in infection rates between early and late drain removal, hospital stay was reduced when drains were removed earlier, and higher total volume drainage prior to drain removal predicted subsequent seroma formation. The optimal timing of drain removal post axillary dissection could not be determined from the literature.

Conclusions: There is a need for an adequately powered and well designed multi-centre randomised controlled trial of drain removal after axillary dissection. This should determine both the most cost-effective strategy, and the effects of timing of drain removal on patient reported outcome measures in this commonly performed operation.

P8. 17 years audit of breast lesion Fine Needle Aspiration Cytopathology (FNA) versus Histopathology outcome; with a critical discussion of the NHSBSP standards

Charles Keen¹, Jennifer King¹, Douglas Ferguson²

¹Royal Devon and Exeter NHS Foundation Trust, Exeter, Devon, UK

²Royal Devon and Exeter NHS Foundation Trust and Peninsular Medical School, Exeter, Devon, UK

Introduction: Breast FNA use has declined significantly in favour of core biopsy, making audit of the quality even more important. We reviewed

our audit experience, and considered the relevance of the existing standards.

Methods: 17 annual audits were tabulated from 1991 to 2010, trends in resulting predictive values were analysed. The NHSBSP screening standards were employed, but symptomatic patients were included.

Results: FNAs increased from 175(1991), peaked at 1227(2003), then declined to 253 in 2010. The PPV(C5) was within current guideline throughout, and for the most recent 9 years was 100% (no false positives). The PPV(C4) was above the 70-80% preferred value for 15 of the years, and has been 100% for the last 2 years. The PPV for C3 varied between 60% and 14%, average 37%. Suspicious rate (C3&4) in the 1990s averaged 28%, in the 2000s it averaged 8% (preferred value <15%). Total inadequate rate increased from average 21% in the 1990s to 44% in the 2000s. Inadequate rate from cancers fluctuated between 30% and 11%, and reached guideline (<10%) in 2010.

Conclusion: The quality of the breast FNA service has improved over the past two decades. PPV for C4 was high, reflecting caution in these rare cases. Our low suspicious rate now leaves too few C3&4s for meaningful statistical calculation. Most of the standards remain relevant and helpful, but the total inadequate rate is unrealistic owing to the current selection of patients – FNA is often used as reassurance for clinically non-suspicious lesions.

P9. Do surgeons see benefit in operating on the primary in Stage IV breast cancer?

Anushka Chaudhry, Zenon Rayter
Bristol Royal Infirmary, Bristol, UK

Introduction: Historically, patients with established Stage IV disease have been referred for primary palliative management with surgery usually aimed towards locoregional control. There is concern that resection of the breast primary could disrupt immunologic balance and propagate tumour seeding.

Method: We performed a postal survey of 260 Consultant Breast Surgeon members of the Association of Breast Surgery (UK) in order to define factors that influence the decision to surgically treat the breast primary with regards to tumour biology and metastatic variables.

Results: Eighty two (32%) responded Ninety percent of surgeons would consider surgery of the breast primary in Stage IV disease. There was significant age bias toward the younger age group; 75.6% treating age 20-50 years; 66% age 50-60 and 18.3% treating the 70-80 year olds with none considering patients over 80 years. No more than a third were influenced by tumour biology factors; 61% were positively influenced by the sole presence of bone metastases and 55% if only one distant site was affected. 86.6% believed duration of response to systemic therapy influenced decision for surgery. Sixty percent didn't know of evidence relating to durable benefit of treating patients with metastatic disease and 36.6% believed that removing the primary tumour significantly eradicated a source of metastases. Nearly half of surgeons believed that both debulking surgery increased the efficacy of systemic therapy and surgery and anaesthesia caused significant immunosuppression. Only 24.3% felt operative therapy can achieve complete remission and long-term survival.

Conclusion: The oncology community remains divided and management of these patients warrants the perspectives of the multidisciplinary team.

P10. Staging Investigations in Breast Cancer – An Email Survey of ABS Members

Natalie Dabbas, Avi Agrawal
Queen Alexandra Hospital, Portsmouth, UK

Introduction: Certain clinicopathological factors are associated with a higher likelihood of metastatic disease in breast cancer. Early identification of metastasis is key in determining initial treatment. However, there remains little consensus as to which patients require staging, which type and when this should be performed.

Aims: To identify UK surgeon preferences and breast unit practice with regards to staging investigations.

Methods: A survey was disseminated to members of the Association of Breast Surgery by e-mail, containing questions regarding: surgeon/breast unit demographics; availability and use of staging investigations; and local policy on choice of pre/post-operative staging investigations. Several patient scenarios were also presented to determine surgeons' choices for staging.

Results: 123 of 474 recipients completed the survey (25.9%). Respondents listed investigations routinely employed for patients diagnosed with early breast cancer. Responses included: Bloods (72% respondents), axillary ultrasound (67%), liver ultrasound (2%) chest X-ray (36%), and CT scan (1%). Three areas were stated as contributing to a unit's decision to undertake staging by CT scan: tumour size (49% pre-operative, 38% post-operative); axillary nodal status (77%; 90%); and plan for neo-adjuvant/adjuvant chemotherapy (68%; 20%). There was widespread variation as to specific criteria for staging based on tumour size and nodal status. There was also considerable variation in the choice of staging investigation for the clinical scenarios presented. Only 14% respondents felt the choice of investigations would be different if no financial constraints existed.

Conclusions: There remains wide variation with regards to staging investigations in breast cancer. National guidance may help to unify practice.

P11. Clinical follow up following breast cancer - Is five years too long?

Polly King¹, Donna Egbeare¹, Douglas Ferguson²
¹Royal Devon and Exeter Hospital, Exeter, UK
²Royal Devon and Exeter NHS Foundation Trust and Peninsular Medical School, Exeter, Devon, UK

Introduction: Follow up after breast cancer treatment aims to detect local recurrence or new primary disease in the treated or contralateral breast. There are no conclusions from data examining the optimum location, frequency and duration of follow up and many institutions follow guidance provided by local cancer networks. The aim of this study was to establish what issues are discussed during follow up of breast cancer patients and to observe any patterns in respect of time since diagnosis.

Methods: Consecutive patients who had been treated for breast cancer attending follow up over five months were studied. The time from diagnosis and any issues raised by the patient or detected by the clinician were entered onto a database.

Results: 323 patients were studied with a mean follow up of 38 (5-156) months. Over 50% of patients raised an issue. These included fear of recurrence (5%), asymmetry or reconstructive issues (9%) and pain (10%). 23 (7.1%) experienced side effects from their medication. 127 patients had three years or more follow up and of these 51% had issues raised by themselves or the clinician. The same spectrum of issues was raised.

Conclusion: Follow up after breast cancer is a multifaceted and dynamic process. This study demonstrates that patients have a range of issues which require a specialist and multidisciplinary approach even beyond three years. The benefits of continued specialist follow up are beyond the simple identification of recurrence but facilitate an enhancement in survivorship.

P12. Is there a Relationship between Ethnicity and Locally Recurrent Breast Cancer?

Gabriella Yongue¹, Daniel Leff², Thanos Athanasiou², Ara Darzi², Rajiv Vashisht³
¹Imperial College School of Science, Technology and Medicine, Imperial College London, UK
²Hamlyn Centre for Robotic Surgery, Institute of Global Health Innovation, Imperial College London, UK
³Department of Breast Surgery, West Middlesex University Hospital NHS Trust, London, UK

Background: This study evaluates the influence of ethnicity on overall survival (OS), disease free survival (DFS), and locoregional recurrence (LR) from breast cancer, accounting for the influence care pathway delays and socioeconomic deprivation.

Methods: A retrospective record review of 119 women diagnosed with primary breast cancer and whom completed 5 year follow-up. Effects of ethnicity on delay to presentation (patient-mediated), pathway delay in care (provider-mediated), tumour, nodal and metastases classification at diagnosis were described. Kaplan-Meier (KM) survival curves were analysed and independent predictors for censored outcomes (OS, DFS, and LR) were identified by conducting adjusted Cox proportional hazard regression analysis.

Results: Women from ethnic minorities presented with more advanced disease but did not wait longer with symptoms until prior to presentation. A greater proportion of Caucasian women were free from recurrence at 5-years (88%) compared to women from ethnic minorities (73%). KM survival curves demonstrated ethnicity was associated with LR ($p=0.01$) but not with OS ($p=0.49$) or DFS ($p=0.73$). However, after controlling for tumour differentiation, age at diagnosis, and symptom duration, ethnicity's effect on LR was no longer significant ($HR=1.59$, 95% confidence interval (CI) = 0.22-11.49, $p=0.65$). Racial differences in LR were not mediated by significant differences in positive margin status.

Conclusions: Patients from ethnic minorities may be at greater risk of developing LR compared to white Caucasian women, but do not appear to be at a survival disadvantage. The results highlight the need to further assess genetic, behavioural and cultural factors accounting for aggressive disease presentation amongst ethnic minority women.

P13. A United Kingdom National Survey of Breast Surgeons on Primary Endocrine Therapy of Early Operable Breast Cancer

Suzanne Wylie¹, Duraisamy Ravichandran²

¹University College London, London, UK

²Luton & Dunstable Hospital NHS Foundation Trust, Luton, UK

Introduction: A significant proportion of elderly breast cancer patients in the UK have no surgical treatment recorded (*All Breast Cancer Reports 2006 and 2007*) and appears to be treated with primary endocrine therapy (PET) only. Despite this, PET remains one of the poorly studied areas in breast cancer therapy and very little is known about its practice in the UK.

Materials and Methods: We sent a questionnaire comprising of 14 questions to 489 breast surgeons who are members of the Association of Breast Surgery, UK.

Results: 228 (47%) were returned. 93% use PET in early operable breast cancer. Main indications were unfit for surgery under GA or patient preference but 7.4% would recommend PET even if patient is fit. Letrozole is the drug of choice for 76% and tamoxifen in 10%. 77% have not formally audited their PET patients. If the first drug failed to control the tumour, 51% try another endocrine agent, 18% consider surgery and 2.3% use radiotherapy. Over 70% underestimated the expected average survival of a woman aged 80 living in the UK.

Conclusions: This survey, for the first time, sheds some light on the practice of PET in the UK. 93% of UK breast surgeons use PET in elderly with surgically resectable breast cancer. Most use an aromatase inhibitor. While most use it in unfit, frail ladies, a minority treat even fit elderly women with PET. Most have not audited the outcome of patients treated with PET and underestimate the expected survival of elderly patients.

P14. Anxious breast patients decline participation in clinical surveys more frequently

Sa'ed Ramzi, Peter Cant

Plymouth Hospitals NHS Trust, Plymouth, Devon, UK

Introduction: Clinical surveys are commonplace and with increasing clinical governance mandatory. Surveys could be valuable clinical tools provided the questions are appropriate and the sample is not biased. We

wished to evaluate a population of female patients referred to a symptomatic breast clinic to determine any factors that might influence potential participation.

Material and Methods: Patients attending a one-stop breast clinic were asked if they would consider participation in clinical surveys and their responses recorded in a prospective database. Consenting (CtP) and non consenting (NCtP) patients were compared, using multiple logistic regression, with respect to; age, method of referral (2 week wait vs. non urgent), final diagnosis (cancer or not), and anxiety levels before consultation, using a 5 point linear analogue scale (LAS).

Results: All new referrals from June to October 2011 ($n=438$) were assessed. CtP; $n=338$ (77.2%) and NCtP; $n=100$, (22.8%). There was no difference in mean age; CtP; 44.3y vs. NCtP; 43.9y ($P>0.05$), 2WW referral; CtP; $n=200$, 59.2% vs. NCtP; $n=60$ (60.0%), ($P>0.05$), or cancer diagnosis; CtP; $n=23$ (6.8%) vs. NCtP; $n=6$ (6.0%), ($P>0.05$). There was a significant difference ($P<0.01$) in the relative proportions of the most anxious patients (LAS 5); CtP; $n=48$ (14.2%), NCtP; $n=25$ (25.0%), while in LAS 1-4 combined; CtP; $n=290$ (85.8%), and NCtP; $n=75$ (75.0%).

Conclusion: Regardless of age, final diagnosis, and referral method; more anxious female patients are more likely to decline participation in clinical surveys.

P15. Bone Mineral Disease & Aromatase Inhibitors for Breast Cancer: Are we treating patients appropriately? Is there a link between breast density and osteoporosis development?

Louise Olson, Jenifer Sinkler, Sumohan Chatterjee, Terence O'Neil, Seema Datta, Zahida Saad

Salford Royal Foundation Trust, Manchester, UK

Introduction: Breast cancer treatment with aromatase inhibitors (AI) is linked to osteoporosis. Current literature may suggest a correlation between breast density and osteoporosis; thus we have hypothesised that women with an increased breast density on AI may have a reduced risk of osteoporosis. Current recommendations state women on AI should have Dual Energy X-ray Absorptiometry (DEXA) to assess bone mineral density and identify those at risk of fragility fractures. Treatment includes bisphosphonates with supplemental calcium and vitamin D.

Methods: A retrospective study of 210 patients having a DEXA in 2010 was performed from the radiology database. Breast density was measured from mammograms using the Breast Imaging Reporting and Data System (BIRAD) and scored from I to IV (I fatty breasts, IV very dense breasts). A comparison of these groups was made.

Results: Of the 210 women, there were 42 (20%) with osteoporosis, 88 (42%) with osteopenia and 80 (38%) with no bone disease. 36 (86%) patients with osteoporosis are on treatment. All are prescribed calcium and vitamin D. Using standard t-testing, there is no correlation between breast density (BIRAD score) and osteoporosis ($p>0.05$).

Conclusions: Patients with increased breast density (BIRAD III/IV) appear to have the same risk for osteoporosis. Patients with bone mineral disease are being appropriately managed by the breast department. Osteoporosis development has many aetiological factors, some have not been considered in this study.

P16. Rate of Conversion from Implant-based to Autologous Breast Reconstruction and an Analysis of the Motivating and Risk Factors for Conversion

H. Staley, S. Tadiparthi, N. Collis, J. O'Donoghue

Royal Victoria Infirmary, Newcastle-Upon-Tyne, UK

Introduction: Compared to autologous reconstruction, implant-based reconstruction offers shorter operative times and faster recovery. However, complications e.g. capsular contracture or poor quality reconstruction can lead to patient dissatisfaction. The aim of this study was to identify the rate of conversion from implant-based to autologous reconstruction and risk factors for conversion.

Methods: A retrospective review of implant-based reconstructions and revisions between 2003 and 2008 was performed.

Results: 118 patients underwent 139 implant-based reconstructions. 69 patients underwent LD/implant (80 breasts) and 49 underwent implant-only reconstructions (59 breasts). 16% of patients (19/118), i.e. 14% of breasts (19/139) underwent conversion to autologous reconstruction with 18 free flaps and 1 extended LD flap. Median time to conversion was 64 months (range 18-142 months). Motivating factors included capsular contracture (n=6), poor aesthetic result (n=6), change in patients weight (n=5), implant infections/extrusions (n=2), with a combination of factors in some patients. Implant-only reconstructions were more likely to convert (24% versus 6%) and at a faster rate than LD/implant reconstructions (p=0.0126). Adjuvant radiotherapy was administered in 37% (7/19) and capsular contracture was noted in 32% (6/19) of the converted patients. Neither radiotherapy (p=0.6907) nor capsular contracture (p=0.2911) increased the risk of conversion. BREAST-Q questionnaires demonstrated high patient satisfaction following conversion to autologous reconstruction.

Conclusions: A variety of factors can lead to patient dissatisfaction with implant-based reconstructions. Autologous reconstruction offers a definitive means of improving the quality of the result and long-term patient satisfaction. All patients should be offered information and be counselled about the benefits of autologous reconstruction.

P17. Sentinel lymph node biopsy for risk reducing mastectomy

Amy Burger, David Thurtle, Sally Owen, Gurdeep Mannu, Simon Pilgrim, Raman Vinayagam, Simon Pain

Norfolk & Norwich University Hospital NHS Foundation Trust, Norwich, Norfolk, UK

Introduction: Risk reducing mastectomy (RRM) confers 90-95% decreased risk of breast cancer, and can reduce mortality, especially in high risk groups such as BRCA carriers. Risk of occult disease in RRM specimen is approximately 5%. This demands axillary staging: sentinel lymph node (SLN) biopsy is no longer possible, axillary clearance confers significant risks and may prove negative. Contemporaneous SLN biopsy allows axillary staging with minimal further dissection.

Methods: Women undergoing RRM and SLN biopsy between June 2005 - July 2010 were reviewed retrospectively from our prospectively maintained database of 1522 SLN procedures in 1498 patients. SLN(s) localised using routine tracer methods. SLNs and mastectomy specimens underwent routine histological examination.

Results: RRM with SLN biopsy was performed in 83 cases on 71 patients (12 bilateral). Indications for RRM: Contralateral invasive (55), in situ (5) disease, BRCA 1/2 mutation (12) and strong family history (10). Mean number of SLNs: 1.35. Occult disease was detected in 5 cases (4.8%), with one case of occult invasive lobular carcinoma (1.2%). Remaining occult disease was lobular neoplasia in situ. SLNs were negative in all cases.

Conclusions: Our findings are comparable with the literature: 4.8% rate of occult disease overall, 1.2% invasive. The significant risk with SLN biopsy is lymphoedema, quoted around 7%. We have had no reports of symptomatic lymphoedema in patients undergoing RRM and SLN biopsy. We propose that SLN at the time of mastectomy requires only limited further dissection, and confers minimal risk compared with secondary axillary surgery.

P18. Is it time to stop performing cytology in patients presenting with nipple discharge to symptomatic breast clinic?

Atul Bhandari², Rathinasabapathy Rathinaezhil¹, Charles Zammit¹

¹Brighton and Sussex University Hospitals NHS Trust, Brighton, UK

²North Tees Hospital, Newcastle, UK

Background: Cytology of the nipple discharge is performed as part of the triple assessment in patients presenting with nipple discharge to the

breast units. Recent ABS guidelines recommend against this practice as this adds very little in managing these group of patients.

Aim: To analyse the correlation of nipple discharge cytology in patients who underwent surgical intervention (major duct excision) and the final histology

Methods: Retrospective study over a period of 6 years between 2005 and 2011. We had 133 patients during this period who underwent 140 procedures (8 bilateral). 11 patients had surgery for infection, mass or calcifications were excluded from the analysis.

Results: 53% (70/133) had blood stained, 39% (52/133) had non blood stained and 8% (11/133) had no nipple discharge. 14% (19/133) had no cytology but 6 patients had needle biopsy either on its own or in addition to cytology. This was C1 (insufficient) in 35% (40/114), C2 with or without blood in 54% (61/114), C3/C4 (indeterminate or suspicious) in 11% (13/114). 92% (129/140) underwent surgery with major duct excision. Histology was as follows:

Benign Papillomata	33% (42/129)
Benign breast disease	50% (64/129)
Atypical hyperplasia (ADH)	2% (3/129)
In situ cancer (DCIS)	6% (8/129)
Periductal mastitis	9% (12/129)

Conclusion: In this small study we found 8% of the patients presenting with nipple discharge had ADH or DCIS. No invasive malignancy was found. Only one patient who had C3 cytology had in situ cancer on final histology. This suggests that cytology of the nipple discharge as part of triple assessment can safely be omitted unless bloody in this group of patients as this adds very little to the final management.

P19. Risk, worry and cosmesis in decision-making for contralateral risk-reducing mastectomy: analysis of 60 consecutive cases in a specialist breast unit

Helen Beesley¹, Christopher Holcombe¹, Stephen Brown², Peter Salmon²

¹Royal Liverpool University Hospital, Liverpool, UK

²University of Liverpool, Liverpool, UK

Introduction: Although controversial, use of contralateral risk-reducing mastectomy (CRRM) is increasing. It is not clear whether risk-reduction or other factors determine decisions for CRRM. We aimed to identify factors that influence these decisions by scrutinising how decisions were made in one centre.

Methods: We reviewed a consecutive series of 60 patients considered for CRRM in one centre. Data sources, analysed using qualitative methods, were records of routine psychological assessment, surgeon letters, case-notes and interviews with four surgeons. The study was approved according to NHS Trust ethics procedures

Results: Perceptions of objective risk did not generally drive patients' requests or surgeons' decisions. While surgeons used objective risk as a reason to mention the option of surgery, the conversation was much more often initiated by the patient. Surgeons' letters highlighted aspects of patients' history or circumstances that, while unrelated to risk, apparently influenced their judgement of the patient's entitlement to CRRM. Patients often described overwhelming feelings of vulnerability to cancer, which resisted reassurance by explanation of the level of their risk or by routine examinations or investigations. CRRM was mainly performed for psychological reasons: To reduce patients' cancer worry and to achieve cosmetic benefits.

Conclusion: Routine use of the term 'risk-reducing' surgery masks a clinical decision which usually reflects influences other than risk. As CRRM is often carried out for psychological reasons it follows that evidence about its psychosocial outcomes is needed.

P20. Fertility preservation in women undergoing treatment for breast cancer in the UK: A questionnaire study

Judy King¹, Nicky Roche², Melanie Davies³, Jacinta Abraham⁴, Alison Jones¹

¹Royal Free Hampstead NHS Trust, London, UK

²Royal Marsden Hospital, London, UK

³University College Hospital NHS Trust, London, UK

⁴Velindre Cancer Centre, Cardiff, UK

Background: Fertility preservation is an important survivorship issue for women treated for breast cancer. Patients should be informed of the risk of infertility and offered referral to discuss fertility preservation options before systemic treatment commences. The aim of this work was to examine the referral practices of healthcare professionals who treat women with breast cancer in the UK.

Method: An invitation to participate in a confidential, online questionnaire was emailed to surgeons, oncologists and clinical nurse specialists who manage patients with breast cancer in the UK.

Results: 306 responses were received from surgeons, clinical nurse specialists and oncologists. The following factors influenced whether they discussed fertility preservation with patients: patient's age (78%); TNM status (37.9%); concern that fertility preservation would delay chemotherapy (37.3%); whether the patient had children (33.5%) or a partner (24.7%); oestrogen receptor expression (22.6%), lack of knowledge regarding the available options (20.9%) and concern that the success of cancer treatment would be compromised (19.8%). 27% did not know whether fertility preservation was available on the NHS. Knowledge regarding the available options varied according to different members of the multi-disciplinary team, with Consultant oncologists more likely to know than Consultant surgeons or clinical nurse specialists ($p < 0.05$).

Conclusion: Although patients rate information on fertility as very important, healthcare professionals' knowledge of and attitude towards fertility preservation in breast cancer patients was variable. Each breast MDT should have a fertility lead responsible for identifying patients suitable for early referral to a fertility specialist.

P21. Non-invasive breast cancer is relevant to symptomatic breast services

Gill Lawrence, Jackie Walton, Catherine Lagord, Shan Cheung, Olive Kearins

West Midlands Cancer Intelligence Unit, Birmingham, UK

Introduction: We examined the route of presentation of non-invasive breast cancers diagnosed in England in 2006 and 2007 to ascertain if non-invasive breast cancer is relevant to symptomatic services.

Methods: Non-invasive breast cancers were identified from the data used in the first and second All Breast Cancer Reports.

Results: 7,990 women were diagnosed with non-invasive breast cancer in 2006 and 2007. Overall, 10% of all new breast cancers were non-invasive. Although only 5% of breast cancers detected outside the NHS Breast Screening Programme (NHSBSP) were non-invasive compared with 19% of screen-detected breast cancers, 3,039 of the women (38%) presented outside the NHSBSP. Non-invasive breast cancers detected outside the NHSBSP had a higher mastectomy rate (47% compared to 28%), and a higher re-operation rate (27% compared to 19%). For women aged less than 50, the mastectomy rate in the non-screening cohort was 51%. Overall, 26% of women treated by mastectomy were known to have had immediate reconstruction. For women aged less than 50, the proportion was 46%.

Conclusions: Non-invasive breast cancer is relevant to symptomatic breast services as it is a problem relating to the routine use of diagnostic radiology rather than screening *per se*. Cases presenting outside the NHSBSP were more likely to have repeat therapeutic procedures and mastectomies. Higher mastectomy rates in younger women may be due to availability of immediate reconstruction.

P22. Pre-operative MRI for Lobular Breast Cancer

Andreas E. Shiatis, Itunuayo Ayeni, Vicky Stevenson, Chinedu Chianakwalam

Breast Unit, William Harvey Hospital, Ashford, Kent, UK

Introduction: NICE guidelines introduced in February 2009 recommend that patients with lobular breast cancer (LBC) should be offered preoperative MRI to measure the size of the tumour and exclude multifocal or contralateral disease. The aim of this study is to review the impact of MRI on the management of LBC in a District General Hospital.

Methods: The database was retrospectively reviewed for all patients with LBC between August 2005 and June 2011. Their clinical, radiological and pathological data were analysed to establish where MRI altered the surgical management. Statistical analysis was done with the Chi-square test.

Results: Of 162 cases with LBC, 41 had MRI scans: 12 out of 106 (11%) prior to and 29 out of 56 (54%) following the NICE guidelines. All had mammography and breast ultrasound. In only 3 cases (7%) did MRI change the management from breast conserving surgery to mastectomy by identifying a larger tumour than mammography and ultrasound. MRI did not detect any additional multifocal or contralateral disease. There was no significant difference in the mastectomy rates [MRI (39%) vs. non-MRI (45%) $P=0.17$] or re-excision rates after breast conserving surgery [MRI (12%) vs. Non-MRI (9%) $P=0.96$]

Conclusion: The use of pre-operative MRI for LBC has increased since the NICE guidelines were introduced. MRI however influences the management in only a small proportion of cases and does not alter either the mastectomy or re-excision rates.

P23. Reasonable doubt? Determining the rate of non-benign pathology in patients undergoing contralateral prophylactic mastectomy for breast cancer

Sarah Rayne¹, Bongani Mbatha¹, Charles Serrurier¹, Johan Slabbert¹, Simon Naylor², Carol Benn¹

¹Netcare Breast Care Centre and University of the Witwatersrand, Johannesburg, South Africa

²University of the Witwatersrand, Johannesburg, South Africa

Introduction: There is a described trend for contralateral prophylactic mastectomy (CPM) in women diagnosed with a unilateral breast cancer and controversy surrounding the place of the procedure in breast oncological care. The aim of this study is to determine the presence of non-benign pathology in the contralateral breast in patients undergoing CPM.

Method: Patients undergoing CPM for a first diagnosis of unilateral breast cancer in a single centre in Johannesburg, South Africa over a 10 year period were identified. Demographics and pre-operative radiological findings were recorded in addition to final histology of bilateral mastectomy specimens.

Results: Over a ten year study period from Jan 2001 to May 2011, 351 breast cancer patients underwent CPM. Occult invasive malignancy was found in the CPM specimen in 16 (4.6%) patients. Pre-invasive lesions were found in a further 17 (4.8%) and at least one high risk lesions were found in a further 60 (17.1%). In total, non-benign pathology was found in the CPM specimen of 92 (26.2%) of patients.

Conclusion: In this breast centre, 9.4% of patients had a confirmed contralateral occult malignancy or pre-malignancy, and a further 17.1% had at least one high-risk lesion. Many of these lesions, if detected later in the contralateral breast of a breast cancer patient with unilateral mastectomy, would require invasive intervention through biopsy and surgery. The marked presence of occult non-benign pathology validates CPM for patients unwilling or unable to continue close breast surveillance due to any factor, including personal choice.

P24. Achievement of reduced length of stay after breast surgery in a district general hospital despite increased complexity of breast surgery – closing the audit loop

Alistair Greenbank, Selvi Mahalingham, Timothy Bucknall, Colin Rogers, Susan Williams-Jones

Queen's Hospital, Burton on Trent, UK

Introduction: We audited length of stay (LoS) after breast surgery [breast conserving surgery (BCT) or mastectomy (Mx)] for three consecutive years and implemented interventions to reduce the LoS in our hospital in line with national policy.

Methods: Data were collected from the electronic patient record and interviews with nursing staff and patients. The first audit identified the existing LoS and triggers for prolonged hospital stay. Between the first and second audits, education sessions were held with ward, pre-operative assessment, district and breast care nurses. Further education sessions to reiterate the benefits of reduced LoS were delivered after the second audit. During the third audit, patients were interviewed about their views on discharge and community care, and patient factors correlating with increased hospital stay were identified.

Results:

Audit	BCT patients	BCT stay (mean;days)	Mx patients	Mx stay (mean;days)
1 st : 06/08 – 05/09	133	1.4	56	4.5
2 nd : 06/09 – 05/10	131	1.6	48	3.4
3 rd : 06/10 – 05/11	115	0.7	66	3.0

$p < 0.05$ on student's t-test vs 2nd audit; $p < 0.05$ on student's t-test vs 1st audit

The second audit demonstrated a reduction in LoS after Mx but not after BCT. The third audit demonstrated a reduction in LoS after BCT and a stabilisation in LoS after Mx despite a large increase in complexity of Mx surgery (36/66 Mx had immediate breast shape reconstruction in 3rd audit compared to 8/48 in 2nd audit). Increased LoS correlated with length of operation, number of drains, more than 2 co-morbidities and longer journey to hospital.

Conclusion: Reduction in LoS is achievable via education and teamwork, and can survive the introduction of widespread immediate breast shape reconstruction.

P25. Improving the patient journey in breast reconstruction: A qualitative study

Shelley Potter¹, Nicola Mills¹, Simon Cawthorn², Jane Blazeby¹

¹Academic Unit of Surgical Research, School of Social and Community Medicine, University of Bristol, Bristol, UK

²Breast Care Centre, North Bristol NHS Trust, Bristol, UK

Introduction: In the UK, the National Institute of Clinical Excellence recommends that women undergoing mastectomy are offered choice of breast reconstruction (BR). The National Mastectomy and BR Audit, however, suggested that only 65% of women seeking immediate BR were satisfied with the options offered. This study explored the patient journey in BR to identify how the process may be improved.

Methods: Semi-structured interviews with a purposive sample of post-BR patients and health professionals (HPs) were undertaken to explore participants' views of the provision of care, information and decision-making in BR. Interviews were transcribed verbatim and analysed using the constant comparative technique of grounded theory. Sampling, data collection and analysis were performed concurrently and iteratively until data saturation was achieved.

Results: Sixty-two interviews were performed with 31 patients and 35 HPs, almost all of whom expressed concerns about the journey from diagnosis to BR. Patients often reported feeling rushed into decisions, insufficiently informed about all BR options and sometimes being inadequately involved in

decisions about their care. They proposed several strategies by which the journey could be improved. Professionals generally perceived the journey more positively but expressed concerns that women treated at centres without plastic surgical expertise did not have equitable access to reconstructive care. An urgent need for improved cross-speciality collaboration was identified.

Conclusions: This qualitative study with patients and HPs suggests dissatisfaction with the provision of BR services in the UK. Pathway restructuring and service re-organisation to enhance cross-speciality collaboration is urgently needed to improve women's experiences of care.

P26. Targetted Axillary node sampling- Is there a role in the Era of Sentinel Node Biopsy?

Rachel French, Vijayakumar Kurup

Breast Unit, University Hospital North Tees, Stockton, UK

Aim: To assess whether combination of sentinel Lymph node biopsy (SLNB) using patent blue dye and four node sampling is a reasonable alternative to SLNB using combined Blue dye & Radio isotope, in early breast cancer as per current guidelines.

Methods: This is a retrospective study of SLNB using patent blue dye and four nodes sampling performed by a single surgeon from 2006-11. All 245 pts treated by WLE were included. SLN were localised by injecting 2 ml patent blue dye in the subareola. Further Level 1 sampling done to achieve a minimum of 4 nodes, removing lymphnodes individually by palpation. No drains were used in axilla and most were day cases. Node positive axillae were treated by radiotherapy or clearance as per MDT decision.

Results: Out of 245 pts SLN were localised in 240pts. Identification rate 97.95%. 41 pts had metastasis in the axilla- 38 cases SLN positive and 3 Negative. False negative rate 1.5%, sensitivity 92.7% and negative predictive value 98.5%. In 41 pts with positive axillae, 21 pts (51.2%) had only one node involved. 15 pts had further axillary clearance. Axillary morbidity was minimal with sampling. Recurrence was nil at 5 years.

Conclusion: Injection technique and experience of surgeon can lead up to 98% SLN localisation using blue dye alone with comparable false negativity. Combining this with four nodes sampling reduces the impact of false negativity and avoids unnecessary axillary clearance in single node disease (51.2%). This method has a role especially in developing countries and centres with limited nuclear medicine facilities.

P27. Metformin effects on breast cancer cell proliferation, AMPK pathway and the cell cycle

Sirwan Hadad¹, Virginia Appleyard², Grahame Hardie², Alastair Thompson²

¹University of Sheffield, Sheffield, UK

²University of Dundee, Dundee, UK

Background: Clinical observations have highlighted metformin as a potential anti-cancer therapy. Diabetics treated with metformin have a 23% reduced risk of cancer, including breast cancer, compared with those on sulfonylureas, and a lower cancer-related mortality at 36 months. The aim of this study was to compare the effects and mechanisms of action of metformin on ER-positive and ER-negative breast cancer cell lines.

Methods: The anti-proliferative effect of metformin, and its analogue A-769662, on MCF7 (ER-positive) and MDA-MB-231 (ER-negative) breast cancer cell lines was evaluated by 3-(4,5-Dimethylthiazol-2-yl)-2,5-Diphenyltetrazolium Bromide (MTT) assays. Fluorescence-Activated Cell Sorting System (FACS) examined the effect of metformin on cell cycle. The metformin-target AMPK and downstream phosphorylation of ACC, p53, p70-S6k and Raptor were examined using immunoblotting.

Results: Metformin and A-769662, caused significant, concentration dependent suppression of cell proliferation with G1 cell cycle arrest in both MCF7 and MDA-MB-231. AMPK phosphorylation was demonstrated in response to metformin treatment, but was not significantly different from the untreated cells. Furthermore, ACC, p53, p70-S6k and Raptor phosphorylation was not different between the two groups.

Conclusion: Metformin acts as a growth inhibitor in both ER-positive and ER-negative breast cancer cells in vitro, and arrests cells in G1, but does not appear to work through the AMPK pathway in vitro.

P28. Incidence of local and distant recurrence after mastectomy - a ten-year review at Macclesfield District General Hospital (MDGH)

Khalid Amin, Y. Jain, Lewis Clarke, Chandeen Roshanlall

Macclesfield District General Hospital, Macclesfield, UK

Introduction: The advent of local relapse and indeed distant relapse of breast cancer is grave, both for the patient and the breast surgeon, and his/her teams. It is well recognized that young age; large tumour size, ER negativity and involvement of axillary nodes have adverse prognostic implications in terms of local recurrence (LR) and the development of distant metastases (DM). MDGH has an annual breast cancer load of approximately 250 patients which include both symptomatic and screen detected patients. We wanted to assess the rate of LR and or DM. We have undertaken a retrospective case note review of patients who had a mastectomy and axillary procedure from April 2000 till April 2010 undertaken by one surgeon at this Trust.

Patients and Methods: A total of 410 mastectomy operations were performed from April 2000 to April 2010. 6 of these were male patients and were excluded. Data was collected on age, tumour size, ER/PR, nodal status and adjuvant therapy. Data on HER2 status was gathered if available. NPI was also used as an additional prognostic tool. The data was collected by a combination of case note review, hospital database review (Medisec) of clinic letters. Lab Browser for histology reports and PACS system for radiology images and reports was also used. TNM Classification for Breast Cancer from the *AJCC Cancer Staging Manual*, 6th Edition, 2006, was used to stage the breast cancers.

Results: There was complete data available for 404 female patients who had a mastectomy. Average age of patient at primary treatment was 58.5 years (range 29-84). Average size of tumour was 33.5mm (range 0-140). 10(2.4%) patients had LR, 34(8.29%) had DM and 2 had both during the audit period. Average time to LR was 51 months (range 9-122) and to DM was 34.2 months (range 0-108). 29(7.07%) patients with local and distant recurrence died of breast cancer. 15 (31.9%) patients are alive and one patient was lost to follow up as she moved to a different region. One patient died of stroke. Average time to death from primary treatment was 30.6 months (range 5-98). 25 (54.3%) of breast cancer recurrence was stage III and average NPI was 4.90. 28 (59.5%) patients who recurred belonged to poor prognostic group (NP I>5.4).

Conclusion: Our data for LR and DM compares favourably with published literature. Our low mortality figures may reflect immature data as patient operated on in the second half of study period are still being followed up clinically. We have looked at 5 year mortality from April 2000 to April 2006 and have found 24(10.4%) out of 230 patients died of breast cancer in this period. 25(10.8%) of these patients had DM and 9(3.9%) patients had LR.

P29. Upper limb lymphovenous communications as a possible protective mechanism for breast cancer-related lymphoedema?

Salena Bains³, Y. Fung Tan¹, James Ballinger¹, Sarah Allen¹, Anthony Stanton², J. Rodney Levick², Peter Mortimer², A. Michael Peters⁴, Arnie Purushotham³

¹Guy's and St Thomas' NHS Foundation Trust, London, UK
²St George's Medical School, London, UK

³King's College London, London, UK
⁴Brighton and Sussex Medical School, Brighton, UK

Introduction: Breast cancer-related lymphoedema (BCRL) occurs in up to 25% of patients undergoing axillary clearance and 6% undergoing SLNB. The presence or development of lymphovenous communications (LVCs) may protect against BCRL in some women. The aim of this study was to identify peripheral LVCs using intradermal injection of radiolabelled erythrocytes.

Methods: Six patients with newly-diagnosed invasive breast cancer who had axillary clearance were studied pre- and post-operatively. Arm volume was measured using a Perometer (350S). Lymphoscintigraphic images were obtained of the arm and axillae after intradermal injection of 0.1ml of ~20 MBq ^{99m}Tc-labelled autologous erythrocytes into the 2nd metacarpo-phalangeal joint interspace of the ipsilateral hand. Blood samples were obtained bilaterally at 0, 15, 30, 60, 120 and 180 min post-injection. From estimated blood volume, circulating erythrocyte and plasma ^{99m}Tc concentrations were calculated as percentages of administered activity.

Results: Ipsilateral axillary lymph nodes were visualised in all 6 patients, indicating entry of erythrocytes into dermal lymphatics. In five patients, blood ^{99m}Tc activity could be accounted for by non-cell bound activity both pre- and post-operatively, indicating that no intact labelled erythrocytes had entered the circulation. In the post-operative study of one patient, however, intact erythrocyte-associated activity was easily detected in contralateral blood at 60 and 120 min post-injection, but not in the first samples at 5 and 30 mins.

Conclusion: The finding of erythrocytes in the circulation, albeit in a single patient, supports the presence of LVCs, proximal to the contralateral sampling point, which may protect against BCRL.

P30. Innovative post-operative 'Bra' for patients discharged home with drains following breast surgery - does it improve the patient's experience?

Charlotte Bradbury, Tapan Sircar, Brian Isgar, Pilar Matey

Royal Wolverhampton NHS Trust, Wolverhampton, UK

Introduction: Patients are discharged home with one or more drains following breast surgery especially after breast reconstruction operations with the plan for their removal when the drainage slows down. Many patients find it difficult to manage the drains, carrying the drain bottles in bags and sometimes resulting in the drain getting pulled out accidentally. Our breast unit has introduced a unique postoperative bra with pockets that hold the drain bottles. These are provided to patients before discharge. The aim of this study was to investigate whether this post operative innovative bra helped to improve the patient's experience.

Method: This is a questionnaire study of 49 patients who were asked to score on various aspects of the bra using a sliding scale of 1 to 5, with 1 being the worst and 5 being the best score. All scores were out of 5.

Results: 45% patients were discharged with 1 drain, 26 % with 2 drains and 16% with 3 or more drains. The mean score for comfort of using this bra was 4.4. 75% of patients (n=37) felt that it was important to conceal the drain tubing and bottles under their clothes and this bra was very effective in hiding the drain and bottles (mean score 4.3). The mean score was 4.3 when patients were asked if the bra made managing the drains easier. 73% patients felt that this bra improved their independence after discharge and the mean score was 4.42(out of 5). No drains came out inadvertently.

Conclusion: This innovative bra improved the experience of those patients discharged home with drains following breast surgery. Apart from securing the drains it also prevents the drains being visible by other people and gives patients complete independence to go about their normal activities of daily living.

P31. Audit of bilateral x-ray mammography in symptomatic patients aged 35-9: Is it safe to change our unit's practice?

Julia Massey, Cathy Tait, Anne-Marie Wason, Richard Linforth

Bradford Teaching Hospitals NHSFT, Bradford, UK

Introduction: In Nov 2010 the Department of Health published 'Best Practice Diagnostic Guidelines for Patients Presenting with Breast Symptoms'. These include the recommendation that 'x-ray mammography is not indicated for the majority of patients aged < 40 years'. Our current practice is to perform x-ray mammography in symptomatic patients ≥ 35. We

therefore audited the number of symptomatic patients diagnosed with breast cancer aged 35-9 who were diagnosed purely on the basis of x-ray mammography to ascertain whether it was safe to change our local practice.

Methods: Retrospective review of case notes and mammograms of all symptomatic patients aged 35-9 diagnosed with breast cancer at our institution between Jan 2009 and Oct 2011.

Results: 16 patients were diagnosed, all female, one bilateral. 2/16 had a breast cancer diagnosed only by x-ray mammography. Of these one (with bilateral cancer) would have had a mammogram within the new guidelines as she presented with a cancer in the contralateral breast. Therefore 1/16 cancers would not have been diagnosed if we adhered to the DOH guidelines. Our unit saw 958 symptomatic referrals aged 35-9 in the study time period. Therefore the cancer detection rate of x ray mammography in this group was 1/958.

Conclusions: The cancer detection rate of x-ray mammography of symptomatic 35-9 year olds in our institution was 1/958. This is less than the NHS Breast Screening Programme rate of 5-6 /1000. It is therefore safe to introduce the new guidelines into our units practice.

P32. Does pre-operative neoadjuvant systemic therapy affect the number of lymph nodes on histological examination of tissues excised during axillary node clearance surgery?

David Naumann, Martin Sintler

Sandwell and West Birmingham Hospitals NHS Trust, West Midlands, UK

Introduction: The number of lymph nodes (LNs) harvested during axillary node clearance (ANC) may be affected by pre-operative neo-adjuvant systemic therapy (NST) such as chemotherapy. This may change the macroscopic architecture of the LNs to such a degree that the number of LNs counted on histological examination of tissues is lower than expected by the surgeon. We test the hypothesis that NST prior to ANC reduces the number of identifiable LNs retrieved at ANC seen on histological examination.

Methods: Retrospective study examining electronic records for every patient undergoing ANC at a single NHS Trust from April 2010 to August 2011. We compared the number of LNs counted in histological samples between the patient groups who had received pre-operative NST and those who had not. These groups were further subdivided into those who had undergone sentinel node biopsy (SNB) prior to ANC and those who had not. A Levene's test was used to test significance differences between the groups.

Results: There were 237 ANC operations including 98 ANC alone, 36 ANC following NST but no SNB, 61 ANC following SNB but no NST, and 42 following both SNB and SNT, yielding 14.4 (± 6.5), 13.0 (± 5.8), 14.3 (± 5.1), and 15.1 (± 5.5) mean LNs respectively ($p = 0.398$).

Conclusion: We find no statistically significant difference in the number of LNs counted in excised axillary samples between patients who received pre-operative NST and those who had not. Lower than expected number of LNs may not credibly be attributed to prior NST.

P33. Air bubble "ductoscan": A novel method of localisation of intraductal papilloma prior to ultrasound guided mammatome excision

Andrew Macallister, Michael Shere, Simon Cawthorn

Department of Surgery, Southmead Hospital, Bristol, UK

Introduction: Pathological nipple discharge (PND) accounts for about 5% of symptomatic presentations to breast clinic. Intraductal papilloma is responsible in 40-70% of cases. Ductogram imaging of intraductal papilloma may show a circumscribed lesion or dilated duct but many are occult requiring more specialised imaging, ductoscopy or surgical excision. Mammatome excision is becoming more common especially in benign disease but this requires the duct lesion to be identified and localisation techniques would improve the accuracy of ultrasound guided excision. We

present a new method to identify occult intraductal papilloma for ultrasound guided mammatome excision in outpatients.

Method: We present a new double contrast technique using local anaesthetic and air bubbles introduced into the duct using a blunt 18 gauge needle. This can enhance ultrasound visualisation of an intraductal papilloma. The duct was identified by expressing nipple discharge and dilated using a lacrimal dilator. Local anaesthetic was then introduced followed by air bubbles created using an air filled syringe.

Results: Insertion of local anaesthetic caused duct dilatation, air bubbles were then injected using the blunt needle. Brightly enhancing circular areas with hypoechoic centres were seen passing over the intraductal lesion which allowed ultrasound guided Mammatome excision of the area identified to be performed in a straightforward manner. Histology confirmed intraductal papilloma within the mammatome specimens.

Conclusion: Double contrast breast "ductoscan" enabled ultrasound guided Mammatome excision of an intraductal papilloma to be carried out easily and accurately in the outpatient clinic.

P34. What Do Women Who Are Invited To The National Breast Screening Programme Think About The Service?

Janet Skeys, Philippa Dooher

Princess Alexandra Hospital NHS Trust, Harlow, Essex, UK

Purpose/Background/Objectives: The purpose of the study is to determine the women's view of the service following a mammogram. It is important to understand the feelings of women once invited: Did they read the enclosed literature; what is an acceptable distance to travel for their screening. In addition we wanted to explore the women's thoughts about the privacy, friendliness of staff and the information provided throughout the procedure along with a scale of discomfort experienced during their visit. Our aim is to ascertain how we can improve the service to increase our uptake by analysing the feedback from the women's questionnaires.

Methods: One hundred women who had recently been screened were chosen at random from the screening cohort area to receive an anonymous postal questionnaire with a SAE envelope back to the unit. The questionnaire was approved by the Trust R & D committee.

Results: Hundred questionnaires sent, 80 returned and 91% had been previously screened, 69% pleased to receive the invitation, 30% a little anxious, with 81% stating the appointment was convenient. 96% read the leaflet. 95% of the women travelled to their appointment, taking up to 30 minutes, and 99% of the women had adequate privacy, 94% said staff were friendly and approachable. The information provided showed a positive response and comfort had a high response.

Conclusion: A majority of women read the literature, appear to acknowledge the importance of attending by accepting their first appointment. The survey results show women find attendance for a mammogram a positive experience.

P35. Patient questionnaire assessment of function after latissimus dorsi flap (LDF) breast reconstruction.

Tracy Acock, Elaine Dechow, Abigail Evans

Poole Hospital NHS Foundation Trust, Dorset, UK

The aim of this study was to identify via patient questionnaire, the functional problems women experience following LDF breast reconstruction and to identify opportunities for intervention.

Questionnaires were sent to 14 patients who had undergone immediate or delayed LDF breast reconstruction performed by a single surgeon over a period of one year (2010). All questionnaires were completed and returned.

No patients had pre-existing shoulder problems. The most common and persistent problem reported in 12 out of 14 patients post-operatively was back tightness. Over half of patients initially encountered problems with everyday functional tasks such as carrying shopping, bed changing and

getting in and out of the bath. All these problems improved with time and the majority had resolved by 4 months post operatively. 9/14 women exercised regularly pre-operatively and all of these women returned to exercise after surgery. 60% of women experienced specific problems with shoulder function and half of these women found that regular stretching exercises were most beneficial.

This questionnaire has identified that the commonest problems after LDF breast reconstruction are back tightness and shoulder stiffness which can limit specific activities of daily living. The back tightness persists, but stretching exercises can improve shoulder function and patients may therefore benefit from early and specific physiotherapy intervention.

On the basis of these results we have devised a specific peri-operative exercise programme for patients undergoing LDF reconstruction.

P36. Correlation between histological characteristics and intra-operative touch imprint cytology in axillary sentinel lymph nodes.

David Thurtle, Gurdeep Mannu, Raman Vinayagam, Sally Owen, Simon Pilgrim, Amy Burger, Simon Pain

Norfolk and Norwich University Hospital, Norwich, Norfolk, UK

Introduction: Touch Imprint Cytology (TIC) has been routinely performed during sentinel lymph node (SLN) biopsy in our unit since 2005. Low sensitivity remains a potential drawback of this quick and simple method. The correlation between histological characteristics and TIC sensitivity has been evaluated in this large series.

Methods: 1238 intra-operative TIC procedures were performed during this period on SLNs, using a single longitudinal bisection technique. A prospectively maintained database of SLN operations was analysed. Final histological data from surgical specimens was input retrospectively.

Results: TIC was positive in 122 (9.85%) patients. However, 283 (22.86%) were histologically positive with an overall TIC sensitivity of 43.11% and specificity 99.89%. Sensitivity of TIC was highest in ductal carcinoma (47.11%) followed by mixed tumour type (30.0%) and lobular (24.24%). TIC sensitivity was greatest when macrometastases were present (57.0%) compared to micrometastases (9.64%). This difference persisted across main tumour types: ductal (61.82% vs 6.67%) and lobular (36.84% vs 7.14%). For invasive ductal carcinoma, TIC sensitivity increased with higher grade (G1: 26.09%, G2: 45.54%, G3: 55.24%). Specificity was 100% for all tumour types except ductal (99.81%), as one TIC positive patient had only isolated tumour cells on final histology.

Conclusion: TIC sensitivity can be optimised by its selective use in ductal carcinomas and higher grade tumours. The sensitivity of TIC in detecting micrometastases may be further improved by multiple slicing of the SLN, as shown in other series.

P37. Autologous fat grafting in breast reconstruction: Our 7 year experience

Konstantinos Seretis, Soni Soumian, Jonathan Staiano, Rado Boca, Guy Sterne, Fazel Fatah

City Hospital, Birmingham, UK

Introduction: Autologous fat grafting has emerged as a versatile technique, and is increasingly being used in breast reconstruction. Our unit has been performing fat grafting since 2005 and we would like to present our experience with lipomodelling after breast reconstruction.

Methods: A retrospective review was performed on all patients treated for breast cancer between September 2002 and December 2011 at our department. Data on patient demographics, indications and type of reconstruction were collected. We analyzed the subgroup of patients on whom lipomodelling was performed.

Results: Breast reconstruction was performed in 620 patients, while 233 sessions of lipomodelling in 144 patients were performed. The main indications were for improvement in shape, volume and symmetry of the breast following reconstruction with extended latissimus dorsi (ELD) flap with or without implant (n= 31, 38, respectively), abdominal flap

(TRAM, n=27, DIEP n=7), or implants (n=16). Fat grafting was also performed after breast conservation therapy (n=17), or after mastectomy defects (n=8). 58% of patients had one session and the remainder required between 2 and 4 sessions. A significant decrease in the use of ELD with implant was identified, since the implementation of fat grafting.

Conclusions: Autologous fat grafting is an effective tool for breast reconstruction. It can be used to improve contour, volume, and overall symmetry. It is particularly useful in avoiding implants or contralateral matching procedures, when autologous flaps are too small, or providing cover in case of rippling or palpable edges after use of implants. In our practice lipomodelling has become an indispensable adjunct of breast reconstruction.

P38. Audit of B3 diagnosis in breast core biopsy: Evaluation of positive predictive value, sufficiency of tissue volume and compliance with minimum dataset

Rosalin Cooper², Sui Chan¹, Doreen Cox¹, Parveen Abdullah¹

¹SWBH NHS Trust, Birmingham, UK

²University of Birmingham, Birmingham, UK

Introduction: Needle core biopsy is the routine biopsy method in the diagnosis of breast lesions. A number of lesions are classified as B3 uncertain malignant potential, according to the NHS Breast Screening Programme (NHSBSP). These lesions pose considerable clinical challenge as a proportion will prove malignant on excision. This study aims to estimate the PPV of B3 diagnosis at this Trust, to compare it to that described in the literature, to assess whether a greater breast tissue volume at biopsy would increase the likelihood of definitive diagnosis and to assess compliance with RCPATH minimum dataset.

Methods: B3 breast core biopsy results from Birmingham City and Sandwell Hospitals between 01/11/2009-31/10/2010 were correlated with the subsequent surgical excision histology to estimate the PPV and whether greater tissue volumes at diagnostic biopsy would have increased diagnostic accuracy. Mention of atypia, calcification and lesion quadrant in the biopsy report was recorded.

Results: Surgical excision histology was available for 53 lesions diagnosed as B3. PPV was 32% (95% CI 19-45%), with variation between B3 sub-types. A larger volume of tissue would have produced definitive diagnosis in 55% of lesions (95% CI 41-68%). 87, 91 and 77% of core biopsy reports included mention of atypia, calcification and lesion quadrant respectively.

Conclusions: PPV of a B3 diagnosis at this centre was consistent with those reported in the literature. Biopsy methods that obtain larger tissue samples, such as vacuum-assisted biopsy, may reduce under-diagnosis of breast malignancy. Minimum dataset reporting falls short of 100%.

P39. Patient satisfaction following mastectomy and breast reconstruction in a district general hospital

Yogesh Jain, Khalid Amin, Jalal Kokan

Macclesfield District Hospital, Macclesfield, UK

Introduction: Patient satisfaction is one of the important outcome measures following breast reconstruction (BR). We carried out this survey of patients who had mastectomy and breast reconstruction in our hospital by a single surgeon.

Methods: Patients were asked to complete a questionnaire sent anonymously to assess quality of life and satisfaction following BR. Patients were sent a questionnaire at least 6 months after completion of BR. Questions included six items assessing both general and aesthetic satisfaction with their BR. 1) would do it again, 2) outcome met their expectations, 3) Will they recommend the operation to others, 4) Satisfaction about types of reconstructions offered, 5) Carrying out normal daily activities and 6) Use of shell/padding following procedure. Patients were asked to respond to each item using a five-point Likert scale. Item responses ranged from 1, indicating high satisfaction, to 5, reflecting low satisfaction. In the data

analysis, only patients responding with a 1 or 2 for *all* of the items within a subscale were classified as satisfied for the subscale.

Results: A total of 47 reconstructive procedures (29 immediate and 18 delayed) were done between April 2007 and Dec 2010. The study population consisted of 30 LD and 17 Sub-pectoral implant reconstructions during this period. 28 out of 47 (60%) patient satisfaction questionnaires were returned.

1	Would do it again	100%
2	Outcome met expectations	86%
3	Recommend to others	89%
4	Satisfaction about types of reconstructions offered	100%
5	Carrying out normal daily activities	93%
6	Shell required	20%

Conclusion: Most patients were satisfied with their breast reconstructions and would recommend this procedure to others. However it is important to assess the reasons for the need to wear a prosthetic shell in 20% of patients.

P40. Intra-operative Ultrasound is an Effective Technique for Excision of Early Breast Cancer

Jennifer Pollard, Anu Shrotri, Sameer Pathak, Lee Martin
Aintree University Hospitals, Liverpool, UK

Introduction: Radio-guided occult lesion localisation (ROLL) has been used to excise palpable breast lesions instead of wire-guided localisation. We hypothesise that Intra-operative Ultrasound Marking (IUM) is as effective as ROLL for excision of ultrasound-detectable lesions, more cost-effective and more acceptable to the patient.

Methods: Retrospective analysis was performed on consecutive patients undergoing Intra-operative Ultrasound Marked WLE over a 3-year period. Baseline demographics, tumour size, margin clearance, histology and further procedures performed were analysed.

Results: Sixty-six IUM WLEs were performed from June 2008- November 2011 for non-palpable lesions and we had 100% success rate for excision. The mean patient age was 58 years (range 27-81 years). The mean radiological tumour size was 13.5mm (range 4.5-28.4mm), mean invasive tumour size was 18.7mm (range 3-77mm) and mean specimen weight 43.9 grams. 63 patients (95.3%) had clear radial margins (mean radial clearance 3.35mm, range 1.1-7mm). Three patients (4.7%) had positive margins for invasive malignancy (1 lobular, 2 IDC). These results compare favourably with the ROLL data within the literature.

Conclusions: Our results demonstrate no malignant lesions were missed; therefore this procedure can be safely used to excise early, palpable screen-detected invasive breast cancers. It improves the peri-operative patient journey; increases patient safety and convenience, whilst making savings in the cost of nuclear medicine services. Furthermore, it can be performed in hospitals without a nuclear medicine department. Our recommendations are that breast surgeons will need to undergo training in ultra-sound scanning, which is already the norm amongst their vascular and hepato-biliary colleagues.

P41. The National Mastectomy and Reconstruction Audit as a driver for local service improvement. Improving peri-operative pain control in breast surgery

James Harvey, Sally Hallam, Adam Critchley, Chris Caddy
Sheffield Teaching Hospitals NHS Foundation Trust, Sheffield, UK

Introduction: The National Mastectomy and Breast Reconstruction Audit (NMBRA) provides comparative data on local and national practice and outcomes. Unacceptably high numbers of patients reported severe pain following breast surgery (6.2%, 16.5% and 20.1% following mastectomy, immediate and delayed reconstruction respectively). The report

recommended further work to identify reconstructive procedures with a higher incidence of pain. Our study aimed to identify procedures causing high levels of post-operative pain and to implement service improvement if required.

Methods: A prospective audit of all patients undergoing in-patient breast surgery was performed over nine weeks. A multi-disciplinary group including breast and plastic surgeons and the pain team oversaw a local audit of pain control and devised a strategy for service improvement. Results of the audit were presented locally to surgical and anaesthetic departments. New guidelines for the management of peri-operative pain were implemented. Outcomes were re-audited in September 2011 and February 2012.

Results: Levels of severe pain were similar to that demonstrated in the national audit. Procedures causing significantly more post-operative pain included breast reduction and augmentation surgery. Recommendations included that 95% of patients should be prescribed regular post-operative analgesia and for 45% of patient to receive a local anaesthetic block. This has led to a significant increase in the use of local anaesthetic blocks ($p < 0.05$) and a decrease in severe post-operative pain.

Conclusions: The NMBRA should be used to drive local service improvement. This model of national data driving local change has led to improved outcomes for patients undergoing major breast surgery.

P42. Touch imprint cytology in axillary sentinel lymph node biopsy - a series of 1522 cases over 5 years

Salli Owen, Simon Pilgrim, David Thurtle, Gurdeep Mannu, Raman Vinayagam, Amy Burger, Simon Pain
Norfolk & Norwich University Hospital, Norwich, UK

Introduction: Sentinel lymph node biopsy (SLNB) using radioisotope +/- blue dye has been carried out for five years in our unit as an axillary staging procedure for breast cancer. We carry out intra-operative touch imprint cytology (TIC) using the single longitudinal bisection technique followed by full histological analysis of the sentinel lymph nodes. This study reviews data collected over a 5 year period to determine the sensitivity and specificity of TIC in practice and reports overall rates of SLNB positivity and negativity.

Methods: A prospectively-collected SLNB database was cross-referenced with computerised operating and histological records over a sixty-one month period between 2005 and 2010. This was then analysed and correlated with histological results to ascertain the sensitivity and specificity of TIC.

Results: SLNB was carried out in 1522 consecutive cases in 1498 patients. Of the 1522 cases intra-operative TIC was performed in 1274 and was positive in 127. Histological examination of the SLNB showed micrometastases and macrometastases in 337 (22.3%) cases and was negative or containing only isolated tumour cells in 1172 (77.6%) cases. Overall sensitivity for TIC was 43.1% and specificity was 99.89%.

Conclusion: This analysis shows that TIC is a useful adjunct to SLNB and has a very high specificity, maintained over a long period of time. It remains a safe and effective technique for intra-operative identification of positive sentinel lymph nodes, reducing the need for two stage operations in our patients.

P43. The Use of Total Ductal Excision in the Diagnosis of Breast Carcinoma

Hannah Kranenburg, Jane Aitken, Adam Stearns, Benedict McCann, Eamonn Coveney, Balendra Kumar
West Suffolk Hospital Breast Unit, Bury St. Edmunds, UK

Introduction: Nipple discharge is the presenting symptom in 3-9% of patients attending breast clinic (Hunt et al, 2007.) While discharge is largely due to benign processes, the association of pathological nipple discharge with breast carcinoma is thought to be between 10-20% (Dillon et al, 2006.) Consequently, patients with suspicious discharge, in whom no abnormality is detected through triple assessment, often undergo a total ductal

excision to exclude underlying carcinoma. This operation is much debated, given its associated complications, and the high proportion of patients who have benign disease. We analysed the results of patients who had undergone this procedure to evaluate its usefulness as a diagnostic tool.

Method: Histology from 206 patients who underwent total ductal excision or microdocheotomy over a five year period (2006-2011) was collated. The case histories of those with malignant and pre-malignant pathology were further analysed.

Results: Of the 206 patients who underwent this operation, 25 had significant results. Of these, 7 cases were discounted, as their presenting symptom did not include nipple discharge, or a pre-operative diagnosis was provided by biopsy. Of the remaining 18, 10 patients (5.0%) had malignant disease, and 8 (4.0%) had pre-malignant conditions such as lobular carcinoma in situ or atypical ductal hyperplasia. All of these cases had no sign of malignancy on imaging.

Conclusion: We conclude that in selected cases, total ductal excision is required to make a diagnosis, even in those patients with otherwise normal investigations, but that the rate of positive pathology is lower than previously suggested.

P44. Male referrals to the breast unit – Who should we see under the two week rule?

Angela Volleamere, Tom Finnigan, Hazel Ecclestone, Amanda McCann, Jane Ooi

Royal Bolton Hospitals, Bolton, UK

Introduction: The majority of male referrals are seen under two week wait protocol for suspected malignancy. Recent local audits in Royal Bolton Hospital (RBH) and national data suggest that the majority of these referrals are benign diagnoses (gynaecomastia or other). Can we screen referrals in order to expedite those which need to be seen more urgently?

Method: Using RBH's BASO and Somerset systems over a ten year period we searched for male breast cancer (MBC) patients and retrospectively reviewed the last fifty male patients attending new patient breast clinics, to identify their mode of presentation.

Results: Over the past ten years at the RBH there have been a total of sixteen male patients diagnosed with breast cancer with a mean age of 74 years. In RBH we diagnose 350 cancers annually which equates to approximately 1%. We receive a mean of eleven male referrals a month. Of male referrals retrospectively reviewed 9% were diagnosed with cancer, all others were benign disease (62% gynaecomastia, 9% lipoma, 20% other).

Conclusion: Best Practice Diagnostic Guidelines for patients presenting with breast symptoms recommend urgent assessment if clinical suspicion of malignancy, no obvious physiological or drug cause, unilateral lump, persistent pain and swelling.

As there have been no young MBC, we suggest all males over the age of fifty with unilateral breast lump should be seen within 2 weeks but all other referrals reviewed individually and attend a monthly dedicated male gynaecomastia clinic. This allows clinic time to be used appropriately for suspected cancers.

P45. CT Staging in early breast cancer

Rachel Oeppen, Beth Shepherd, Ellen Copson, Ramsey Cutress

Southampton Breast Unit, Southampton, UK

Introduction: Routine CT staging of all patients undergoing surgical treatment for breast cancer is not indicated. The risk of metastatic disease may be increased in certain specific groups and a policy for post-operative staging has been proposed (Barrett et al BJC 2009). The outcome of a directed policy for peri-operative CT staging was reviewed.

Methods: A retrospective review of patients staged with CT for primary breast cancer over a four year period between June 2006-July 2010 at the Southampton Breast Unit. Data was collected from electronic sources (CRIS/NBSS, eQuest and eDocs) and analysed on SPSS.

Results: 1457 patients presented with primary breast cancer over this time period: 844 diagnosed through the symptomatic service and 613 through the screening service. Of these, 97 patients underwent a peri-operative staging CT scan; 86 (89% pre-operatively) and 11 (11%) post-operatively. Metastases were identified on CT in 16 cases (17%) and additional findings requiring further investigation in a further 12 (12%) patients. The predominant indication for pre-operative CT staging was axillary ultrasound evidence of extensive loco-regional nodal disease. Utilising published health economic modelling (Barrett et al BJC 2009) our selection policy has a comparable true positive rate and cost-effectiveness as post-operative staging of those with AJCC stage III or IV disease.

Conclusions: With increased uptake of axillary ultrasound it is possible to identify a group of patients that may benefit from pre-operative CT staging. This appears to be cost effective and may influence surgical planning.

P46. Survey of UK breast surgeons on the management of the positive axillary sentinel node

Wen-Chan Yeow, Jennifer Rusby, Nicky Roche

The Royal Marsden NHS Foundation Trust, Sutton, UK

Introduction: Current NICE and ABS guidelines recommend further axillary treatment (surgery or radiotherapy) following a positive SLNB. The ACOSOG Z0011 study demonstrated in selected patients with positive SLNB, locoregional and overall survival outcomes were the same regardless whether cALND was performed. The results of the AMAROS study, which randomises between radiotherapy and surgery to the axilla, has yet to report, but Z0011 challenges the current guidelines. The aim of this survey was to assess the impact Z0011 has had on UK breast surgeons' practice.

Method: An online questionnaire service was used to create a 3-question survey. It was sent out to all consultant surgeons by the Association of Breast Surgery (ABS). It assessed surgeons' awareness of Z0011 and questioned their management of micro- and macro-metastases in SLNB.

Results: An email link to the questionnaire was sent to 402 surgeons registered with ABS, only 105 (26%) participated. 88% of responders were aware of Z0011. For micrometastases, 61% of respondents will perform cALND. 21% said they were already omitting cALND, but as a result of Z0011, a further 16% now do not perform cALND for micrometastases. Z0011 has not changed 66% of respondents' practice for macrometastases, although 28% have adopted a selective practice of omitting cALND. This is often after discussion at the breast MDT.

Conclusion: There was a disappointingly poor response to the survey though it was only distributed in a "single round". Z0011 has added to the increasing evidence that further treatment to the axilla for micrometastases is unnecessary.

P47. An audit of Interval Cancers detected through the Symptomatic Breast Service in a single institution

Elizabeth Smyth¹, Alistair Geraghty¹, Sean Flynn¹, Tanya Gagliardi¹, Heather Deans²

¹Aberdeen Royal Infirmary, NHS Grampian, UK

²North-East Scotland Breast Screening programme, NHS Grampian, Grampian, UK

Background: The National Breast Screening Programme (NBSP) carries out regular audit of interval cancers i.e. patients presenting to a symptomatic breast clinic in the interval between 3 yearly screening mammograms. The number of patients presenting with cancer who have been seen at a symptomatic breast clinic within the preceding 3 years is less well documented. We present an analysis of such cases from a single region.

Methods: Information on all cancers diagnosed (either symptomatic or screening) in our region in 2007 and 2008 was obtained from the cancer audit facilitator and individuals were cross-referenced with the hospital patient administration system to ascertain whether they had been seen at the

symptomatic breast clinic within the preceding 3 years. All cases were then reviewed by three radiologists independently. These classified in the same manner as the interval cancer audit of the NBSP i.e. true interval, false negative, false negative (subtle), mammographically occult or unclassifiable. Information was also collected on histopathology and NPI.

Results: 854 cancers were diagnosed in our region over the study period. Of these, 43 were classified as potential interval cancers. 11 were excluded from analysis as they were undergoing annual mammography either as part of cancer follow-up or in the family history screening programme. In 7 cases the interval was greater than 36 months and these cases have also been excluded from further analysis. Sixteen interval cancers (age range 37-87) presented via the symptomatic service and 9 (age 50-71) via screening. Four of the screening cases had a history of a previous breast cancer but had been discharged from hospital follow-up. Review of the imaging in these 25 cases resulted in the following: 13 true interval, 2 mammographically occult, 3 false negative-subtle and 2 unclassifiable. There were two cases of DCIS and two lobular cancers all in the true interval cancer group. The remainder were invasive ductal cancers with an even mix of grade 2 and grade 3. NPI overall ranged from 3.2 to 6.68; for occult cancers the range was 3.2-4.43, for false negative 3.3-4.84 and for true interval 4.16-6.68.

P48. Computer decision support for breast multi-disciplinary meetings: The Royal Free experience

Vivek Patkar¹, Dionisio Acosta², Tim Davidson¹, Alison Jones¹, John Fox³, Mo Keshtgar¹

¹The Breast Unit, Department of Surgery, Royal Free Hospital, London, UK

²University College London, London, UK

³Department of Engineering Science, Oxford University, Oxford, UK

Introduction: The cancer multidisciplinary team (MDT) meeting is regarded as the best platform to reduce unwarranted variation in cancer care through evidence-compliant management. However, MDT meetings are often overburdened with many different agendas, and hence struggle to achieve their full potential.

Methods: We have developed an interactive computer system called MATE to facilitate explicit, evidence-based decision-making in MDT meetings for breast cancer care. MATE provides prognostication and risk assessment and also flags up patients eligible for recruiting into ongoing research trials. We describe the system; share our experience of implementing MATE and report initial audit and survey results. MATE was used to record the proceedings of breast MDT meetings between 2008 - 2009 to gather 1,295 cases discussed in the MDMs during this period and to audit the MDT decisions and MATE recommendations against NICE, NHSBS and NCCN guidelines.

Results: MATE identified 61% more patients who were eligible for recruitment into clinical trials than the MDT and its recommendations demonstrated high concordance with MDT decisions (93.2 %). MATE is in routine use in breast MDT meetings at Royal Free Hospital, London and deployment of the system in other NHS trusts is being explored.

Conclusion: Sophisticated decision support systems can enhance the conduct of MDT meetings in a way that is acceptable to and valued by the clinical team. Further rigorous evaluations are required to examine cost-effectiveness, measure the impact on patient outcomes and test the generalisability of the system in different hospital setups and in different cancers.

P49. Surgery for stage IV breast cancer

Zenon Rayter

Bristol Royal Infirmary, Bristol, UK

Introduction: In the West, 5% of patients with breast cancer present with metastatic disease. There is reluctance to offer surgery in these patients but an increasing literature suggests that this may improve survival.

The aim of this study was to review the literature for evidence of benefit for surgery.

Methods: Papers published in this field over the last 10 years were reviewed along with the theoretical basis of the effect of surgery on metastases over the 20th century.

Results: Two large scale reviews of 13 retrospective studies have been examined. The majority of these retrospective studies are remarkably consistent in their findings from the United States and Europe. These showed that surgery on the primary tumour was associated with a 40% reduction in the risk of death compared with patients who were not offered surgery (CI varied from 0.58-0.62 to 0.4-1.0 depending on the size of the study). Only 2 studies suggested that there was no benefit (NS). Factors which were most closely associated with benefit were clear surgical margins, young age, fewer sites of metastatic disease, better performance status and disease confined to soft tissue and bone. Experimental evidence against benefit suggested that surgery increased angiogenic factors and circulating tumour cells which increased metastatic growth, whilst other evidence suggested that surgery might improve immunocompetence and render metastases more susceptible to the effects of chemotherapy.

Conclusions: Surgery may offer a reduction in the risk of death by as much as 40% and there is no evidence in the literature that it adversely affects outcome.

P50. Identification and validation of tyrosine phosphorylated proteins that may be used to predict response to neoadjuvant chemotherapy treatment

Helen Moor¹, Khalid Al-Janabi², Sankaran ChandraSekharan³, Louise Alldridge⁴, Serhiy Souchelnyski⁵, Christina Greenwood¹

¹Helen Rollason Laboratory, Anglia Ruskin University, Chelmsford, UK

²Histopathology Department, Broomfield Hospital, Chelmsford, UK

³Essex County Hospital, Colchester, UK

⁴School of Medicine, Griffith University, Queensland, Australia

⁵Karolinska Institutet, Biomics Center, Stockholm, Sweden

Introduction: A significant proportion of patients with locally advanced breast tumours show a poor or partial response to neoadjuvant chemotherapy (NAC) consisting of Taxol/AC (Adriamycin and Cyclophosphamide). There are no reliable markers that can accurately predict patients' response to NAC. The aim of this study is to identify and validate a panel of novel phospho-proteins and their pathways which may be used to predict responsiveness to NAC treatment.

Materials and Methods: Frozen tissues collected before (core biopsies) neoadjuvant chemotherapy (LREC approved study: 04/Q0303/28) were categorised by pathological response (complete, no response and progressive disease). Lysates were enriched for tyrosine-phospho proteins and separated by 2D electrophoresis. Proteins showing consistent differences between response groups were identified by mass spectrometry (MALDI-TOF) and using the NCBI Inr sequence database (ProFound). Functional pathway analysis was performed using Ingenuity Pathway Analysis. Proteins specific to each response group were identified and validated further in a new cohort of NAC clinical tissues by western blot, immunohistochemistry and immunoprecipitation techniques.

Results: Phospho-protein expression profiles were successfully established from core biopsies. Proteins involved in cell division, microtubule formation and cellular transport were identified from the different response groups. Pathway analysis suggested the TP53 and tumour necrosis factor pathways may be involved in NAC non-responsiveness. Validation in tumours showed expression and subcellular localisation of proteins varied between response groups.

Conclusion: Proteins and pathways identified by the proteomic screen showed scientific and clinical relevance to NAC responsiveness. Subsequent validation suggests protein subcellular localisation may be important in imparting response or resistance to NAC.

P51. Suspicious lymph nodes after sentinel lymph node biopsy in early breast cancer.**Isaac D. Gukas, Adel Ben-Hamida, Sana Ullah, Rishikesh Parmeshwar, Jorien Bonnema**

University Hospitals of Morecambe Bay, Lancaster, Lancashire, UK

Introduction: Sentinel lymph node Biopsy (SLNB) in early breast cancer is an established procedure for staging and prognostication. Occasionally, the procedure fails or the surgeon encounters clinically suspicious glands and has to proceed to Axillary Lymph Node Dissection (ALND). The study analysed the implication and usefulness of this practice in the management of the axilla.

Methods: Prospectively collected data regarding SLNB carried out in 2005 - 2008 in University Hospitals of Morecambe Bay were reviewed. A subset of patients in whom the surgeon proceeded to further axillary surgery at the same time was analysed.

Results: Of a total of 556 SLNB procedures, 71(12.8%) had further axillary surgery. In 21 cases, this was due to failed sentinel node (SN) localisation. In 50 cases, this was due to suspicion of possible nodal involvement. Of these 50 cases, 17(34%) had positive nodes. The SLNB was positive in 14 of these cases and negative in 3(17.7% false negative rate). In 5 (29.4%) of the 17 positive cases, the sentinel nodes were the only positive nodes.

Conclusions: In cases where the surgeon has intraoperative suspicion of possible nodal involvement, the SLNB has a high (17.7%) false negative rate. However, proceeding to immediate further axillary surgery in these cases benefitted only 34% of cases (saved a second surgery) but predisposed 66% of patients to unnecessary axillary surgery. Efforts should be made to increase preoperative diagnosis with the use of axillary ultrasound/fine needle aspiration biopsy and intraoperative SN analysis to reduce the risk of unnecessary ALND.

P52. Continuous local anaesthetic wound infiltration in latissimus dorsi flap reconstruction after mastectomy**Helen J. Lawrence, Carole Jellicoe, Venkat Hariharan, Kian H. Chin**

Milton Keynes Hospital NHS Foundation Trust, Milton Keynes, UK

Introduction: Surgically placed wound infusion catheters (SPWC) provide excellent postoperative analgesia for a variety of surgical procedures. Little is published about their use in oncological breast surgery. We report the use of SPWC in women undergoing mastectomy with immediate and delayed latissimus dorsi flap reconstruction.

Methods: We performed a retrospective review of 10 patients with SPWC. 10 patients in whom SPWC were not used acted as a control group. One surgeon (KC) performed all surgery, with electrical diathermy and 4 surgical drains. A single SPWC (On-Q PainBuster®, Kimberly-Clark) was inserted in the subdermal layer of the mastectomy wound, with a twin catheter in the donor site. Catheters were primed with 30ml 0.25% bupivacaine. Elastomeric pumps infused 0.25% (n=7) or 0.125% bupivacaine (n=3) at a combined rate of 9ml/hr for 48 hours postoperatively. Pain scores, analgesic requirements, and length of hospital stay were reviewed.

Results: There were no complications associated with SPWC. A trend towards reduced overall pain scores in the study group was noticed. Mean morphine usage in the study group was 2.4mg (0-10mg) compared to 45.5mg (0-100mg) in the controls. Mean hospital stay was 5.4 days in the study group and 6.4 days in the controls.

Conclusion: SPWC provide good postoperative analgesia for latissimus dorsi flap reconstruction after mastectomy, with reduced morphine requirements. They are simple to use, with anecdotal reports of high patient satisfaction in our study. A trend towards shorter hospital stay is noteworthy. A large, prospective study is needed to further evaluate SPWC in this field.

P53. Clinical response to primary Letrozole therapy in women over 70 years with early breast cancer: A retrospective study with a 5 year follow up**Tasadooq Hussain¹, Vijay Agarwal², Veerabhadram Garimella³, Selvi Rhadhakrishna⁴, John Fox⁵, Peter J. Kneeshaw⁵, Ervine Long⁵, Tapan Mahapatra⁵, Penelope McManus⁵, Michael J. Lind⁵, Philip Drew², Lynn Cawkwell⁵**¹ Cancer Biology Proteomics Group, Postgraduate Medical Institute of the University of Hull, Hull, UK² Breast Care Unit, Hull and East Yorkshire NHS Trust, Hull, UK³ Hull York Medical School, Hull, UK, Hull, UK⁴ Queens Centre for Oncology and Haematology, Hull and East Yorkshire NHS Trust, Hull, UK⁵ Histopathology Department, Hull and East Yorkshire NHS Trust, Hull, UK

Background: Primary Tamoxifen therapy has been widely used to treat elderly women with ER-positive breast cancer in the past. Aromatase inhibitors may be more beneficial than Tamoxifen when used as primary endocrine therapy in elderly patients. We therefore aimed to retrospectively evaluate a series of elderly women with ER-positive breast cancer treated at our Breast Care Unit with primary Letrozole therapy with a minimum of 5 years follow-up.

Patients and Methods: A total of 45 women, aged more than 70 years ER-positive breast cancer treated with primary Letrozole therapy were identified. A case note review was undertaken to obtain clinical information. Diagnostic core biopsies were available for all patients. Immunohistochemical analysis was performed to establish the protein expression status of p53, PR, HER2, EGFR and BCL2.

Results: The mean age of 45 patients was 87 years (range 70-101). Clinical benefit was seen in 60% of the patients. Median progression free survival was 53 months (95% CI – 34 to 72) and median time to progression was 43 months (95% CI – 22 to 64). BCL2 was expressed in 100%; PR in 84%; EGFR in 29%; HER2 in 20% and p53 in 11% of tissue samples. Positive expression of p53 was associated with poor progression free survival (p=0.03).

Conclusion: This study demonstrates that Letrozole as sole treatment appears to be a suitable therapeutic option for elderly patients with ER-positive breast cancer who are not fit for, or decline, surgery. The analysis of p53 in a larger study is warranted in order to assess its role as a predictive biomarker

P54. X marks the spot – A simple adjunct to the wire localisation technique for impalpable breast lesions**Cheryl R. Lobo, Alison J. Hainsworth, Chantel Ellis, Sophie Allen,****Louise Wilkinson, Dibyesh Banerjee, Anup K. Sharma**

St George's Healthcare NHS Trust, London, UK

Introduction: The 2009/10 NHSBSP & ABS audit of surgically treated screen detected patients in the UK reported re-excision rates of 25%. Our unit 5 year re-excision rate is 19.8% (p=0.013). The majority of screen detected breast tumours are impalpable and the key to successful management is accurate localisation. The wire-guided technique is the current gold standard but re-excision rates remain high. We describe a simple adjunct to this localisation technique that may account for our lower re-excision rates.

Method: All patients undergoing wire-guided wide local excision for impalpable breast cancer between March 2006 and March 2011 were included. In addition to the wire, an ultrasound guided X-mark was placed on the skin over the wire tip. Demographic data, tumour characteristics and outcome measures (margin status, re-excision rates and recurrence) were retrospectively collected.

Results: Second procedures were performed on 51/252 patients (20.2%) for involved/close margins. Of the 176 screen detected patients, 21(17.9%) with invasive cancer and 16(27.1%) with non/micro-invasive cancer underwent re-excision. Of the 76 symptomatic patients, 9(16.7%)

with invasive cancer and 5(22.7%) with non/micro-invasive cancer underwent re-excision. Median follow-up was 47 months and no recurrences have been diagnosed to date.

Conclusion: The X-mark enables us to hone in more accurately on the lesion to achieve oncological clearance and reduce the need to take secondary margins at the first operation. The financial gains to the hospital are a by product of this technique with the most significant gains being made by our patients in reducing the number of operative interventions.

P55. Patient Satisfaction with Nurse-led Breast Screening Results Clinic

Annie Kerr¹, Sisse Olsen¹, Sandra Cookson¹, Raten Davies¹, Gill Gray¹, Douglas Ferguson²

¹Royal Devon & Exeter Foundation Trust, Exeter, UK

²Royal Devon and Exeter NHS Foundation Trust and Peninsular Medical School, Exeter, Devon, UK

Introduction: The NHS Breast Screening programme was contracted to a private provider, Lister In-Health in April 2006. This established a Nurse-led Results clinic, staffed by Breast Care Nurses (BCN) to inform patients of their biopsy results, following Multidisciplinary Team Meeting, prior to referral to a Breast Surgeon. There are no published examples of this service. The aim was to assess satisfaction with the service delivered, with particular focus on the level of psychological support offered.

Method: A patient satisfaction questionnaire was developed with the governance support team and sent to 100 consecutive women attending the Nurse-led results clinic in 2011.

Results: The response rate was 63%. No patients were unhappy to see a nurse rather than a doctor although 17% expected to see a doctor. 89% understood their diagnosis, while 11% understood some of what was explained. 100% indicated they were given the right amount of information and 97% felt well informed before seeing a surgeon. 97% felt well supported by the BCN seen in the clinic. Analysis of qualitative data shows high levels of satisfaction, patients felt reassured by and comfortable in the results clinic.

Conclusions: These data show high level of satisfaction with this Nurse-led service. No patients would have preferred to see a doctor at this stage. Many found it useful to have met their BCN in the screening session and have them follow their treatment in hospital. This evaluation shows that results can be effectively delivered by a Breast Care Nurse-led clinic in the screening setting.

P56. Audit of pre-operative staging in the axilla in grade III breast cancer – is the Memorial Sloan-Kettering Cancer Centre nomogram a useful adjunct?

Baek Kim, Devinder Gupta, Zbigniew Kryjak
Pinderfields Hospital, Wakefield, UK

Patients with grade III breast cancer are at higher risk of axillary metastasis. Our aim was to ascertain the accuracy of pre-operative staging of the axilla. The Royal College of Radiologists sets the standard at sensitivity of 50%. The Memorial Sloan-Kettering Cancer Centre (MSKCC) nomogram is an online tool that calculates the probability of spread to sentinel lymph nodes. Our aim was to determine if this is a useful adjunct.

Data analysis was performed retrospectively on patients with operable grade III breast cancer (August 2009 - August 2010). We calculated the nomogram probability for each patient. Out of 113 patients, pre-operative diagnosis of axillary metastasis was achieved in 39 patients. With ultrasound scan, and fine needle aspiration, sensitivity of 74.5% and specificity of 98.4% were achieved.

48 patients underwent axillary node clearance initially (41.6%). 9 of these patients underwent clearance to avoid potential second operation to the axilla. However, none of these patients yielded positive nodes, with average MSKCC probability of 72.1% (range; 58% - 89%).

65 patients underwent sentinel node biopsy (58.4%). 12 of these patients required completion clearance. In total 51 patients were diagnosed with axillary metastasis (45%). The area under the receiver operating characteristic curve was 0.77 for the nomogram.

In the face of high sensitivity and specificity rates for pre-operative staging, the nomogram did not provide any additional benefit in predicting axillary metastasis. Axillary node clearance must not be performed without evidence of metastasis in pre-operative staging.

P57. UK National survey of Gynaecomastia management

Gael M. MacLean, Brendan Smith, Hilary Umeh, Stephen P. Courtney
Royal Berkshire Hospital, Reading, UK

Introduction: Approaches to the non-surgical management of gynaecomastia vary; this was reinforced in a pilot questionnaire sent to ten UK breast surgery departments. To obtain a nationwide picture we conducted a survey using a structured questionnaire.

Methods: A SurveyMonkey© questionnaire with ten questions, based on responses from the pilot study, was emailed to all 534 full members of the Association of Breast Surgery. Of those who opened the email (n=275) 181 replied giving a 66% response rate. A total of 117 breast units were represented throughout the UK.

Results: A total of 42% centres received more than 10 referrals per month, with a mean of 19 patients. Some units used breast imaging for all referrals (40%) whereas others were more restrictive and a few (10%) did not use imaging at all. Most units (64%) performed ultrasound of the testes if clinical or biochemical abnormalities were found whereas 34% never imaged the testes. There was a surprising difference in the use of hormones/biochemistry between units. Testosterone was often requested (49%) and so were LFTs, HCG and oestradiol (40%). For discrete lesions, histology was requested by a majority (70%). Only 6% never took tissue samples. Painful gynaecomastia had no specific treatment in 51% centres, whilst clinicians inclined to treat prescribed tamoxifen (85%) or danazol (15%).

Conclusions: Gynaecomastia generates a huge amount of work in breast departments throughout the UK. There are clear differences in clinical management and consensus based on best possible evidence is needed.

P58. The Correlation of Multifocality with Lymph Node status in Patients with Breast Carcinoma

Emma de Sousa¹, Nigel Bundred², Richard Johnson²

¹North Manchester General Hospital, Manchester, UK

²University Hospital of South Manchester, Manchester, UK

Background: One of the factors used to predict breast cancer prognosis is tumour size. For staging of multifocal breast cancers, the current recommendation is to use the diameter of the largest tumour nodule of the highest grade, regardless of the number or size of additional nodules. This assumes that the metastatic potential of multifocal tumours is determined by the size of the largest nodule. As a result, the total tumour burden is potentially underestimated because additional, often sizeable nodules, are not included. We explored the relationship between tumour size and lymph node metastasis. Our objective was to compare multifocal tumours and same sized unifocal tumours, to assess whether there is an observed higher frequency of axillary lymph node metastasis.

Method: 126 patients with multifocal tumours were identified from the pathology database between January 2005 and December 2006. A control series of 1522 consecutive patients with unifocal invasive breast cancer obtained from our database between 1992 and 1999 was used for comparison. Differences in histological type, tumour grade and size, hormone receptor status and axillary lymph node metastasis between the multifocal and unifocal groups were analysed.

Results: Overall, multifocal tumours had a higher frequency of positive axillary lymph nodes compared to patients with unifocal lesions of the same size (49% vs. 30%, p<0.001). Grade 1 tumours were more common in the

unifocal group (25.7% vs. 13.5% $p < 0.001$) and grade 3 tumours were more common in the multifocal group (42.1% vs. 31.3%, $p = 0.001$).

Conclusion: Multifocal breast cancers are associated with increased axillary lymph node metastasis compared with unifocal breast cancers of identical size. An improved method of including the increased tumour burden presented in multifocal breast cancer in the future would enable more accurate assessment of metastatic potential.

P59. Imaging in patients aged 35-39: Which modality is best?

Rebecca Griggs, Christina Harris, Rachel Bright-Thomas, Michelle Mullan

Worcestershire Royal Hospital, Worcestershire, UK

Introduction: In the last 12 months new guidelines for imaging of symptomatic breast problems in women aged 35-39 have been published, which advocate that ultrasound scan (USS) should be adopted as the primary imaging modality in this age group and mammography (MMG) reserved for those with suspicious or atypical findings clinically and/or on imaging. We sought to investigate the adequacy of USS alone in our unit prior to introducing this change.

Method: All new patients aged 35-39 years attending breast clinic from January 2008 to December 2010 who had a radiological investigation were identified. Imaging results were cross referenced with histology to establish those diagnosed with cancer and to see how this was identified.

Results: 542 patients were identified, 15 (3%) were men. 398 (73%) patients were investigated with MMG, 285 of these also had USS and 144 (27%) patients had USS only. 28 patients were diagnosed with breast cancers. 17 cancers were investigated with both MMG and USS, but in all of these the USS was graded U3/4/5 using the breast imaging reporting and data system (BIRADS) classification. 1 cancer only had USS (U4/5) and 1 cancer was diagnosed on MMG without an USS being done. There were no incidental findings of breast cancer on MMG.

Conclusion: We found that USS in this group of patients was more sensitive for the identification of breast cancer than MMG. Thus MMG could be reserved for patients with atypical or sinister findings on USS and we have adjusted our guidelines accordingly.

P60. Routine pre-operative Chest Radiography for invasive breast cancer. A stage too far?

Rachel Hubbard, David Howarth, Sunil Amonkar, Stewart Nicholson

Royal Victoria Infirmary, Newcastle Upon Tyne, UK

Introduction: North East Cancer Network guidelines state chest radiography (CXR) should be performed on all invasive breast cancer patients prior to surgery. Limited evidence supports this. Current NICE quality breast cancer standards indicate staging for inflammatory, locally advanced and recurrent breast cancer or those with symptoms of distant spread. We assessed findings of pre-operative CXRs for all patients with clinically early invasive breast cancer.

Methods: Patients with newly diagnosed clinically early stage breast cancer between April 2010 and March 2011 were identified from our database. CXR reports and case notes were retrospectively reviewed to determine if imaging affected operative management. All CXRs performed were reported by a consultant radiologist.

Results: 503 patients were studied: 4 male, mean age was 62.2 (range 32-91) years at initial diagnosis. 475 patients underwent pre-operative CXR, 461 being normal (97%). 14 patients had significant findings necessitating further assessment, 8 of whom having benign respiratory and mediastinal pathology. This did not affect their operative management. 3 patients had lung metastases and one had a primary lung carcinoma, 2 of whom were symptomatic with voice changes. All four of these patients did not proceed to surgery. One patient failing to have pre-operative CXR presented 5 months following surgery and was found to have lung metastases.

Conclusion: Although CXR is a cheap, simple and readily available test, <1% of all patients had significant findings affecting their management. Our findings are similar to prior evidence questioning the value of pre-operative CXR in asymptomatic patients with clinically early stage breast cancer.

P61. Can blue dye be omitted for sentinel node identification?

Lucinda Tullie, Louise Paolini, Haresh Devalia

Maidstone and Tunbridge Wells NHS Trust, Maidstone, UK

Introduction: Sentinel node biopsy (SNB) for breast cancer is commonly performed with radioactive isotope and blue dye. However, blue dye is not without side effects. The study aim was to quantify the role of blue dye in metastatic sentinel node (SN) identification.

Methods: This single-centre audit examined all metastatic SNs in breast cancer patients between December 2006 and August 2010. Data was retrospectively collected from a prospective local breast-unit database. Appearance and radioactivity of SNs, identified using dual technique, were documented at excision.

Results: All breast cancer patients with negative axillary ultrasound examination underwent SNB with dual technique. There were 744 patients who underwent SNB and 134 (18%) had positive SNs in final histology. In total, 312 SNs were sampled (median 2.33 nodes/patient, range 1-6) of which 179 were positive and 133 negative. There were 105 patients with "hot" metastatic SNs, 80 of which were identified by both techniques. In 24 patients, the metastatic SN was identified by blue dye alone. Of these, 9 SNs were blue and cold, 15 blue and warm (<10% radioactivity of injection count). Four further patients had cold SNs, with normal appearance, surrounded by blue lymphatics.

Conclusions: Blue dye was solely responsible for metastatic SN detection in 28 patients. This translated into a change in subsequent management of 20.89% of patients with metastatic nodal disease (3.76% of patients who underwent SNB). Despite documented side-effects, blue dye use is essential in metastatic SN identification.

P62. Hadfield's Procedure: A necessary decision to make?

Dharmadev Trivedi, Zbigniew Kryjak

Pinderfields Hospital, Wakefield, West Yorkshire, UK

Introduction: Sub-areolar major mammary duct excision – Hadfield's procedure has gained widespread acceptance in management of nipple-areola complex symptoms like suspicious or troublesome discharge, clinical or sono-mammographic central anomalies and chronic sinus/fistula. In recent years, there have been concerns regarding true indication for the procedure.

Methods: Retrospective trust-wide audit of single procedure was carried out by identifying patients from central database with the help of IT department. Data collection was done by studying case notes and reviewing trust's online results' portals. Comparative analysis was done with published evidence.

Results: 103 patients underwent 110 Hadfield's procedures between 01/01/2008 and 31/01/2011. Median age was 48 years (range 23 to 85). Presenting symptoms were Nipple discharge for 80 procedures (72.7%), Inflammation/infection for 18 (16.3%), Lump for 5 (4.5%) and miscellaneous for 4 (3.6%). There were one invasive cancer (0.9%), 3 DCISs (2.7%), 38 papilloma (34.5%) and 68 benign changes (61.8%). In patients with benign pathology, 36 (58%) had initial suspicious presentation leading to the Hadfield's procedure. 27 minor complications were noted in 23 patients (22%) with no major complication. Diagnostic accuracy for clinical suspicion, ultrasound, mammography, cytology and core biopsy were 59.1%, 70.5%, 62.6%, 74% and 77.3% respectively.

Conclusion: Hadfield's procedure remains operation of choice in suspicious nipple discharge supported by suspicious results of investigations. Overall yield of cancer remains low. Core biopsy has the best diagnostic accuracy of all investigations. There remains need of definitive national / international guidelines for same.

P63. Recurrence rate after Skin Sparing Mastectomy and Immediate Reconstruction

Amit Agrawal¹, M. Grewal², P. Sneddon², D.M. Sibbering², C.A. Courtney²

¹ University of Nottingham, Division of Breast Surgery, GEM School, Derby, UK

² Royal Derby Hospital NHS Trust, Department of Breast Surgery, Derby, UK

Introduction: We present local recurrence (LR), systemic recurrence (SR) & disease-free survival (DFS) after Skin-sparing mastectomy (SSM) in operable breast cancer in light of increase in in-situ disease following screening and advent of aromatase inhibitors.

Methods: 95 patients had SSM over 4 years period (April 2006-July 2010). 13 patients were excluded (risk-reducing for high-risk family history or prophylactic after contra-lateral cancer).

Results: 81 patients (median age = 51.7 (31.5-66.1) years) had 82 SSM with immediate reconstruction (58 implant based; 23 LD flap). Tumour types were invasive (n=48): ductal (37.8%), invasive lobular (7.3%); non-invasive (n=34): DCIS alone (37.8%). Median tumour size: 22 (1-86) mm including in-situ disease. Median clear distance was 5 (0-45) mm. Sentinel node was positive in 18.3% (excluding pure in-situ disease). Median NPI was 3.54 (2.1-6.98), ER positive (84%, pure in-situ-70.6%), HER2 positive (8.5%). 17.1% patients received Radiotherapy to breast & 37.8% patients received hormone therapy (tamoxifen-24.4%, upfront AI-4.9%, switch regime-8.5% i.e., tamoxifen to exemestane at 2 years). 8 (9.6%) patients had infection/wound healing problems with loss of implant in 3 (3.6%). At a median follow-up of 23.9 (9-64) months, there was one LR with SR (liver) and one SR only (brain & liver) following invasive disease with a median DFS of 24.4 (6.1-61.9) months (26.9, 10.8-61.9 in pure in-situ disease).

Conclusions: The LR (2%) and SR (4%) rates are lower than current literature for invasive tumours. It also confirms that immediate reconstruction does not compromise adjuvant therapy and that adjuvant radiotherapy does not compromise immediate reconstruction.

P64. Pre-operative axillary assessment and its impact on intra-operative frozen section requirement

Nihit Rawat, Rebecca Fallaize, Sarah Vestey

Gloucester Royal Hospital, Gloucester, UK

Introduction: Since the advent of sentinel lymph node biopsy (SLNB) intraoperative frozen section (FS) analysis has been used to reduce re-operation, but is time-consuming and costly. This study assessed the impact of improved accuracy of pre-operative axillary biopsy (FNA /core biopsy) through the routine addition of needle-washings on frozen-section requirement.

Methods: Rates of frozen-section before/after the introduction of improved axillary pre-op staging (routine addition of USS guided nodal FNA needle washings to direct smears) were compared, and the accuracy of this modality was assessed by determining its sensitivity, specificity, positive and negative predictive value.

Results: Overall, 66 patients had enlarged nodes biopsied pre-operatively with needle-washings, which had a positive predictive value of 100%, negative predictive value 79.06%, sensitivity 71.8% and specificity 100%. During the first study period (n=66) there were 25 frozen sections (37.87%) and 7 frozen sections (11.66%) in the second (n=60). The use of frozen sections reduced (p = 0.001) but did not increase the need for secondary axillary clearance.

Conclusion: Combination of axillary nodal FNA with washing decreases the need for intra-operative FS has acceptable accuracy and is a useful adjunct in preoperative work-up of breast cancer patients.

P65. Should we be using ultrasound guidance for all fine needle aspiration cytology and core biopsies in symptomatic breast patients?

Robert Stuart McCormick, Michael S.J. Wilson, Sebastian R. Aspinall, Ian A. Goulbourne, Ramesh Kasaraneni, Paola Serra, Wendy Carr

North Tyneside General Hospital, North Shields, Tyne and Wear, UK

Introduction: NICE guidelines "Improving Outcomes in Breast Cancer" recommend patients under investigation for suspected breast malignancy should have image guided (IG) core biopsy (CB) or fine needle aspiration cytology (FNAC) as part of their triple assessment. Our aim was to determine the proportion of IG investigations undertaken in our unit and determine whether adequacy rate of IG samples was greater than freehand (FH) samples.

Methods: A retrospective audit was undertaken of 100 patients, presenting to our symptomatic breast clinic, who subsequently underwent either FNAC or CB for breast masses that were all apparent on ultrasonography.

Results: 100 patients underwent 163 investigations (103 CB and 60 FNAC), of which 108 (66%) were IG and 55 (33%) were FH. Overall the number of inadequate samples obtained was significantly less in the IG group (5.6% versus 18.2%, p=0.02, Fisher's exact), in patients with benign disease (9.8% versus 28.6%, p=0.04, Fisher's exact), but not those with malignant disease. A trend (p>0.05, t-test) towards improved sample accuracy was observed for larger lesions (mean diameter 26 versus 20mm) and older patients (mean age 53 versus 48 years).

Conclusions: Two-thirds of our patients undergo IG FNAC or CB as part of triple assessment. IG improves sample adequacy and should therefore be used for all breast biopsies to reduce the need for repeat biopsies. Surgeon-based IG biopsy maybe a practical way of achieving this.

P66. Use of Pre-Operative Chest X-Ray In Breast cancer Surgery Patients

Alistair Greenbank, Ingrid Briton, Sankaran Narayanan

University Hospital North Staffordshire Hospital, Stoke on Trent, UK

Introduction: NICE state that only symptomatic breast surgery patients should undergo pre-operative staging. The Association of Breast Surgery state pre-operative chest x-ray use should be governed by local protocol. At University Hospital North Staffordshire, patients are classified as high or low risk of metastatic spread. High risk patients (> 4 axillary lymph nodes, locally invasive or unfavourable histology) are staged by CT, low risk patients are staged by chest x-ray. A 2009 audit showed chest x-ray was non-contributory in DCIS patients. This re-audit assesses the entire low risk group to quantify the contribution of the x-ray.

Standard: That a local protocol exists aligning with NICE Quality Standards.

Method: The x-rays of 231 consecutive breast patients from 01/03/2011 to 06/09/2011 were considered. There was no pre-selection, pathologies were mixed.

Results: Only 11 patients had pathology identified:

- **False Negatives.** 2 patients had a negative x-ray. Later CT showed stable nodules.
- **False Positives.** 7 patients had underlying lung pathologies unrelated to breast cancer.
- **True Positives.** 2 patients were known to have metastatic disease before the chest x-ray so the CXR was redundant.

Conclusions: Chest x-ray influenced patient care in 0 low risk cases. This shows current triage effectively segments patients for whom x-ray is non-contributory. As a consequence, protocol for chest x-ray has been altered to remove it as a routine investigation for low risk patients, simplifying pre-operative investigations, reducing radiological exposure and associated workload.

P67. A safe, cost-effective and efficacious immediate breast reconstruction? Single stage immediate breast reconstruction with a dermal sling, implant and free nipple graft.

Graham Peat, James Harvey, Amy Robinson, Pud Bhaskar

North Tees and Hartlepool NHS Foundation Trust, Stockton On Tees, UK

Introduction: Dermal sling and implant based immediate breast reconstruction is a useful option for women with breast ptosis. Dermal slings use autologous tissue as an inferio-lateral sling, avoiding the costs and potential morbidity of using a biological/ prosthetic mesh. An optimal breast reconstruction provides the patient with an optimal outcome with the fewest number of procedures. We hypothesise that single stage dermal sling breast reconstructions with free nipple grafts can be used as a safe, cosmetically acceptable breast reconstruction.

Methods: A retrospective review was performed of patients following an immediate breast reconstruction using a dermal sling with implant and free nipple graft. Data was collected on a single surgeon's experience from Jan 2009 to October 2011. Reconstructions were performed using a Wise pattern skin incision. An inferior dermal sling is sutured to pectoralis major to form a pocket for coverage of a permanent silicone implant or tissue expander. A free nipple graft was sited at the time of the reconstruction with biopsies taken from retroareolar tissue.

Results: 9 patients were identified in total. Two patients underwent prophylactic mastectomies, two for DCIS and five for invasive cancer. There were no significant complications. The mean number of procedures per patient was 1.1. All nipple grafts survived. Retroareolar biopsies were all benign, and no local recurrences have occurred. Breast Q questionnaires show a high level of patient satisfaction with this procedure.

Conclusions: This method offers a potentially safe and cosmetically acceptable method of breast reconstruction in a single stage.

P68. The management of breast sepsis in primary care

Donna Egbeare¹, Simon Hawkins¹, Ian Morrell², Michael Green¹

¹South Devon Healthcare NHS Foundation Trust, Torquay, Devon, UK

²South Devon NHS Primary Care Trust, Torquay, Devon, UK

Introduction: It has been suggested the relatively high incidence of breast abscess formation in lactating and non-lactating women is due, at least in part, to sub-optimal management in primary care. However, there is little evidence. We designed a questionnaire to assess local primary care management of breast sepsis.

Methods: An anonymous online questionnaire was developed based on clinical scenarios offering a range of treatment options. Email invitations to complete the survey were sent to local general practitioners via practice manager networks.

Results: 44 responses were received. 81% were from GP partners. 59% of respondents were male. Only eight (18%) respondents were aware of national or local guidelines. Six respondents told us what these were – ranging from review articles to Map of Medicine. Knowledge of first line antibiotics (based on local formulary recommendations) and antibiotic use in lactating women was good. 59% respondents thought a week of antibiotics was the optimum length of course. Risk factors for infection were correctly identified in most cases; breast feeding and smoking were those most commonly mentioned. In case scenarios, GPs were most confident treating lactational abscesses, but seemed more uncertain when to refer a non-lactational abscess to clinic or admit for incision and drainage.

Conclusions: This survey suggests a need for further training and development of easily accessible local or national guidelines for the management of acute breast abscess by general practitioners, in particular the management of non-lactational abscesses and when to refer to breast clinic or for acute admission.

P69. Out-of-hours management of acute breast sepsis by general surgical trainees

Simon Hawkins, Donna Egbeare, Michael Green

South Devon Healthcare NHS Foundation Trust, Torquay, Devon, UK

Introduction: Out-of-hours management of acute breast sepsis is frequently by the on-call general surgical team, who may have no previous breast surgery experience. Management of breast sepsis is part of the ISCP curriculum at CT (core training) level 1 and 2. A regional survey of the management of acute breast sepsis by junior surgical trainees was performed to assess current practice in the South West of England.

Methods: An anonymous online questionnaire was developed based on clinical scenarios offering a range of treatment options. In all scenarios either ultrasound guided drainage or urgent referral to specialist breast clinic were indicated. Trainee demographics and past breast surgery experience was recorded. 70 junior (F2-CT2 level) surgical trainees from the South West of England from six NHS Trusts were invited to participate in the survey.

Results: 36 trainees responded (51%). Results demonstrated a worrying trend towards inappropriate management with emergency incision and drainage (26-40%). Less than 50% of trainees answered they would arrange either ultrasound guided aspiration or assessment in a specialist breast clinic within normal working hours in any of the scenarios. When considering management of lactational abscesses, 43% of respondents incorrectly advised the patient to stop breast-feeding from the affected breast. 97% of respondents reported no knowledge of any local, regional or national guidelines regarding breast sepsis.

Conclusion: There is need for further training and development of easily accessible local or national guidelines for the management of acute breast sepsis by general surgical trainees, which forms part of the ISCP curriculum.

P70. Focal Adhesion Inhibition Kinase alone or in combination with ionising radiation leads to reduced human DCIS stem cell activity

Kathryn Williams, Gillian Farnie, Nigel Dundred

¹University of Manchester, School of Cancer and Enabling Sciences,

The Paterson Institute for Cancer Research, Manchester, UK

²University Hospital of South Manchester, Manchester, UK

Introduction: Breast cancer stem cells (CSCs) are tumour initiating and known to survive radiotherapy. Focal Adhesion Kinase (FAK) is a non-receptor tyrosine kinase overexpressed in breast cancers and implicated in the regulation of CSCs in mice. We investigated the effect of FAK inhibition in human ductal carcinoma in situ (DCIS) CSCs.

Methods: SUM225 and MCF10DCIS.com cell lines or cells from patients undergoing mastectomy for DCIS (n=5) (LREC#01/012) were grown *in vitro* using the mammosphere assay as a measure of CSC activity. Mammosphere-forming efficiency (%MFE) was calculated as percentage colony formation in the presence or absence of a FAK inhibitor PF573228 (0-5µM), with or without a single 2Gy dose of ionising radiation (IR). Secondary generation cultures of mammospheres were performed with no additional treatment to measure CSC self-renewal. Mammosphere regeneration ratio (MRR) was determined as the proportion of secondary mammospheres relative to the number of primary.

Results: PF573228 alone decreased %MFE from 2.26±0.11% to 0.98±0.05% (p<0.001) in SUM225 and from 1.23±0.09% to 0.38±0.03% (p<0.001) in MCF10DCIS.com cells. In primary DCIS, a 53% fold decrease in MFE was measured (p<0.01). 2Gy IR alone reduced %MFE in all cell types, but a combination of PF573228 and 2Gy IR led to a significantly greater decrease in %MFE than with either treatment alone. MRR was reduced in both cell lines with 0.5µM (p<0.01) or 1.0µM (p<0.001) PF573228 respectively. Preliminary data in primary DCIS cells (n=1) also shows a reduction in MRR, from 0.56 to 0.14.

Conclusion: FAK inhibition alone or in combination with ionising radiation reduces human DCIS CSC activity and self-renewal. Targeting FAK in the treatment of DCIS may reduce disease recurrence and improve patient outcome.

P71. Patient reported outcome measures for a systematic breast pain protocol supported by professional quality bra-fitting by clinic staff - our service is popular and successful

Jackie Woollett, Kim Insley, Christina Bailey, Susan Williams-Jones
Queen's Hospital, Burton-on-Trent, UK

Introduction: Patients reporting breast pain without other breast symptoms remain a significant part of the breast outpatient workload. Breast pain causes anxiety to patients so we introduced a protocol for first line treatment of patients with normal physical breast examinations and chest wall tenderness experienced as breast pain. We assessed its effectiveness and value to patients with a patient reported outcome questionnaire. The breast pain protocol (BPP) consists of a professional quality bra-fitting, a 28 day course of analgesia taken after a new bra had been bought and a full clinical review at 10 weeks.

Methods: A consecutive series of 100 patients treated with our BPP between September 2010 and February 2011 were invited to complete a confidential questionnaire at their review visit.

Results: 91/100 returned questionnaires. 81/91 reported an improvement in symptoms - 6/81 did not specify a reason; 41/81 ascribed improvement to a combination of bra-fitting and medication; 8/81 ascribed improvement to medication alone; 26/81 ascribed improvement to their new bra size alone. 10/91 patients did not report an improvement in symptoms. Medication was troublesome to 27/80 patients prescribed additional medication - sufficient to prevent 15/27 from completing their course. Bra-fitting was popular: 76/91 patients were satisfied with the advice given and 74/91 patients followed the advice when buying a new bra. However 39/91 patients experienced difficulty buying a bra.

Conclusion: Our BPP has subjectively helped the majority of our patients. Satisfaction rates are high, especially for the bra-fitting service, which is difficult to locate in the commercial shopping environment.

P72. A Comparison of Adjuvant! Online and PREDICT in estimating the 10 year Survival benefit of Chemotherapy in a clinical setting

Jevan Taylor, Fiona Hoar
City Hospital, Birmingham, UK

Background: Adjuvant! is widely used to inform decision making in treating breast cancer by estimating the benefit afforded by hormone therapy and chemotherapy. In 2010, a UK-based online prognostication model (PREDICT) was released, which takes account of method of diagnosis and HER-2 status. The aim of this study was to determine if the use of PREDICT would alter our unit's recommendations for chemotherapy which are currently based on Adjuvant!

Material and Methods: Data for 150 consecutive women undergoing surgery for primary breast cancer were input into both models. Patients treated with neoadjuvant hormone therapy or chemotherapy were excluded. The predicted 10 year survival benefit of adjuvant chemotherapy (above hormone therapy) was determined. The results were categorised into <3% benefit - no chemotherapy, 3-5% - to discuss chemotherapy and ≥ 5% benefit - recommend chemotherapy.

Results: The median age was 62 years (range 34-92) and 43% presented symptomatically. The number of patients in each category is shown in Table 1.

Table 1

10yr Survival Benefit	Adjuvant n = (%)	PREDICTn = (%)
< 3%	87 (58)	93 (62)
3-5%	18 (12)	17 (11)
≥5%	45 (30)	40 (27)

In 28 patients (19%) there were discordant results between the 2 models. In 17/28 PREDICT upgraded the chemotherapy decision, whilst it downgraded in 11/28. The change in predicted survival benefit category was unrelated to HER-2 status or method of presentation.

Conclusion: Using PREDICT would alter our unit's chemotherapy recommendation in 19% of patients. We plan to use both systems in parallel to evaluate further in the clinical setting.

P73. Reducing abdominal complications from breast reconstruction using DIEP flaps

Rachel Tillet, Sherif Wilson

Plastic Surgery Dept, Frenchay Hospital, Bristol, UK

Introduction: Abdominal wound complications can be a significant cause of postoperative morbidity for patients and surgeons. A retrospective review of 61 patients, undergoing DIEP breast reconstruction over a 26 month period, by a single surgeon, showed delayed wound healing requiring conservative treatment in 16 (26.2%) and operative treatment in 4 (6.6%) patients. 3 patients (4.9%) developed a seroma and 4 patients (6.6%) developed an abdominal bulge (6.6%). These results have been compared to a large meta-analysis of 1997 patients undergoing abdominal flap breast reconstruction (Salgarello et al, 2011). It was suspected that the large numbers of patients with delayed wound healing requiring conservative treatment may have developed as a result of junior members of the team closing the abdomen.

Methods: A new formalised regime of abdominal closure involving 3 layers of monocryl to close the skin and subcutaneous tissues, with either the senior author supervising a senior trainee or performing the procedure himself, was instituted. Data was collected retrospectively on subsequent consecutive patients undergoing DIEP reconstruction.

Results: In a subsequent 21 patients there were no delays in wound healing and no seromas. The 26.2% reduction in complications for wounds requiring conservative treatment was statistically significant (p=0.001, Fisher's exact test).

Conclusion: This completed audit loop has shown a reduction in abdominal wound complication rates after a change in practice of wound closure. Our rates of delayed healing prior to the change in practice were comparable, and are currently better than, those in the published literature for delayed healing requiring surgical intervention.

P74. Impact of prior Sentinel Lymph Node Biopsy (SLNB) on the timing of reconstruction in breast cancer patients undergoing mastectomy

Raman Vinayagam, Simon Pilgrim, Naresh Rughooputh, David Thurtle, Sally Owen, Simon Pain

Norfolk and Norwich University Hospital, Norfolk, UK

Introduction: Availability of SLNB pathology result beforehand helps to avoid further axillary surgery post-reconstruction and also potentially avoids the risk of radiotherapy to the reconstructed breast in the high-risk patients. The purpose of the study was to review the results of the patients who underwent SLNB prior to mastectomy (Mx) and reconstruction.

Methods: All patients who underwent SLNB prior to planned mastectomy and reconstruction for breast cancer were collected from a prospectively maintained database over a five year period (2005-2010). Sentinel node status, tumour type, timing of reconstruction and types of reconstruction were analysed.

Results: A total 103 patients were included in the study with the median age of 51 (26-73) years. Tumour types included DCIS (39), invasive ductal carcinoma (48), invasive lobular carcinoma (10) and special tumour types (6). Average sentinel node harvest was 1.8. The sentinel nodes were positive for metastasis in 18 cases (15 macrometastases; 3 micrometastases) and negative in 85 cases (including one patient with isolated tumour cells). Axillary node clearance (ANC) was carried out in 19 cases; 4 of them had further positive nodes. 10 patients had mastectomy and axillary clearance followed by delayed reconstruction after adjuvant therapy, 9 patients had Mx+ANC+immediate reconstruction and 84 patients had Mx+immediate reconstruction. 55 (53.4%) patients had free flaps, 44

(42.7%) had implants and 4 (3.9%) had latissimus dorsi flap reconstruction. The median interval between SLNB and immediate reconstruction was 31 (10-94) days.

Conclusions: Availability of SLNB beforehand helps to plan breast reconstruction after mastectomy without compromising oncological principles.

P75. A comparison of imprint cytology in axillary sentinel lymph node biopsy in infiltrating ductal and infiltrating lobular breast cancer

Duncan Simpson, Adam Tucker, David Hunter, Michael Whiteside, Stephen Dace

Antrim Area Hospital, Antrim, UK

Introduction: Sentinel lymph node biopsy (SLNB) is an established technique to avoid the morbidity associated with axillary node clearance. Imprint cytology (IC) is used for intra-operative reporting of the presence of nodal metastases in our centre. This study compared the sensitivity and specificity of IC in infiltrating ductal (IDC) and infiltrating lobular (ILC) carcinoma of the breast.

Methods: All patients undergoing SLNB for breast cancer with clinically negative nodes were included. Sentinel nodes were identified using a combination of technetium radioisotope and Patent Blue dye. The identified nodes were sectioned and the imprints reported intra-operatively. Definitive histopathology results were determined using haematoxylin and eosin staining and immunohistochemistry. A retrospective evaluation of the IC and histopathology results was undertaken. Sensitivity and specificity of IC was recorded for each primary tumour type. Isolated tumour cells were regarded as negative for nodal metastasis.

Results: Of 511 SLNBs in 505 patients, 381 had an IDC primary and 71 had an ILC primary.

100 of 381 patients with IDC had nodal metastases. Sensitivity of IC in these patients was 67% and specificity was 99.6%. 10 of 71 patients with ILC had nodal metastases. Sensitivity in this group was 20% and specificity was 100%. IC was significantly more sensitive in detecting nodal metastases in IDC than in ILC ($p = 0.0053$ Fisher's exact test).

Conclusions: IC is less useful in lobular primaries. This may be due to relative rarity, low-grade morphology and invasion pattern. Patients with lobular primaries should be counselled about increased risk of further axillary surgery after SLNB.

P76. Does surgeon preference affect mastectomy rates independently of tumour biology?

Caroline Emma Richardson¹, Shan Cheung², Olive Kearins², Paul Stonelake³

¹ Worcester Royal Hospital, Worcester, UK

² West Midlands Cancer Intelligence Unit, Birmingham, UK

³ The Dudley Group of Hospitals NHS Foundation Trust, Dudley, UK

Introduction: Mastectomy rate has been suggested as a quality assurance measure in the management of women with breast cancer. Wide variation in rates is often attributed to patient choice; few studies have attempted to assess the preference of the surgeon. This study aims to assess whether surgeon preference influences mastectomy rates in a large patient cohort.

Methods: 13,500 breast cancer cases (3,850 screening; 9,650 symptomatic) managed by 40 surgeons and diagnosed in the West Midlands between 01/01/2004-31/12/2006 were included in a retrospective review. Patient demographics, tumour biology, and choice of surgical treatment were examined.

Results: To examine surgeon preference, surgeons were grouped into low, medium & high by their screen-detected mastectomy rates. This grouping was then tested in the symptomatic group using logistic regression models including age, tumour characteristics and surgeon group. Surgeon group was a significant factor in mastectomy rates (chi-square = 260.27, p -value < 0.0001) though whole tumour size had the largest effect

(chi-square = 1580.46, p -value < 0.0001). There was a significant association between screening and symptomatic mastectomy rates for individual surgeons. Mastectomy was performed more often by the high mastectomy group surgeons for all whole tumour size groups. Even when the tumour is small (<15mm) and treated by a low mastectomy surgeon, 7% had a mastectomy, therefore, indicating the baseline possibly attributable to patient choice.

Conclusions: Surgeon preference appears to affect surgical treatment regardless of patient age, tumour biology and presentation route.

P77. Evidence for wide variation in breast conserving surgery (BCS) technique in women with screen-detected breast cancer: Specimen weight correlates poorly with tumour size

Caroline Emma Richardson¹, Emma O'Sullivan², Diana Boateng², Olive Kearins², Paul Stonelake³

¹ Worcester Royal Hospital, Worcester, UK

² West Midlands Cancer Intelligence Unit, Birmingham, UK

³ The Dudley Group of Hospitals NHS Foundation Trust, Dudley, UK

Introduction: The majority of women with breast cancer are managed by BCS. Surgeons must balance the need to obtain adequate margins with achieving good cosmesis. While excision margins are audited there are no current measures for quality assurance of cosmetic outcome. The aim of this study was to investigate the correlation between whole tumour size and specimen weight (observed and expected) in a screening population.

Methods: Women undergoing BCS in the West Midlands region between 01/04/2006 – 31/03/2009 were identified. Data were collected from the National Breast Screening Computer System (specimen weight) and NHSBSP audit (procedures).

Results: 2,879 women were operated on by 50 surgeons (8 surgeons were excluded as having <10 cases per year); 83% (2,377/2,879) had invasive disease. Overall re-excision rates averaged 20%, but were more common in the presence of non-invasive disease. Average specimen weight for invasive disease was 79.4g (range 59.6 - 107.5g); patients requiring re-excision had lower initial operation specimen weights (68.0g vs 79.4g). Specimen weight correlated with tumour size but there was wide variation. The median ratio of observed specimen weight to expected, calculated for a 1cm margin, varied from 0.8:1 to 5.0:1 for these 42 surgeons. No data were available on cosmetic outcome.

Conclusions: These data suggest wide variations in BCS technique. Further work is required to assess if ratio of observed to expected specimen weight/can be used as a surrogate marker for cosmetic outcome.

P78. Implementation of One Step Nucleic acid Amplification (OSNA) for Intra-operative assessment of sentinel lymph nodes in a DGH

Mohd Iqbal, Ali Jibrán Mecci, Lisa Whisker, Michael Parkes, Adrian Smith, Farah Sandhu, Simon Harries, Dayalan Clarke, Lucie Jones

Warwick Hospital, West Midlands, UK

Background: Intra-operative assessment of the sentinel lymph node (SLN) saves a second operation for women with axillary metastatic disease. The techniques used for intra-operative assessment of the SLN include frozen section, touch imprint cytology (TIC) and more recently molecular biology assays. We have recently introduced molecular assay (OSNA) for the intra-operative assessment of the sentinel node in our institution. The aim of this study was to audit our early results with OSNA.

Methods: A prospective database was maintained of all patients having their SLN assessed by OSNA, to include time taken for processing, number of nodes harvested, and the final results.

Results: 63 patients had 99 SLNs harvested (Mean - 1.57) over a period of 6 months from July to December 2011. The SLN was positive in 21 patients (33%) on OSNA and hence went on to have an immediate axillary clearance. 13 of these had macro-metastasis and 8 had micro-metastasis. Mean time taken for SLN analysis was 49.7 minutes (range 37-94).

Conclusion: Intra-operative assessment of the SNL by OSNA saved a second operation for 33% of patients in our series. The increased costs involved with the assay are offset by a revised HRG tariff that has been negotiated with the PCT and savings made by a second admission and second operation. Most importantly, node positive patients can start their adjuvant treatment much sooner by avoiding the wait for a second operation.

P79. Cosmetic outcome one, two, three and four years after intra-operative radiotherapy compared with external beam radiotherapy: An objective assessment of patients from a randomised controlled trial
Mohammed Keshtgar¹, Norman Williams¹, Tammy Corica², Christobel Saunders², Max Bulsara³, David Joseph²

¹Royal Free and UCL Medical School, London, UK

²Sir Charles Gairdner Hospital, Perth, Australia

³University of Notre Dame, Fremantle, Australia

Introduction: The randomised controlled TARGIT Trial was designed to determine non-inferiority between the novel technique of TARGIT [intra-operative radiotherapy with Intrabeam® (Carl Zeiss, Germany)] and conventional external beam radiotherapy (EBRT) in women with early breast cancer. We report here data from a sub-protocol assessing cosmesis in women participating in the TARGIT Trial from one centre (Perth, Australia).

Methods: Ethics committee approval was obtained. Frontal digital photographs were assessed, blind to treatment, using specialist software (BCCT.core 2.0, INESC Porto, Portugal). Statistical analysis was by generalised estimating equations (GEE) on all of the data, and logistic regression analysis at year 1.

Results: 114 patients have been assessed, median age at randomisation 62 years (IQR 56 to 68). Photographs were taken at baseline (before surgery) and one, two, three and four years after initial breast conserving surgery; none had subsequent breast surgery. The scores were dichotomised into Excellent and Good (EG), and Fair and Poor (FP). There was a non-significant 45% increase in the odds of having an outcome of EG for patients in the TARGIT group relative to the EBRT group (OR=1.45, 95%CI 0.78 – 2.69, p=0.245) after adjusting for tumour size. For year 1 only there was a statistically significant 2.35 fold increase in the odds of having an outcome of EG for patients in the TARGIT group (OR=2.35, 95%CI 1.02 – 5.45, p=0.047) after adjusting for age, tumour size and grade.

Conclusion: These results confirm a significantly better cosmetic outcome with TARGIT compared to EBRT in the first year after surgery.

P80. Can the Memorial Sloan Kettering (MSK) nomogram be used to improve theatre planning when undertaking intra-operative assessment of sentinel lymph nodes (SLN)?

Lisa Whisker, Ali Jibrán Mecci, Donna Stanton, Catriona Kneeland, Mohd Iqbal, Dayalan Clarke

Warwick Hospital, South Warwickshire Foundation Trust, Warwick, UK

Introduction: Intra-operative assessment of SLN has advantages for patients (reduced requirements for a second operation), but causes logistical difficulties planning theatre lists. In our trust intra-operative assessment does not add a significant time to procedures in itself but the addition of axillary node clearance (ANC) adds an average 30 minutes to a case. We aim to investigate whether pre-op prediction of SLN involvement using the MSK nomogram could allow more accurate theatre planning.

Methods: Predicted involvement of the SLN was calculated for all patients undergoing intra-operative assessment with OSNA using the MSK nomogram. Accuracy of prediction of requirement for an ANC was confirmed.

Results: 46 cases were included in our series of women undergoing intra-operative assessment for invasive cancer. A risk of >50% probability of involved sentinel nodes would have correctly predicted the need for ANC in 35/46 (76%) of patients with macrometastatic disease. The correct

prediction was reduced to only 28/46 (61%) if patients with micrometastatic disease were included as these patients were not predicted to have positive nodal disease. The PPV of MSK (>50%) is 60% in our series.

Conclusions: Using the MSK nomogram would have correctly predicted the need for ANC in most patients (although the PPV for micrometastatic disease was 0) and has the potential to be utilised in theatre planning. This requires further prospective validation in a larger series.

P81. Same day discharge after mastectomy and axillary clearance?

Veronika Pronisceva, Catherine Onuorah, Elizabeth Sharp

QEQM Hospital, East Kent NHS Trust, Margate, Kent, UK

Introduction: This study set to evaluate the feasibility of same day discharge for patients undergoing elective mastectomy and/or axillary clearance. Same day discharge for WLE and SLNB is well recognised, but less so for patients undergoing mastectomy and / or axillary clearance in a DGH serving a population of 130,000.

Standard: Traditionally our mastectomy patients stayed between two and five days, we set out to significantly reduce this length of stay and thus reduce costs.

Methods: Protocols were developed and disseminated via the Breast MDT, over a two year period for enhanced breast recovery project. Retrospective data was collected (3/2011-8/2011) from patients' notes to assess Breast Units' performance.

Results:

- At diagnosis suitable patients were identified for short stay management.
- Anaesthetic and surgical technique modified.
- Protocols were written for the Breast Care Nurses, Ward Nurses and District Nurses.
- An "electronic discharge summary" is initiated on admission.
- Written information given to patients if problems encountered

58(56%) from 103 patients were discharged on the same day of the surgery (within 12 hours).

Type of surgery	12h admission	24h admission	>24h admission
Mastectomy +/- Ax cl	8	10	1
Axillary clearance	5	10	3
Slmb +/- WLE	30	9	1
Breast conservation	16	7	0

Conclusion:

- A 12hr admission and discharge is feasible for the majority of breast patients including mastectomy and or axillary clearance.
- Risk stratification at diagnosis and pre-assessment make enhanced recovery possible and reproducible.

P82. Resource Implications of Risk Reducing Mastectomy and Reconstruction

Christina Summerhayes, Katrina Hirst, Diana Asante, Nirmala Paramanathan, Siobhan Laws, Richard Rainsbury

Royal Hampshire County Hospital, Winchester, UK

Introduction: The aim of the study was to investigate the impact of performing risk-reducing mastectomy (RRM) and reconstruction (BR), in the context of rising demand, increasing availability and evidence of benefit.

Methods: Fifty patients undergoing bilateral mastectomy and BR between 1991-2011 (70 RRM, 76 immediate BR) were identified from hospital records. Indications, patient and operative details, complications and secondary procedures were recorded, and overall treatment costs were calculated.

Results: A steady rise in demand for RRM/BR was observed, with >50% of procedures >2006 (78% <50yr, 44% BRCA1/2). Skin-sparing RRM was performed in 76%, BR was carried out using Latissimus Dorsi (LD) or Subpectoral (SP) procedures (LD 70% versus SP 30%). LD took longer (LD 6.5[5.0-9.0]hr versus SP 3.0[1.5-6.1]hr), but length of stay was similar (LD 7 days versus SP 6 days), with significant complications in 18% of patients (9% per reconstruction). Subsequent revision was required in 52% (LD 51% versus SP 53%, median follow-up 56[4-215] months), including implant exchange, capsulotomy or capsulectomy (LD 46, 51% versus SP 47, 53%)

Treatment cost for 50 patients

Outpatients	Theatre time	Inpatient	Implants
£71173	£338000	£11074	£97600
Pathology	Transfusion	Return to theatre	Secondary procedures
£8575	£912	£12493	£132561

Total cost per patient = £13,500

Conclusions: Risk-reducing surgery is costly and time consuming, but safe. Rising demand has significant resource implications for the NHS.

P83. Intensive Preoperative Assessment of the Axilla can reduce the Positive Sentinel Lymph Node (SLN) Rate

Alex Jaffe, Juan McDonnell, Vips Patel, Victor Jaffe
Chase Breast Unit, Enfield, UK

Introduction: The need for re-operation after an unexpected positive SLN is costly for both patient and the Health Service. In an attempt to reduce the number of these unexpected positive SLNs, we adopted an aggressive approach to preoperatively assess the axilla.

Method: From January 2009 all invasive breast cancers had careful clinical examination of the axilla followed by ultrasound scanning. A 14mHz linear probe was used to assess the morphology, vascularity and cortical thickness of any lymph nodes seen. A low threshold for guided core biopsy was adopted (especially for nodes with a cortical thickness of greater than 2mm).

Results: 436 consecutive axillary assessments (431 Patients) were audited. 85 had abnormal scans and positive biopsies and had a definitive axillary clearance. A further 52 scans were abnormal but biopsy was negative. On repeat biopsy 6 were positive and had a clearance. 345 assessments were normal and had SLN biopsy. 44 were unexpectedly found to have positive nodes, 38 of whom were advised to have a clearance. 7 of these 38 needed wider excision and therefore, only 31 required a second procedure exclusively for clearance.

Conclusion: With intensive preoperative assessment, in 436 consecutive axillae there were only 44 unexpected positive SLNs, and only 31 (7%) required a second procedure exclusively for the axilla. This raises the question as to whether intraoperative sentinel node assessment techniques are necessary particularly when recent evidence is suggesting that not all patients with positive sentinel nodes need a full axillary clearance.

P84. Invasive lobular breast cancer - No increased risk of contralateral disease

Fiona Langlands¹, David Dodwell², Jonathan White¹, Olive Kearins³, Shaun Cheung³, Ruth Burns⁴, Kieran Horgan¹

¹ Leeds General Infirmary, Leeds, West Yorkshire, UK
² Institute Of Oncology, St James University Hospital, Leeds, West Yorkshire, UK

³ West Midlands Cancer Intelligence Unit, West Midlands, UK
⁴ Northern And Yorkshire Cancer Registry And Information Service, Leeds, UK

Introduction: Invasive lobular carcinoma (ILC) is the second most common breast cancer accounting for up to 14% of invasive breast cancers. The incidence of ILC has increased from 1977 to 1995 in contrast to invasive ductal carcinoma (IDC) whose rates have remained fairly constant since 1987. Historically ILC is thought to be associated with an increased risk of developing contralateral breast cancer (CBC) and this belief may, in part, be responsible for the increasing trend towards contralateral prophylactic mastectomy.

Methods: All patients diagnosed with invasive breast cancer during the time period 1998-2003 were identified from two large cancer registries, Northern and Yorkshire Cancer Registry and Information Service (NYCRIS) and West Midlands Cancer Intelligence Unit (WMCIU). All females diagnosed with either IDC or ILC were included. Follow-up was complete until October 2010 (NYCRIS) and December 2010 (WMCIU). Data on age, histological subtype (of primary and subsequent contralateral disease), tumour grade and use of adjuvant therapy were collected.

Results: Of the 38,132 patients included in the study, 898 (2.74%) of the 32,735 patients with IDC developed a CBC, by comparison to 166 (3.1%) of the 5397 patients with ILC. The median time to first contralateral event was equivalent for both morphologies (ductal 40 months and lobular 39 months).

Conclusion: Contralateral breast cancer is uncommon annual risk ~0.3%. There is no significant difference in incidence of CBC according to original histological subtype. Therefore this study suggests that there is no increased risk for developing a CBC in patients diagnosed with an ILC.

P85. Making Good Decisions in Collaboration with Patients with Breast Cancer: The role of Decision Quality Measures and in-consultation decision support tools

Helen Mcgarrigle², Amy Lloyd¹, Natalie Joseph-Williams¹, Glyn Elwyn¹

¹ Cardiff University, Cardiff, UK
² Cardiff and Vale University Health Board, Cardiff, UK

Introduction: Cardiff and Vale Breast Care Team aims to inform and involve patients in decisions about their care and treatment. In order to assess this aim, a Decision Quality Measure (DQM) was introduced to check patients' knowledge of the key features and differences between treatment options, their readiness to decide and their preferred choice of treatment.

Methods: The Breast Care Team worked in collaboration with a programme called Making Good decisions In Collaboration (MAGIC) to develop a DQM. Patients eligible for either mastectomy or lumpectomy with radiotherapy were asked to complete DQMs at two points in the clinical care pathway: The end of the diagnostic consultation (DQM1), and the end of the home visit (DQM2).

Results: Between February-December 2011, 79% (n=69) of eligible patients completed DQM1 and 80% (n=55) of eligible patients completed DQM2. Data from each patients' DQM1 was used to tailor the home visit to their specific needs. Comparison of data from DQM1 and DQM2 shows considerable improvement in patients' knowledge, readiness to decide, and confidence in choice of treatment. There was also considerable improvement in patients' knowledge after a brief in-consultation decision support tool (called an Option Grid) was introduced into routine practice.

Conclusion: DQMs provide data to help the Breast Care Team to monitor and assess the quality of their patients' decisions. In-consultation decision support tools can help patients to understand the key features and differences between treatment options. DQMs also provide real time data to help Breast Care Nurses to tailor support for patients making difficult decisions.

P86. CT-SPECT and pre-operative sentinel lymph node mapping in breast cancer

Abigail Tomlins, Soni Soumian, Mike Hallissey, David England,
Sally Bradley

Queen Elizabeth Hospital Birmingham, West Midlands, UK

Introduction: Pre-operative lymphoscintigraphy (LS) is widely used for mapping prior to sentinel lymph node biopsy (SLNB) in breast cancer. Combined CT/ single-photon emission computed CT (CT-SPECT), has been reported as superior, by improving visualisation and anatomical localisation. Previous studies have investigated use of CT-SPECT in selected groups, or after failed LS. In June 2010 pre-operative CT-SPECT replaced LS in our institution. This study assesses routine, unselected use of CT-SPECT prior to SLNB, and compares it to LS.

Methods: Prospectively collected data from 251 consecutive SLNBs performed between October 2009 and March 2011 was retrospectively analysed. Sentinel node detection rate, axillary positivity for malignancy, and number of patients with additional pathology detected on SPECT-CT were analysed.

Results: Of 251 SLNBs, 108 had pre-operative LS and 143 had CT-SPECT. Only 1(0.93%) LS case had no axillary uptake, compared with 9(3.47%) in the CT-SPECT group. A mean of 1.8 and 1.5 nodes were detected using LS and CT-SPECT respectively. 2.1 nodes per case were removed in both groups. SLNB was positive for malignancy in 23(21.3%) and 41(28.7%) in the LS and CT-SPECT groups respectively (not statistically significant, $p=0.184$). In the CT-SPECT group 20 patients (14%) had additional pathology detected. The majority required further imaging, but no confirmed metastatic disease or other serious pathology has been detected.

Conclusion: This study suggests use of CT-SPECT for pre-operative sentinel node mapping in breast cancer has no advantage over LS. It has no impact on number of lymph nodes identified or harvested but has led to an increased detection of other, often unrelated pathology.

P87. Activity analysis and outcomes of a breast multidisciplinary meeting: A 4-year perspective in a district general hospital

Debashish Debnath, Lorna Cook, Isabella Karat, Raouf Daoud,
Ian Laidlaw

Frimley Park Hospital, Frimley, UK

Introduction: Efficacy of multidisciplinary meetings (MDM) can be variable. We aimed to analyse the activity of the breast MDM in a district general hospital in the UK.

Methods: Activity of MDM and patient outcomes were analysed between August 2007 and July 2011. Data were obtained from Somerset Cancer Register Database.

Results: A total of 6259 patients, including 400 males, were discussed. Nature of referrals varied from routine (155) and urgent (127) to 2-weeks rule (5977). Final diagnoses were classed as- non-cancerous (5651), primary breast cancer (565), local recurrence (26) and metastases (17). Fax was the commonest means of referral (5304). Mean age of patients was 46.7 ± 15.9 years. There was no significant age difference between male (45.7 ± 20.2 years) and female (46.7 ± 15.5 years) patients [$p=0.20$]. However, cancerous conditions were associated with significantly older age (63.3 ± 16.2 years), than non-cancerous conditions (44.9 ± 14.8 years) [$p < 0.001$]. Diagnosis of cancer was associated less frequently with urgent and 2-weeks referrals ($n=531$, 8.6% of 6104), than routine referrals ($n=77$, 49.6% of 155) [$p < 0.01$]. Ten out of sixteen core members (62.5%) maintained more than 66% ($74.3\% \pm 28.4$) attendance rate. Number of patients discussed steadily increased over four years from 744, 966, 1963 to 2583, respectively [$R^2=0.95$]. This sometimes necessitated continuing discussion beyond the designated time schedule.

Conclusions: Breast MDM serves an essential role and is facing a steep rise in the workload. The increased work load may have a negative effect on the efficiency of the MDM. Low association between urgent referrals and detection rate of breast cancer merits further review.

P88. Correlation of needle core biopsy with excision histology in screen-detected B3 lesions: The North London Breast Screening Unit experience

Myra Gilligan, Sonal Arora, Muhammed Al-Dubaisi

Barnet & Chase Farm Hospital, London, UK

Introduction: Despite breast needle core biopsy (NCB) being an established diagnostic procedure for screen-detected lesions, it can result in the borderline diagnosis of 'uncertain malignant potential' (B3), leading to potentially many benign open biopsies. This study aimed to evaluate rate, histological spectrum and subsequent incidence of malignancy in B3 cases in a population-based screening programme.

Methods: 104,285 consecutive patients who attended the North London Breast Screening Unit in London between 2009 and 2011 were reviewed to identify those with a B3-NCB. These reports were reviewed and correlated with excision histology.

Results: 1,947 out of 104,285 patients received a NCB. Of these, 100 were identified as having a B3 lesion giving a rate of 5%. This is in compliance with acceptable rates recommended by NHS Breast Screening-Programme (5-9%). Of the B3 lesions, Lobular neoplasia was the most prolific histological type (27%). Of these, 66% ($n=18$) represented lobular carcinoma-in-situ (LCIS), 15% ($n=4$) were atypical lobular hyperplasia (ALH) and 19% ($n=5$) undefined. Atypical Ductal Hyperplasia (ADH) represented 24% of B3 lesions-of which 42% ($n=10$) were histological mixed lesions. 22% of B3 lesions were papillary lesions, 22% were atypical columnar cell change, 5% were Phyllodes tumours. 19 cases (19%) of the B3 lesions were malignant on final excision histology. Lesion specific Positive Predictive Values were: Lobular neoplasia 19% (with higher PPV if ALH histology), ADH 25%; papillary lesions 18% and atypical columnar cell change 18%.

Conclusions: Approximately one-fifth of B3 screen-detected lesions were malignant upon surgical excision, with the PPV for malignancy varying according to histological subtype.

P89. Prospective evaluation of the use of hydrodissection without adrenaline to facilitate skin sparing mastectomy (SSM) and immediate breast reconstruction (IBR)

Joyce Muhschlegel, Richard Sutton, Anna-Louise Dennis

Royal United Hospital, Bath, UK

Introduction: Skin sparing mastectomy (SSM) with immediate breast reconstruction (IBR) is oncologically safe and associated with improved cosmetic outcomes. Injection of tumescent solution (hydrodissection) within the subcutaneous space facilitates preservation of the skin envelope. However, increased rates of flap necrosis are reported, possibly related to the vasoconstrictive effects of adrenaline in the tumescent solution. This prospective study evaluated the incidence of complications and local recurrence following SSM in our unit associated with the use of an alternative tumescent solution (saline and bupivacaine without adrenaline).

Methods: Prospective study for all patients who underwent SSM and IBR using low pressure hydrodissection (saline and 0.5% bupivacaine) and minimal electrocautery between August 2003 and November 2011. The incidence of local recurrence and complications associated with this procedure was evaluated and correlated against smoking status, adjuvant therapy and tumour characteristics.

Results: 177 patients underwent a total of 209 SSMs. Complication rate associated with SSM was 8%, with 3 cases of flap necrosis. All cases of flap necrosis were associated with radiotherapy; 2/3 were smokers. Local recurrence rate: 4.3%. There was a significantly higher rate of recurrence in those undergoing completion surgery ($p=0.023$) and those who had previous neoadjuvant chemotherapy ($p=0.048$). 3 patients who developed recurrence failed to comply with hormone therapy.

Conclusions: Hydrodissection without adrenaline is an acceptable method of dissection for SSM and does not appear to be associated with an increased risk of flap necrosis, delayed wound healing, nor does it compromise oncological treatment.

P90. Impact of Full Field Digital mammography (FFDM) on surgical management of mammographic microcalcification (MM) in a Screening Unit

Sara Bundred, Jin Zhou, Emma Hurley, Mary Wilson, Nigel Bundred
University Hospital South Manchester, Manchester, UK

Introduction: Accurate preoperative diagnosis of impalpable breast lesions correlates closely with the number of surgical procedures required for treatment. Correct diagnosis of MM as DCIS or invasive cancer is important because lesions upgraded to malignant diagnosis at surgery require repeat surgical procedures in 44% of cases (ABS Audit 2011).

Methods: Screening and symptomatic women with MM (n=1125) were reviewed to determine the impact of FFDM (FFDM only since April 2010) on diagnostic accuracy, positive predictive value (PPV) and surgical management of MM. Demographic information; pre and post operative diagnosis and number of surgical procedures were recorded for Group 1(8/2007 to 3/2010: n=710) and Group 2 (4/2010 to 5/2011: n=415).

Results: Overall 299 (106 invasive) and 144 (62 invasive) malignant lesions were diagnosed in group 1 and 2 respectively. Reduction in PPV of biopsy for MM was observed (Group 1 PPV 42.1%: Group 2 PPV 34.7% (p<0.02)). Upgrade of B3/4 lesions reduced (Group 1 56% (22/39) vs. Group 2 26% (6/23); p<0.025) and pre-operative diagnosis of DCIS improved (88.6% Group 1vs. 94% Group 2) using digital mammography. An increase in DCIS lesions upgraded to invasion at operation (20.4% Group 1vs. 24% Group 2) was noted (p=NS). Correct histological pre-operative diagnosis permitted a single therapeutic operation for 78%, compared to 66% of MM where pre-operative diagnosis was inaccurate (p<0.001).

Conclusions: Correct pre-operative diagnosis of MM using digital mammography has reduced second therapeutic procedures for MM, decreased upgrade of B3/4 lesions at diagnostic surgery, but increased benign non-operative biopsies for MM.

P91. The Z11 Completion Axillary Clearance (cANC) Study Arm: Are tumour characteristics and node positivity rates comparable to a UK breast unit?

P. Mallon, C. Gilliland, M. Whiteside, I. Garstin, S. Dace
Department of General Surgery, Antrim Area Hospital, Northern Ireland, UK

Introduction: Current practice in the UK recommends cANC for SLNB positive disease. The Z11 trial suggested cANC is unnecessary in T1/2 tumours with 1-2 sentinel node positivity. There is debate whether this management should be applied in the UK. The aim of this study was to determine whether cANC positivity rate, patient demographics and tumour type in the cANC arm of the Z11 trial is comparable to our unit.

Methods: All patients who underwent SLNB and ANC from May 2007 - November 2011 had their pathology report reviewed. Inclusion criteria were patients with T1 or T2 invasive breast cancer receiving breast conserving surgery (BCS) and ANC following 1-2 positive sentinel nodes.

Results: We retrieved 60 patient records for analysis, results are summarised below:

	UK Unit (%)	Z11 (%)
Group size	60	388
Median age	60	56
Invasive Ductal	55 (91.7)	317 (82.1)
Invasive lobular	3 (5)	25 (6.5)
Axillary nodes median	16	17
cANC disease positive	20 (33)	72 (21)
T1	45 (75)	259 (67)
T2	15 (25)	127 (33)

Conclusions: There was a higher incidence of further nodal disease in our unit compared to the Z11 data with a trend towards higher proportion of T1 invasive ductal type tumours. There was no significant difference between groups regarding median node retrieval and patient age. We recognize there are significant differences in sample size between units. Longer follow up is required and comparison with other trials such as IBCSG 23-01 is needed to determine whether change in UK practice is recommended.

P92. Breast pain under the age of 50: Is mammography really necessary?

Rhiannon Foulkes, Rebecca Thomas, Sunirmal Ghosh
Nevill Hall Hospital, Abergavenny, UK

Aim: In most centres, women aged over 35 years who present to clinic with breast pain undergo routine mammography. The aim of this study was to assess whether routine mammography in patients presenting with painful breasts and no palpable mass is necessary in those under the age of 50 years.

Methods: All patients attending breast clinic between 1st January 2008 and 31st December 2010 with breast pain only, undergoing mammography, were assessed. Patients were then divided into the under 50 and over 50 age group for comparison.

Results: Of a total of 315 patients assessed, 168 (53%) patients were under 50 years old (mean age 43 years). All had clinically normal breasts on examination. Six (3.5%) patients had indeterminate mammographic abnormalities in the under 50 years age group, versus eight (5%) in those over 50 years. All had benign findings following further investigation. One (0.6%) patient in the under 50 years age group had a malignant mammographic abnormality - this was in a 48 year old lady and was found on the asymptomatic side. In those patients over 50 years, three (2%) had malignant abnormalities on mammography, of which two were confirmed malignancies.

Conclusions: Malignancy is rare in patients under the age of 50 years who present with pain as their only symptom. In the setting of a normal clinical examination, routine mammography is not necessary, and may lead to further unnecessary investigations and anxiety.

P93. Sentinel Lymph Node Biopsy (SLNB) ‘really is’ the standard of care across the UK

Aasma Al-Allak, Francesco Egro, Ahmed Gawad, Nathan Coombs, Marcus Galea
Great Western Hospital, Swindon, UK

Introduction: In the UK the introduction of SLNB in women with clinical and Ultrasound normal axillae was rolled out with a standardized approach defined by the NEW START program. Our aim was to assess availability and uniformity of practice within breast units and across deaneries and cancer networks.

Methods: A 23 question online Web survey was formulated and distributed to members of the ABS. The questionnaire covered: Deanery and cancer network, number of breast cancer cases seen in a year, availability of SLNB and protocols for screening/symptomatic patients, type of pre-operative assessment of the axilla, SLNB techniques used and finally management of the axilla following SLNB.

Results: 110 completed surveys were returned. Only 3 of the 35 cancer networks were not represented in the replies.99% of the units performed SLNB with an annual caseload between 200 and 500 patients. 99% of units practiced to a common protocol. Preoperative assessment of the axilla varied from clinical examination only (1%) to ultrasound with core biopsy (65%). 94% of units used a dual technique (blue dye and isotope) for localization with some variation in the site of injection and whom it was done by. 18% of units used intra-operative assessment. Following SLNB results, differences in the post operative management of isolated tumour cells and micrometastases were evident.

Conclusions: This survey demonstrates that across the UK breast units have succeeded in offering patients optimal and consistent treatment of the axilla. The variation that exists is a reflection of what largely remain topics for which there is as yet no consensus, namely the management of the positive SLNB with micrometastases and isolated tumour cells.

P94. Are We Overtreating the Axilla?

Laura Clarke, Kevin Clark, Mujahid Pervaz, Loyal El Asir
Queen Elizabeth Hospital, Gateshead, UK

Introduction: NICE guidance on management of early and locally advanced breast cancer requires that all patients found to have positive axillary lymph nodes at sentinel lymph node biopsy (SLNB) should be offered further axillary treatment. Currently axillary lymph node clearance (ALNC) is the first line treatment with radiotherapy to the axilla considered as first line only if ALNC is not possible. This surgery has considerable morbidity associated. We aimed to assess the yield of positive axillary nodes in women undergoing ALNC following a node positive SLNB. We also wished to determine what proportion of women underwent further surgery with no further gains in terms of excision of malignancy.

Methods: Pathology reports from all 228 patients undergoing SLNB at the Queen Elizabeth Hospital Gateshead between June 2010 and May 2011 were reviewed.

Results: On SNLB 32 patients were found to be node positive and of these 26 underwent ALNC. No further malignancy was found in 21 patients. Five patients yielded further positive nodes at ALNC. Of these a further single positive node was cleared in three patients and a further two positive nodes cleared in two cases. There was no change to adjuvant management as a result of ALNC.

Conclusions: Routinely offering ALNC to all patients found to be axillary node positive at SLNB resulted in relatively small gains in excised malignancy in this patient group. A high proportion of these women underwent surgery with its associated burden of morbidity with no further malignancy excised.

P95. Mastectomy without immediate breast reconstruction: Counselling and decision making analysis

Claire Cooper, S.C. Kate FitzGerald, Sheila Stallard
Western Infirmary, Glasgow, UK

Introduction: Current NICE guidelines suggest that possibility of breast reconstruction should be discussed with all patients prior to mastectomy. However, majority of patients are still treated with mastectomy only and reconstruction is not carried out. We investigated the rates of documentation of patient counselling and consequent decision making contributing to immediate reconstruction [IR] rate.

Methods: 57 consecutive patients' data, was prospectively collected in a single centre for those who underwent mastectomy without reconstruction, between July 2011 and December 2011. Consultations about IR and patients' acceptance of counselling were analysed in this audit.

Results: The patients mean age was 67.0 years and included 3 male breast cancers. In this group of patients undergoing mastectomy but no reconstruction, a discussion regarding reconstruction was documented in 26 (46%) of cases. 17 of these patients refused IR on consultation due to lack of interest, preference for a delayed procedure and not wanting to potentially delay adjuvant therapy. The remaining cases were advised against IR due to co-morbidities. Of the 31 patients who didn't have a discussion regarding IR documented reasons given by their consultant surgeon prospectively included male sex, comorbidities, advanced age and locally advanced cancer.

Conclusions: The number of patients undergoing mastectomy not fit or suitable for reconstruction is similar in this group of patients as in a previous cohort investigated. Although there is invariably a reason that a patient

is not suitable for reconstruction, documentation of any discussion or decision-making is still necessary.

P96. Sensation of the Reconstructed Breast Mound after Risk Reducing Mastectomies

Ayesha Khan, Jean Zhang, Viviana Sollazzo, Gerald Gui
Royal Marsden NHS Foundation Trust, London, UK

Introduction: Women with a genetic predisposition for breast cancer face difficult decisions when considering risk reducing mastectomies. A key factor affecting quality of life is recovery of breast sensation after surgery, and this is poorly studied in this subset of women who do not undergo radiotherapy. Our study determined sensory changes in this group both objectively using validated tools and subjectively using patient assessment questionnaires.

Method: 60 cases of risk reducing skin sparing mastectomies with reconstructions were randomly selected at least 1 year after surgery. Four quadrants of the skin envelope and nipple areolar complex, if present, were examined and the following assessed: touch sensation using Semmes-Weinstein monofilaments (validated aesthesiometer), thermal sensibility using temperature regulated water droplets and subjective sensibility of pain, tingling and pleasurable sensation with questionnaires.

Results: Mean time from surgery to assessment was 46 months. 22% of cases had normal sensation in all four quadrants and 17% in at least one quadrant. 5% had loss of protective sensation in all four quadrants. Hot and cold temperature discrimination was lost in 32% and 18% respectively. Of 13 nipple sparing mastectomies (NSMs), 46% had normal nipple and areolar pressure sensation. 46% of NSMs reported significant loss of pleasurable sensation compared to 65% of skin sparing mastectomies. Significant pain and tingling was found in 10% and 30% of cases respectively.

Conclusion: Risk reducing mastectomies lead to significant long term changes in breast sensation. Patients should be given detailed descriptions of these to help make an informed decision prior to surgery.

P97. Male breast cancer: Does detection rate justify assessing men in breast clinic?

John Moir, Keith Callanan

University Hospital of North Durham, Durham, UK

Introduction: Male breast cancer is a rare diagnosis, representing less than 1% of breast cancers. However, in comparison to females, fewer males are referred to breast clinics. By comparing the breast cancer diagnosis rate for males and females in a symptomatic clinic, this study aimed to determine whether assessing males in this setting is appropriate.

Methods: Data on the number of patients attending a symptomatic breast clinic was prospectively collected over a five year period from 2007 to 2011. Details of sex and breast cancer diagnoses were recorded.

Results: A total of 4004 patients attended breast assessment clinics. 187 (4.7%) were male compared with 3817 (95.3%) females. The proportion of male breast cancer was 1.3% (n=4), compared with 98.7% (n=299) female breast cancers. This represents breast clinic diagnosis rates of 2.1% for men and 7.8% for women.

Conclusions: Although this data suggests that the ratio of female: male breast cancer is in the order of 100:1, the ratio of breast cancers in those attending breast clinic is much closer at approximately 3.5:1 (7.8%:2.1%). This study suggests that breast clinic is indeed the appropriate setting to assess male patients.

P98. Patient Satisfaction: A Comparison of "L-shaped" and "CV-flap" Nipple Reconstruction

Victoria Whitby, Alex Colbi, M. Chandrashekar

The Royal Liverpool University Hospital, Liverpool, UK

Introduction: Nipple reconstruction is the final stage of breast reconstruction. Numerous techniques have been pioneered, with no clear

favourite. We have developed a novel “L-shaped” nipple reconstruction. We have compared patient satisfaction and complication rates using this technique against the traditional “CV-flap”.

Method: Patients who underwent nipple reconstruction between October 2003 and 2011 were contacted via telephone or postal questionnaire. The questionnaire evaluated patient satisfaction (likert scale) with overall cosmetic result, whether the nipple reconstruction matched the contra-lateral nipple; how confident people felt in clothing and complications.

Results: Of the 82 patients contacted, 71 (87%) completed the questionnaire and, of these, 65 (79%) had accessible operation notes. The “CV-flap” technique was used in 45 (69%) patients and the new “L-shaped” technique in 17 (26%) patients. Overall, 54 (83%) patients reported they were quite/very satisfied with the cosmetic result of their nipple reconstruction: 88% of the “L-shaped” group compared to 80% of the “CV-flap” group. Satisfaction with nipple similarity was recorded as quite/very satisfied in 71% of patients: 82% of the “L-shaped” group compared to 69% of the “CV-flap” group. Confidence in wearing clothing was rated at confident/very confident in 67% of patients overall: 73% of the “L-shaped” group and 65% of the “CV-flap” group. Reported complications included infection (18%) by patients with “L-shaped” reconstruction, and pain (2%), bleeding (2%) and discharge (2%) by those with “CV-flap” reconstruction.

Conclusion: The novel “L-shaped” nipple reconstruction has positive patient satisfaction outcomes and is a suitable alternative to the traditional “CV flap” nipple reconstruction.

P99. Accuracy of predictive models for non-sentinel lymph node metastases in breast cancer patients - retrospective study

Ioannis Michalakis¹, Louisa Dunk², Jaroslaw Krupa¹, Kelly Lambert¹

¹University Hospitals of Leicester NHS Trust, Glenfield Hospital, Dept of Breast Surgery, Leicester, UK

²University Hospitals of Leicester NHS Trust, Glenfield Hospital, Dept of Histopathology, Leicester, UK

Introduction: Up to 60% of patients with a positive sentinel lymph node (SLN) have no additional nodal involvement and do not benefit from completion axillary lymph node dissection (ALND). Several models have been developed to predict non-SLNs status in patients with breast cancer and SLN metastases. The purpose of our investigation was to compare some of the available models in a retrospective study.

Methods: Five different predictive nomograms (Memorial Sloan-Kettering Cancer Centre, Stanford, Cambridge, MD Anderson and Tenon scoring system) were tested on cohort of 77 SLN-positive patients, who underwent completion ALND. The accuracy was evaluated by receiver operating characteristic curves (ROC) and calculations of areas under curves (AUC) for each model.

Results: 27 out of 77 patients had at least one positive non-SLN (35%) and 8 of them were micromets (10.8%). Average number of SLNs taken out was 3.7 (1-11). The average number of positive SLNs was 1.9 (1-7). The average number of additional positive nodes found in the ALND was 3.6 (1-18). The best performing model was the Cambridge (AUC=0.65) followed by the MSKCC model (AUC=0.6). Stanford nomogram (AUC=0.56), Tenon score and MD Anderson score (AUC=0.53) had the lowest accuracy. All models fell short of expected AUC value of at least 0.8.

Conclusions: Our study suggests that none of the above models could reliably predict positive non-SLNs in our population. Differences in pathological assessment and surgical techniques make direct application of predictive models difficult.

P100. Delayed-Immediate Breast Reconstruction: Our Experience

Alice Townend, Michael Wilson, Stuart Allan, John Moir, Paola Serra, Sebastian Aspinall

North Tyneside General Hospital, North Tyneside, Tyne and Wear, UK

Introduction: Immediate breast reconstruction (IBR) is associated with better psychological outcomes following mastectomy. Pre-operatively, determining need for post-mastectomy radiotherapy (PMRT) is challenging – consequently many women are denied IBR. The 2-stage approach of delayed-immediate breast reconstruction (DIBR) has psychological and aesthetic benefits of skin-sparing mastectomy (SSM) and IBR, but minimises PMRT related complications. Women can then take time to consider their final reconstruction. We present our experience of DIBR.

Methods: The first 16 women completing 2-stage DIBR (November 2009 to November 2011) were included. Surgical and adjuvant treatment, histology and patient factors were recorded from hospital records. Stage one comprised SSM with insertion of an adjustable prosthesis in the sub-muscular plane. Need for adjuvant treatment was determined postoperatively by the MDT. This treatment was given prior to the second stage reconstruction.

Results: 8 patients had PMRT. The first 3 patients had no implant deflation prior to PMRT (Group 1), whereas the next 5 had partial implant deflation (Group 2). 8 patients did not have PMRT (Group 3). There was 1 implant extrusion (Group 1) and 1 cellulitis (Group 3). All patients completed second stage reconstruction (8 implant only, 5 LD flap and implant, 3 DIEP flap, 6 contralateral procedures).

Conclusions: DIBR is an alternative to IBR in patients who may require PMRT. No patients had delayed adjuvant treatment. Our complication rate (12.5%) is comparable with current literature. However, this cohort is small and further study with longer follow-up is warranted, particularly regarding the need for implant deflation prior to PMRT.

P101. Assessing the need for blood transfusion in patients with free deep inferior epigastric perforator flaps – A single surgeons experience

James Smith, George Filobos, Sherif Wilson

North Bristol NHS Trust, Bristol, UK

Introduction: The authors critically evaluate the risk of blood transfusion in patients who underwent surgical reconstruction using a free deep inferior epigastric perforator (DIEP) flap. The aim of the study was to identify the transfusion rate, assess the rationale for transfusion and determine any predictable risk factors.

Methods: A retrospective review was performed between March 2007 and November 2011 for all consecutive patients undergoing free DIEP flap for breast reconstruction at a single centre. Patient demographics, pre-operative and post-operative haemoglobin and haematocrit, perioperative fluid management, operation and ischaemic time, blood transfusion rate and complications were compared.

Results: 145 patients underwent 174 free DIEP flap reconstructions; 116 unilateral, and 29 bilateral procedures. A total of 10 patients returned to theatre (6.9%) with six total flap losses (3.4%). The overall transfusion rate was 26.9% (n=38). Transfusion rate each year reduced from 80%, 31.3%, 32.3%, 23.3% to 20%. 24 patients were transfused despite having a post-operative haemoglobin of more than 7g/dl. The transfused patient group included more bilateral DIEP patients, longer hospital stays, along with a higher incidence of pre-operative anaemia with no statistical difference in peri-operative fluid management between the transfused and non-transfused group.

Conclusions: Bilateral reconstruction and pre-operative anaemia appear to be a significant risk factor for transfusion. Decision to transfuse shouldn't be taken without due consideration and in our cohort 73.2% of patients were transfused with a post-operative haemoglobin level of more than 7g/dl highlighting a group that may have avoided blood transfusion.

P102. Do we need intraoperative sentinel lymph node analysis when preoperative ultrasound staging is so accurate?

Katrina Schwodler, Caroline Annesley, Nicky Laurence, Dorothy Goddard, Richard Sutton

Royal United Hospital, Bath, UK

Introduction: Preoperative axillary ultrasound is a mandatory staging investigation for patients with breast cancer. We analysed data to evaluate the accuracy of ultrasound in our unit and correlated this with postoperative histopathology. In particular we aimed to determine if those patients with lymph node metastasis, in whom a preoperative diagnosis was not made, have low volume metastatic disease. Following publication of the results of ACOSOG Z0011, axillary lymph node dissection may not be required for all patients with a positive sentinel lymph node, especially those with low volume disease.

Method: We included all patients diagnosed with early breast cancer, during 2010 that underwent surgical treatment. We retrospectively recorded the axillary ultrasound findings and histological results of surgery.

Results: Of a total of 226 patients, 107 patients had axillary node involvement. Of those, 70% (75) had a suspicious lymph node seen on ultrasound. 53% (57) had abnormal ultrasound and positive core biopsy. 14% (18) had abnormal ultrasound and negative biopsy with positive SLNB. 30% (32) had a normal ultrasound and positive SLNB. In those patients with a normal axillary ultrasound scan and a positive SLNB, 29 of 32 had low-volume metastatic disease (0, 1 or 2 further lymph nodes positive in further axillary dissection)

Conclusion: We have shown that we can identify significant lymph node metastasis preoperatively in the majority of patients. Those patients with positive axillary disease not identified preoperatively have low volume metastatic disease. In turn, this has important implications for the value of intraoperative sentinel lymph node analysis.

P103. Use of acellular dermal matrix in breast reconstruction facilitates a more rapid achievement of final breast volume than standard tissue expansion

Chloe Wright, Asaid Zeiton, Richard Johnson, Lester Barr
University Hospital South Manchester, Manchester, UK

Introduction: In the absence of acellular dermal matrix (Strattice™), implant-based reconstructions are commonly performed as two-stage procedures: tissue expansion (TE) followed by exchange for permanent implant. The aim of this study was to determine whether Strattice facilitates more rapid achievement of final breast volume after immediate reconstruction.

Methods: The notes of our first 24 single-stage Strattice breast reconstruction patients (13 bilateral) were reviewed and data retrieved on implant-type, on-table implant volume and number of out-patient expansions. A control group of 12 bilateral and 10 unilateral TE patients under the same surgeons in the period immediately preceding the advent of Strattice was selected.

Results: In the Strattice group 6 patients had fixed-size implants and 18 had dual-function expander-implants. 9 patients in the TE group had standard expanders, 13 had dual-function implants. The volumes of implant at the end of surgery was statistically significantly greater in the Strattice group than the TE group ($p=0.0007$). The mean volume of implant at the end of operation was 307mls in the Strattice group (S.D: 121) and 191mls for the controls (S.D: 86). The mean number of out-patient expansions was 0.83 for the Strattice group and 2.7 for the TE group.

Conclusions: Our study shows that use of Strattice facilitates a larger 'on-table' volume of implant, more rapid achievement of final volume, and fewer out-patient expansions. We believe that this maximises the use of the skin envelope and hence produces an improved cosmetic result over standard tissue-expander techniques.

P104. Biodimensional anatomical expandable implants as the primary device in one stage immediate breast reconstruction (IBR): A long term outcomes analysis

Ana Agusti, Jennifer Hu, Ann Ward, Mohammed Kabir, Gerald Gui
The Royal Marsden Hospital NHS Trust, London, UK

Background: Breast reconstruction is a process of care to achieve optimum breast form and symmetry. Planned one stage IBR refers to the

creation of a final breast form at the primary operation, although other procedures to refine aesthetics or contralateral symmetry may still be scheduled.

Aim: To assess the implant retention rates, the interval to implant exchange and the nature of secondary surgical procedures.

Patients and Methods: 193 women treated between 1997-2010 by mastectomy and IBR were prospectively collected. The implant loss rate in the study period was 3.5% and unsuccessful reconstruction was excluded from analysis.

Results: 249 reconstructions were performed in 193 patients. 77 patients had a submuscular implant and 116 patients had an implant assisted latissimus flap. The median age was 45 years (range 20 – 77) with median follow-up of 98 months (range 27 – 159). 141/193 patients (73%) maintained their original implant. 52 patients had an implant exchange: 12 within 1 year, 7 at 1 to 2 years, and 33 beyond 3 years. The median time to implant exchange was 4 years (range 0.5 month to 13.5 years).

Secondary procedures for nipple reconstruction, implant port removal, or to achieve contralateral symmetry was performed in 139/193 (72%) patients, median time to further surgery 21 months (0.5 – 159 months). 158 (22%) patients remain disease free.

Conclusion: Implants exchanged within 2 years represent a failure to achieve one stage reconstruction and can be achieved with careful patient selection. One stage IBR using a biodimensional implant is a reliable method of achieving one stage surgery.

P105. Analysis of the efficacy of a 'low-risk' breast clinic; a one year study

Antonia Hoyle, Alhad Dhebri, Jeremy Huddy, Pardeep Arora
Tameside Hospital NHS Foundation Trust, Ashton-under-Lyne, UK

Introduction: 'One-stop' triple assessment is the gold standard for symptomatic breast disease. Whilst one-stop triple assessment clinics are invaluable, they consume considerable resources, and the majority of patients are discharged after assessment with either normal findings or benign breast disease requiring no further intervention. To address this, a 'low-risk' breast clinic was established, demanding fewer resources (clinical assessment +/- ultrasonography +/- cytology/biopsy) and targeting patients deemed at low-risk of sinister breast pathology (women aged <35 and men) who would otherwise have presented via traditional triple assessment clinic.

Methods: Case-note data was collected prospectively since inception of the 'low-risk' breast clinic in 2010-11, regarding patient demographics, clinical presentation, investigation, diagnosis and outcome.

Results: 324 new patients were seen in the 'low-risk' breast clinic in the year 2010-11. Common presenting complaints included lump/swelling in the breast (70%), mastalgia (10%), nipple changes (4%), axillary mass (3%). 85% of patients underwent radiological assessment. 20% of patients required histopathological assessment. Diagnoses included no breast pathology (38%), benign breast disease (55%), infection/abscess (6%), invasive ductal carcinoma (1%). 15% of patients required no investigation; 75% were discharged requiring no further follow-up. The 'low-risk' clinic was estimated to cost 40% less than traditional clinics.

Conclusions: The majority of patients presenting to the 'low-risk' breast clinic are diagnosed with minimal breast pathology, and can be comprehensively assessed, diagnosed and discharged within one appointment. Risk-stratification of patients allows targeted, cost-effective allocation of resources without compromising patient care, and offers a feasible alternative to traditional clinics for 'low-risk' patients.

P106. Management of human epidermal growth factor receptor-2 (HER2) positive breast cancer patients at University Hospitals of Leicester

Monika Kaushik, Tim Rattay, Sheila Shokuhi
University Hospitals of Leicester, Leicester, UK

Introduction: The HER2 protein is overexpressed in up to 30% of breast cancers. This is correlated with more aggressive breast cancer and poor prognosis. Trastuzumab (Herceptin; Genentech) is a recombinant humanized monoclonal antibody against the HER2 receptor and is the only FDA-approved targeted agent for treatment of HER2 over-expressing breast cancer. Phase II and III clinical trials performed in women with metastatic breast cancers that overexpress HER2 have shown trastuzumab to have clinical activity when used as monotherapy, while also improving survival when used as a first line therapy in combination with chemotherapy. NICE guidelines recommend use of trastuzumab in combination with chemotherapy. However, evidence is lacking to guide use of this as single agent therapy in adjuvant setting in breast cancer patients having significant medical comorbidities. The aim of our retrospective audit was to study the management of patients who were HER2 positive and to identify patients who could have benefited with trastuzumab as single agent.

Methods: The data was collected on patients who presented with invasive breast cancer between January 2007 and December 2009. Information was obtained using electronic databases and case notes. Patients with HER2 + receptor status were identified and analysed. Number of patients who received trastuzumab and patients who did not receive trastuzumab were identified and assessed.

Results: A total of 2124 female patients with invasive breast carcinoma were identified. 234 patients (11.01%) were HER2 positive out of which 162 (69.2%) received chemotherapy and trastuzumab, 7 (0.02%) patients had chemotherapy but did not receive trastuzumab (4 with advanced metastatic cancer, 3 had cardiac toxicity). 65 (27.8%) patients did not get chemotherapy because of comorbidities. Out of these however, 3 patients did receive trastuzumab as single agent therapy. Out of the 65 patients who did not receive chemotherapy, 59 patients had ductal cancer, 3 had lobular cancer and 3 had mixed ductal and lobular cancer features. 27 (41.5%) of these 65 patients had grade 3, 22 (33.8%) had grade 2, and 2 (0.03%) had grade 1 cancer. The mean Nottingham Prognostic Index in this group was 4.12. 35 (53.8%) of these patients were estrogen receptor (ER) +ve, while 30 (46.1%) were ER -ve. 9 (13.8%) of these patients had vascular invasion.

Discussion: In our study, we identified that about 29% of our HER2 +ve patients have not received trastuzumab as they were not 'fit' to have chemotherapy. These patients are known to have aggressive tumours and have a poor prognosis. Evidence based guidelines are lacking to manage this unique subset of patients who are HER2 positive but cannot have chemotherapy due to medical comorbidities or significant side effects. Further studies regarding the efficacy and toxicity of single agent trastuzumab in the adjuvant setting are needed.

P107. Results of a "belt and braces" approach to using OSNA: What to do when there is discordance with histology

Tajudeen Wahab¹, Timothy Davidson¹, Shramana Banerjee¹, Md Zaker Ullah¹, Neil Byron², Stephen Davison², Soha El-Sheikh², Nuala McDermott², Mohammad Keshtgar¹

¹Breast Unit, Royal Free Hospital, London, UK

²Histopathology Department, Royal Free Hospital, London, UK

Introduction: Our institution has adopted the OSNA® (One Step Nucleic Acid Amplification) system for intraoperative diagnosis of breast cancer sentinel lymph nodes (SLN) metastasis, with continued use of histology as the "gold standard". The implications of discordancy on the management of the affected patients were further explored.

Methods: SLNs were sent to the laboratory immediately after removal and processed according to a standard protocol ("breadloafed", half the slices for OSNA and half for histology) for immediate intraoperative analysis. Axillary dissection was performed if the OSNA result was positive. The discordance, sensitivity and specificity were calculated.

Results: We assessed 208 samples from 196 SLNs from 124 patients. Overall sensitivity was 94%, specificity 96.6%, and concordance 96%. Of the five patients with discordant results, four had axillary node dissection

(no additional nodal disease was found) and one had an equivocal positive nodes interpreted as negative intra-operatively, avoiding a clearance. A reason for discordance and clinical management of these patients was investigated in detail.

Conclusion: OSNA has a high concordance rate compared to histology and allowed completion of axillary dissection under the same anaesthesia in patients with positive results. Based on this internal validation study we propose that it is safe to subject the whole node SLN to OSNA.

P108. The final outcome of B5c lesions detected on VACB excisions

Layal El-Asir, Hazem Khout, Jackie Westgarth, Linsley Lunt, Tani Fasih, David Browell, Kevin Clark

Queen Elizabeth Hospital, Gateshead, Tyne and Wear, UK

Introduction: The introduction of Vacuum assisted core biopsy (VACB) has changed the management of screen detected mammographic abnormalities. Accurate preoperative diagnosis of invasive malignancy is important for pre operative staging and planning for appropriate surgical excision. The aim of this study was to identify VACB specimens where invasive disease could not be confidently ruled out (B5c), and compare results to final histology.

Methods: The pathology database was used to track all B5 histology reports obtained using VACB of screen detected mammographic abnormalities from January 2004 to January 2011 inclusive. These were cross referenced with final histology reports from the surgical excisions for the relevant patients.

Results: Four hundred and ninety two B5 histology reports in 471 patients were identified. Of these, 346 were reported as B5a (DCIS) and 122 as B5b (invasive carcinoma). In the remaining 24 biopsies (4.8%), the possibility of invasive disease could not be excluded (B5c report). The surgical excision specimens of these 24 cases revealed DCIS in 87.5%, invasive carcinoma in 4.1%, and in 8.3% no residual malignancy was identified.

Conclusion: In the majority of cases invasive disease can be distinguished from non invasive disease using of VACB prior to surgical excision. Most cases where this could not be determined, no invasive disease was found.

P109. Are re-excision margins in Breast conserving surgery important?

Shamaela Waheed, Rachel Meek, Carole Hughes, Adrian Ball, Adam Stacey-Clear

Breast Unit, East Surrey Hospital, Redhill, UK

Aim: The need to re-excise margins after breast conserving surgery can be disappointing for both the patient and the surgeon. No evidence of residual tumour occurs in the majority of re-excised margin specimens which is frustrating.

Methods: We analysed the incidence of involved margins following breast conserving surgery over a 5 yr period from Jan 2005 to April 2011 at our Trust. We examined the histology of these patients from retrospective data, using a minimum of 2mm clearance to define a clear margin.

Results: In total over the 5 yr period 880 patients had breast conserving surgery. 123(14%) patients had re-excision margins. In total of those patients who had re-excision margins, 37 (30%) had residual disease in the margin. Residual invasive tumour was found in 33 (27%) and DCIS in 4 (3%). A single margin was involved in 18 patients (49%). 2 margins in 13(35%), 3 margins in 4 patients (11%), and 4 margin involvement in 2 patients (5%). The initial tumour size for the 37 patients with residual disease was 11-20mm in 11 patients (29.7%), 21-30mm in 14 patients (37.5%) 31-40mm in 6 patients (16.2%) and >41mm in 6 patients (16.2%). Of the patients requiring re-excision surgery 4 patients had Grade 1(10.8%), 18 patients Grade 2(48.6%) and 15 patients Grade 3 (40.5%). There were no recurrences of tumour over the 5 year period.

Discussion: Most women undergoing breast conserving surgery in our experience (86%) do not require further re-excision surgery, and of those that do, the majority do not have residual disease in the re-excision specimens. From our data a positive margin on initial excision is only slightly more likely to predict for residual cancer in women undergoing breast conserving surgery, all of whom will have radiotherapy using conventional techniques.

P110. Pre-reconstruction TRAM-flap conditioning by TEP ligation of the inferior epigastric vessels

Charlotte Ives, Samuel James, Michael Green, Nicholas Johnson
Breast Care Unit, Torbay Hospital, Torbay, Devon, UK

Introduction: Pedicled transverse rectus abdominis myocutaneous flap (TRAM) is an established breast reconstruction technique. Pre-reconstruction ligation of the inferior epigastric vessels by open and transabdominal pre-peritoneal laparoscopic techniques enhance flap survival. More recently the TEP (totally extraperitoneal) laparoscopic approach has been described. TEP is minimally invasive and avoids potential complications associated with entering the peritoneal cavity. There are no UK studies describing TEP ligation outcomes, furthermore no studies describe outcomes of the subsequent TRAM.

Methods: This retrospective study includes all patients who had TRAM at our centre.

Results: Results are expressed as mean +/- standard deviation. Between March 2008 and November 2011, 15 patients underwent TRAM. Eight had preoperative TEP ligation, five had open ligation and two had no preoperative conditioning. All TEP procedures were performed as day-case; one was converted to transabdominal approach. Operating time for TRAM was not statistically different between ligation groups (TEP=286.06 +/-52.55 minutes, non-TEP= 351.53 +/- 78.68 minutes, p=0.077). TEP was not significantly different compared to open or no ligation separately. Inpatient stay was not statistically different between ligation groups (TEP = 4.75 +/- 2.12 days, non-TEP=6.71 +/- 1.49 days, p= 0.062). There were two major complications in the TEP group (repositioning of TRAM, abdominal cellulitis). There were two major complications in the non-TEP group (umbilical necrosis, abdominal sinus).

Conclusions: TEP ligation of inferior epigastric vessels is safe and effective as preoperative conditioning before TRAM. TRAM operating time and outcome is satisfactory after TEP ligation compared to open or no ligation of inferior epigastric arteries.

P111. Defining the Role of Lysosomal Cathepsins in Breast Cancer
Katy Teo¹, Peter Kreuzaler², Anna Stanisiewska², Christine Watson²

¹Department of Surgery, Addenbrooke's Hospital, Cambridgeshire, UK
²Department of Pathology, University of Cambridge, Cambridgeshire, UK

Constitutive activity of transcription factor Stat3 and elevated expression of lysosomal proteases cathepsins B and L has been noted in many types of human cancer. Although cathepsins are lysosomal proteins, their secretion has been observed during neoplastic formation, with high levels correlating with poor prognosis in breast cancer. Having previously demonstrated that Stat3 upregulates cathepsins B and L and regulates lysosomal-mediated cell death during mammary gland involution, we wished to determine the role of cathepsins in breast cancer tumorigenesis.

Cell culture studies were conducted using EpH4 mammary epithelial and MDA-MB-468 human breast cancer cell lines. The expression and activity of cathepsins B and L in cellular supernatant was measured 48-hours following stimulation with either Stat3 activator Oncostatin M (OSM) or control. The effect of Stat-3 inhibitor (S3I) and dexamethasone (delays involution) was also observed.

Within EpH4 cellular supernatant, cathepsin B was only detected following stimulation with OSM and levels were diminished where cells were exposed to S3I or dexamethasone, while cathepsin L was uniformly secreted irrespective of activation or inhibition of Stat3. Furthermore,

cathepsin B activity was greater than cathepsin L in OSM-stimulated EpH4 supernatant. Conversely, in MDA-MB-468 breast cancer cells cathepsin L secretion was limited to OSM-stimulated cells, with no secreted cathepsin B detected.

These preliminary findings suggest a role for cathepsin L in breast cancer, however analysis of additional breast cancer cell lines is required. Since cathepsins can degrade the extracellular matrix, they may be pivotal to tumour invasion and metastasis, and could represent important therapeutic targets.

P112. Micrometastases - is it time to stop clearing and how will it affect axillary clearance numbers?

Sisse Olsen¹, Richard Wassall¹, Lee Min Lai², Joseph Maalo², Simon Thomson², Douglas Ferguson³

¹Royal Devon and Exeter Hospital Foundation Trust, Exeter, Devon, UK

²West Hertfordshire Hospitals NHS Trust, St Albans, Hertfordshire, UK

³Royal Devon and Exeter NHS Foundation Trust and Peninsular Medical School, Exeter, Devon, UK

Background: Controversy surrounds the management of micro-metastases within sentinel lymph node biopsy (SNB). Current NICE guidance is to offer axillary lymph node clearance (ANC) following micrometastases on SNB based on evidence from two systematic reviews. This is likely to be debated following publication of ACOSOG Z0011 and the imminent publication of IBCSG 23-01. Both studies showed no benefit in overall, disease free survival or axillary recurrence rates of ANC over SNB alone.

Methods: Retrospective audit of consecutive patients undergoing SNB and meeting eligibility criteria of IBCSG 23-01 (clinically node negative cancers, T1 and T2 tumours, positive SNB with micrometastasis) from 2 large breast cancer centres from 2007–2010. SNB was done using dual technique and assessed by H&E of 2mm slices.

Results: From 2007-2011 78 of 1316 patients had micro-metastases following SNB. 68 matched the IBCSG criteria. Of these 59/68 underwent full ANC. 8/59(13%) had further lymph node metastases identified. 631 ANC was carried out during this time period.

Patient characteristics	IBCSG 23-01	UK data	p-value
Mean age	54	60 (57 to 63 CI 95%)	Insufficient data to calculate
T1	67%	42/68 (62%)	0.60 (fishers exact)
ER+	89%	56/68 (82%)	0.15 (fishers exact)
Mastectomy	25%	29/68(43%)	0.003 (fishers exact)
Breast conserving surgery	75%	39/68 (57%)	0.003 (fishers exact)

Discussion: Patients from the present study are comparable to IBCSG 23-01 for T stage and ER positivity. The mastectomy rate is significantly higher and patients' mean age is probably higher in this study. The number of patients with further metastatic lymph-nodes following ANC was 13% and none had more than 3 additional involved nodes. From this study, if ANC was avoided in patients eligible for IBCSG 23-01 it would result in 11% (17/160) reduction in ANC per year.

P113. Adjuvant! Online versus PREDICT: Which prognostic tool to use and does it make a difference?

A.K. Humphreys, M.D. Rees, H. Al-Momani, C. Gateley
Royal Gwent Hospital, Newport, UK

Introduction: Adjuvant! Online is a web-based tool that estimates prognostic benefit of adjuvant treatment for breast cancer patients.

PREDICT, a British based tool, has recently been launched. In addition to the standard to tumour characteristics to differentiate mode of presentation (screen detected/symptomatic) in addition to standard tumour characteristics and is the first to include HER-2 status. Both are used in MDT settings, whether any difference exists is uncertain.

Methods: Female breast cancer cases undergoing surgery with curative intent in a one-year period (August 2010 – August 2011) were included in the study (n=105). Patient data was entered into both online tools and results recorded. Outcome measures were 10-year survival with no adjuvant therapy along with additional survival benefit with hormonal and chemotherapy.

Results: Median age was 62 (range 30-92), 91 ER positive and 18 HER2 positive cancers. Mean tumour size was 25mm, both median tumour grade and lymph node harvest was 2. PREDICT estimated an improved 10-year survival in those receiving no treatment (59.9% vs. 55.5% p=0.047). This difference was also seen in patients with screen-detected cancers (65.0% vs. 60.3% p=0.023). PREDICT estimated a higher survival benefit with adjuvant chemotherapy in the overall cohort, (6.00% vs. 3.86% p<0.001) as well as the subgroup of symptomatic cancers alone (6.36% vs. 4.06% p<0.001).

Conclusions: PREDICT estimated an improved survival with no further therapy but estimated improved survival benefit with systemic chemotherapy when compared with Adjuvant! Online. This may have implications on how patients are managed following their surgery.

P114. What is the best follow up for patients after breast cancer surgery?

Lydia Gabriel, Ellena Smith, Sunreet Randhawa, Katy Hogben
Charing Cross Hospital, London, UK

Introduction: There are limited guidelines from NICE with regards to follow-up after treatment for breast cancer. However, NICE suggest 2-3 years as a maximum time for follow-up and emphasise that ‘long-term routine hospital-based follow-up should cease’. The aim of this audit was to identify the means by which recurrences are detected at our hospital, where patients are offered yearly outpatient appointments and imaging for 5 years after their surgery.

Method: Data was retrospectively collected from 2005 for all patients who underwent surgery for breast cancer, and included demographics, operative procedures performed, treatment received, length of follow-up, recurrence and survival rates. Particular attention was paid to the timing of recurrence and method of detection. Only patients with a minimum of 1 year’s follow-up were included.

Results: 268 patients underwent surgery from January to December 2005, however full data collection was possible on only 193 patients. Follow-up ranged from 16 to 81 months (median 67 months). During this time there have been 23 deaths (12 breast cancer related), and 30 recurrences (10 local (all invasive), 7 regional (4 axillary (1 ipsilateral, 3 contralateral), 2 supraclavicular (1 ipsilateral, 1 contralateral)) and 7 distant recurrences and 6 second primaries). Time to recurrence ranged from 14 to 79 months (median 43 months). The majority of recurrences were symptomatically detected. See Table 1:

Conclusion: Clinical routine follow-up has been shown to be of value in detecting recurrences symptomatically.

Table 1

Recurrence	Local(n=10)	Regional(n=7)	Distant(n=7)	Second Primary(n=6)
Symptomatically-detected	5	6	4	2
Image-detected	5-mammogram	1-staging CT	2-staging CT, 1-CT.	3-mammogram (1 at time of mammoplasty)

P115. Can We Spare Patients Second Axillary Surgery?

Joanna Seward¹, Vikesh Chawla¹, John Murphy², Elizabeth Redmond¹, Claudia Harding-MacKean¹

¹ Countess of Chester Hospital, Chester, UK

² Royal Victoria Hospital, Newcastle, UK

Introduction: Sentinel lymph node biopsy (SLNB) identifies positive lymph nodes in 20-30%, with subsequent axillary node clearance (Association of Breast Surgery guidelines 2005). In our institution, since 2009, all breast cancer patients have had axillary ultrasound with pathological examination of indeterminate or suspicious nodes. We audit our sensitivity and specificity for axillary ultrasound and correlate SLNB outcomes with the Memorial Sloan Kettering (MSK) Nomogram for predicting additional nodal metastasis after completion axillary node clearance to see if we can spare second axillary surgery.

Methods: The axillary ultrasound result and histological outcome following surgery was analysed by retrospective audit of all consecutive patients diagnosed with breast cancer between 1st January 2010 and 31st December 2010.

Results: The sensitivity and specificity of axillary ultrasound was 44% and 98% respectively, and with ultrasound-guided core biopsy or fine needle aspiration of suspicious nodes, was 41% and 100%. 21% of sentinel node biopsies (26/122) had positive nodes, and 8 had micrometastases. Following axillary clearance, 62% (16/26) had no further positive nodes following axillary node clearance. The MSK nomogram was not helpful in predicting those needing a second axillary procedure (area under receiver operating characteristic curve 0.62).

Conclusions: Second axillary surgery was only necessary in 8% of all SLNB patients, but the MSK nomogram would not have helped us predict who would benefit from completion axillary node clearance. Ultrasound guided pathological examination of any axillary node in all patients should be considered to increase its sensitivity.

P116. Single Incision Transumbilical Levels 1 and 2 Axillary Dissection using flexible endoscopy: Is it acceptable to the general public?

James Clark¹, Daniel Leff¹, Mikael Sodergren¹, Richard Newton¹, David Noonan¹, Robert Goldin², Ara Darzi¹, Guang-Zhong Yang¹

¹ Hamlyn Centre for Robotic Surgery, Imperial College London, London, UK

² Centre for Pathology, Imperial College London, London, UK

Introduction: Single incision transumbilical level 1 and 2 axillary lymph node dissection (SITALD), has previously described in cadaveric models. The risks and benefits of SITALD can only be hypothesised. However, the receptiveness of the general public towards the technique would determine whether this approach should be more seriously investigated.

Materials and Methods: A questionnaire was designed to assess the acceptability of SITALD to the general population when presented against conventional open and peri-areolar laparoscopic techniques. The level of complication risk that patients were willing to accept should they choose the technique was assessed through a series of questions that targeted their operative preference when presented with various statements of increasing risk severity (cosmesis and oncological) for the techniques. Questionnaires were left within places where members of the public, targeting women, would be able to pick them up and answer them on their own volition.

Results: One hundred and twenty seven people including 8 men, responded to the questionnaire, mean age 41.6 with 73% preferring SITALND over the open and peri-areolar alternatives when morbidities were considered equivocal. When a hypothetical elevated risk of cancer recurrence was included with the SITALD approach, approximately one fifth of the public would still accept it perhaps due to the improved cosmesis.

Conclusion: The use of the flexible endoscope to undertake axillary dissection would be acceptable to the general public if it were proved to be oncologically safe, supporting on-going efforts to overcome the challenges associated with current endoscopic equipment currently limiting clinical viability.

P117. Predicting non-sentinel lymph node metastases following positive sentinel lymph node biopsy in our unit

Leila L. Touil, Richard K. Johnson

University Hospital South Manchester, Manchester, UK

Introduction: Completion axillary node dissection (C-ALND) remains the standard of care for patients with sentinel node metastases. It may be possible to identify a sub-group of patients with a positive sentinel lymph node (SLN) without any further metastases in the non-sentinel lymph nodes (NSLNs).

Methods: In this single-institutional study we performed a retrospective review of the case notes of 154 female patients who underwent C-ALND following positive SLN (2007-2009). Pathological characteristics of the primary-tumour and SLN metastases were assessed to determine the factors predicting the metastatic status of non-sentinel lymph nodes? Categorical parameters were compared using chi-squared or tests for linear trend. Continuous normally distributed data was analysed using Student's t-tests. All analyses used the conventional two-sided 5% significance-level and were produced using SPSS version-15.

Results: Mean overall age was 58 years standard-deviation (SD) 10.7 (range 35-87). The NSLNs contained metastases in 50 patients (32.5 %), including 9 patients (26 %) with micrometastases ($\leq 0.2\text{mm}$) and 41 patients (35 %) with macrometastases ($\geq 0.2\text{mm}$). There were no statistically significant differences between patients with or without NSLN metastases with regards to pathological size of the SLN or tumour characteristics including size, grade, lymphovascular invasion or receptor-status respectively. The mean percentage of positive SLN was lower with 51% (SD 27.4) for patients without and higher with 62% (SD 29.1) for those with NSLN metastases; this difference was statistically significant (pvalue 0.022).

Conclusions: The incidence of NSLN metastases was related to the number of positive SLNs and size of SLN metastases. In patients with positive SLNs it was not possible to identify a subset of patients without NSLN metastases using the biological predictive factors.

P118. Lipofilling: How good is it?

Awais Ahmed, Esa Nael, Raghawan Vidya

Stafford General Hospital, Stafford, UK

Background: Lipofilling is performed to improve the breast contour, after both breast-conserving surgery and breast reconstruction.

Method: We retrospectively audited all patients who underwent lipoinfiltration between Sept 2009 to Oct 2011. Fat was harvested from the abdomen and/or both thighs. The lipivage system was used for both fat harvesting and infiltration. No centrifugation of fat was required as the system has an autofilter. All patients had the procedure under general anaesthesia and carried out as day case procedure.

Result: A total of 23 patients underwent the procedure. The patients' age ranged between 21 to 68. A minimum of 30 cc of fat was used for lipoinfiltration. Three patients had matching augmentation, three patients had matching reduction and two patients had mastopexy. Three patients needed at least two procedures of lipoinfiltration. The majority of patients had no

complications except for one patient who had (minor) fat necrosis which, settled spontaneously and one patient had a redness of skin which settled with antibiotics. There was no interference with surveillance mammogram in majority of the patients.

Conclusion: Lipofilling remains a promising option for breast contouring after breast surgery. It is a useful adjunct to improve cosmesis in small and medium size defects.

P119. Chemotherapy extravasation injury from a portacath requiring chest wall resurfacing

Sarah Kruger, Sarah Huf, Fiona MacNeill

Breast Surgery Department, Royal Marsden Hospital, London, UK

Subcutaneous central venous access port devices (CVAPD) are commonly used to provide venous access in cancer patients with poor venous access or who require long-term chemotherapy and/or herceptin. Significant extravasation is a rare complication but if unrecognized can result in major morbidity.

We describe a 59 year old woman with left breast cancer managed with bilateral reduction mammoplasties and a right subclavian CVAPD, who suffered extensive right breast and skin necrosis secondary to an unrecognized extravasation of the fourth cycle of taxotere, adriamycin and cyclophosphamide (TAC). After four months of observation to allow delineation and demarcation, she underwent wide excision of the chest wall skin and subcutaneous tissue from just below the clavicles to include bilateral completion mastectomies. Bilateral DIEP flaps resurfaced the chest wall. Our approach was multidisciplinary including breast and plastic surgeons.

This case emphasises the importance of thoughtful port placement to allow easy port identification, secure needle placement and reliable observation during infusion. Ports should be placed subcutaneously directly under the skin, however incisions also need to be placed in aesthetically favorable positions, avoiding the mid-line.

P120. Can BORIS predict breast cancer early in women with high familial risk?

Anuradha Apte¹, Sankaran Chandrasekharan¹, Elena Klenova²

¹Breast Unit, Essex County Hospital, Colchester, UK

²Dept of Biological Sciences, University of Essex, Colchester, UK

Introduction: Breast cancer is the most common cancer in the UK. There are currently no accurate early predictors for detection of breast cancer and therefore there is an urgent need to identify "biomarkers" which can complement/replace currently available diagnostic tools. Our study involves BORIS (Brother of the Regulator of Imprinted Sites), a protein, found in leukocytes of breast cancer patients. We investigate BORIS expression in women with high familial risk of breast cancer. We hypothesize that appearance of BORIS in this high-risk group may predict the presence of cancer early and hence BORIS may be considered as a potential early breast cancer biomarker. The project is approved by REC Essex1.

Methods: Aim is to recruit 300 women (age group of 40-50 years) with high risk of familial breast cancer. Blood samples (10 ml) are collected from each participant every year for five consecutive years at the time of women's annual mammogram. BORIS expression in the leukocytes is evaluated by various methods (immunocytochemistry, Western blot and ELISA). The results are compared with the corresponding mammograms.

Results: Preliminary results of western blot analysis show that 2 out of 60 women recruited so far, had low levels of BORIS expression. Further tests are being conducted to confirm the finding. Clinically, the mammograms of all these participants were negative.

Conclusion: Negative mammograms and the absence of Boris expression in women with high familial risk of breast cancer are correlated suggesting that BORIS may be an early biomarker of breast cancer.

P121. Management of the Axilla Following Neoadjuvant Chemotherapy for Breast Cancer

James Pine¹, Stuart McCormick¹, Amanda Walshe¹, Wendy Carr¹, Ramesh Kasareneni¹, Ian Goulbourne¹, Paolo Serra¹, Magdi Youssef², Mike Carr², Tony Branson³, Sebastian Aspinall¹

¹North Tyneside General Hospital, North Shields, UK

²Wansbeck Hospital, Ashington, UK

³Royal Victoria Infirmary, Newcastle-Upon-Tyne, UK

Introduction: Management of the axilla in patients who receive neoadjuvant chemotherapy (NAC) remains controversial. Sentinel lymph node biopsy (SLNB) has previously been contraindicated following NAC, but this view is being challenged. We review our experience with axillary management in NAC.

Method: Retrospective audit was undertaken of patients who received NAC in our unit between October 2000 and October 2011.

Results: 37 patients received NAC for breast cancer, of which 35 patients subsequently underwent some form of axillary surgery. Pre-operative imaging of the axilla was performed in 23 patients, of whom 9 had malignant cells on fine needle aspiration cytology (FNAC). Operative management included axillary node clearance (ANC) in 32, SLNB in 2 and axillary node sample (ANS) in 1 patient. 11 ANC patients and 2 SLNB patients had no nodal metastases on histopathology (13/35, 35%). Three out of nine patients diagnosed pre-NAC with positive nodes had no nodal metastases at ANC (complete axillary response). On univariate analysis negative hormone receptor status was found to predict negative lymph node status (70% if hormone receptor negative versus 26% if hormone receptor positive, odds ratio 6.6 (1.3-34.1), $p=0.024$).

Conclusion: The incidence of LN metastases in patients requiring NAC is high (22/35, 65%) and so routine ANC following NAC is justified. Alternatively, if repeat axillary imaging / FNAC following NAC does not identify nodal metastases then SLNB may prevent 13/35 or 35% having an unnecessary ANC. Hormone receptor status may influence response to chemotherapy and therefore impact on axillary management.

P122. An early experience with SNOLL in the management of impalpable breast cancer

Mark Galea¹, Ramesh H.S. Jois¹, Leena S. Chagla¹, Atanu Ray¹, John Herbert², Olga Harris³, Sean Desmond³, Rani Thind³

¹Department of Surgery, Whiston Hospital, Prescot, Merseyside, UK

²Department of Nuclear Medicine, Whiston Hospital, Prescot, Merseyside, UK

³Department of Radiology, Whiston Hospital, Prescot, Merseyside, UK

Introduction: Detection of impalpable breast lesions is on the rise due to mass population screening. Radio-guided occult lesion localisation (ROLL) has recently been used in the management of early lesions while sentinel lymph node biopsy (SLNB) has been used to detect occult lymph node metastases. To optimise localisation many international centres have proposed a combination of ROLL and SLNB (SNOLL).

Methods: Patients with impalpable invasive cancer and clinically negative axillae were analysed. Impalpable breast lesions were localised with an intra-lesion injection of 0.1mls of 99Tc nanocolloid (1MBq) 1-4 hours before surgery. SLNs were identified using 0.2mls of 99Tc nanocolloid (20MBq) injected subdermally in the periareolar region within the index quadrant, the day before surgery. All lymph nodes and target tissue that were focally radioactive were denoted using signals from a gamma probe.

Results: SNOLL was utilised on 79 patients (median age, 63) between 2007 and 2009. 76 procedures were for invasive breast cancers. Median primary tumour size was 12mm (range, 10 – 17mm). Over 2/3 of the lesions were located in upper half of breast, 54.4% in outer quadrant and 15.5% in inner quadrant. Mean number of SLNBs retrieved was 1.86. In addition to SLNBs, 12 patients (15.2%) had non SLNBs performed. None were positive. SLN positive patients was 7 (8.9%) with a mean retrieval of 2.

Conclusion: SNOLL successfully localised all lesions. The combined use of radio-isotopes for lesion and sentinel lymph node removal in early breast cancer is feasible and reliable. Such a technique could rapidly become a standard practice within the NHS.

P123. Is Sentinel Lymph Node Biopsy (SLNB) for Breast Cancer Necessary for Lymph Nodes Detected on Clinical Examination or Imaging?

Vivien V. Ng, Suet M. Chan, Steven Courtney, Hilary Umeh, Brendan Smith, P.G. Roy

Royal Berkshire Hospital, Reading, UK

Introduction: SLNB is standard procedure to stage the axilla in breast cancer patients. Proceeding to an axillary node clearance without an SLNB in those with palpable or image detected abnormal nodes may omit the need for a second operation. The aim of this study is to find out what proportion of patients with positive SLNB have clinically or USS detected lymph nodes and whether those with palpable or image detected nodes have metastases.

Methods: All patients who underwent an axillary clearance from April 2008-2010 were included. The SLNB result was noted along with information regarding the clinical examination, USS and fine needle aspirate or core biopsy result.

Results: 158 axillary clearances were performed. 50% had positive imaging for lymph nodes, and 20% had clinically palpable nodes. 85 SLNB/axillary node sampling were performed with a positive result and 17 patients had nodes seen on imaging. Of these, only 3 had clinically palpable nodes. 61 axillary clearances were performed based on a positive lymph node histology result, and the majority of these (92%), nodes were seen on imaging but only 26 (42%) were clinically palpable. 5 patients had a positive USS result and 3 had palpable nodes. The largest lymph node seen was 38mm and was clinically palpable.

Conclusion: The absence of palpable or image detected nodes does not mean the absence of lymphatic spread. For those without palpable or imaged nodes, SLNB is still the staging investigation of choice. Proceeding to axillary dissection without SLNB in those with imaged or palpable nodes is not unreasonable.

P124. Clinical outcome and patient satisfaction after lipomodelling for revision of failed breast reconstructions: Experience from a tertiary breast care unit.

Biju Joseph, Penelope McManus

Breast Care Unit, Hull & East Yorkshire Hospitals NHS Trust, Hull, UK

Introduction: Correction of failed breast reconstructions, especially after radiotherapy, has always been an issue for oncoplastic breast surgeons. The advent of lipomodelling seems to have improved this situation. We aimed to analyse the effect of liposculpting on the clinical outcome of revision and to assess patient's satisfaction of the final result.

Method: This was a retrospective study of all patients who underwent revisions for failed breast reconstructions using lipomodelling as the main procedure. Patients were subjected to lipomodelling (most as a day case) after discussion in the clinic. Many underwent multiple sessions. Post-operatively, data was collected from the case notes and a validated patient satisfaction questionnaire was sent to each patient.

Results: Of a total of 16 patients, (mean age: 52.4 years), majority (12) had latissimus dorsi flap with expander. Over half had radiotherapy. Main causes of failure were flap necrosis (4), atrophy (3) and contracture (6) of the implant/expander. An average of 2.13 lipomodelling sessions were needed, mainly for volume replacement and contour defects. Thirteen did not have any complications; remaining 3 had only minor problems. Nine patients responded to the patient satisfaction questionnaire. All 9 (100%) felt marked improvement in the shape of their revised breast. Eight patients felt a lot better about their overall appearance and 6 were extremely satisfied with the final result.

Conclusion: Lipomodelling is a safe method for revising failed breast reconstructions. It gives very good cosmetic results and majority of patients were extremely satisfied with the final result.

P125. Heparanase and Cox-II overexpression and lymph node metastasis in breast cancer

Stephanie Gawthorpe¹, Muhammad Arif², James Brown³, Peter Nightingale⁴, Amtul Carmichael⁵

¹ Department of Histopathology, Russell's Hall Hospital, Dudley, West Midland, UK

² School of Life and Health Sciences, Aston University, Birmingham, West Midland, UK

³ Aston Research Centre for Healthy Ageing, Aston University, Birmingham, West Midland, UK

⁴ Wolfson Computer Laboratories, University Hospital Birmingham NHS Foundation Trust, Queen Elizabeth Hospital, Birmingham, West Midland, UK

⁵ Department of Surgery, Russell's Hall Hospital, Dudley, West Midland, UK

Introduction: Heparanase (HPA) and cyclooxygenase-2 (COX-2) are thought to contribute to metastasis of breast cancer by facilitating the breakdown of the basement membrane and by promoting angiogenesis. It is hypothesised that overexpression of HPA and COX-2 is associated with increased nodal involvement and poor survival even in patients with small breast cancer (less than 20mm).

Material and Methods: Immunohistochemical analysis of HPA and COX-2 expression was performed on 384 tumour samples. The small and large tumours were matched for age (within one year) and size of the tumour. The expression of HPA and COX-2 was correlated with tumour grade, lymph node status (LN), oestrogen receptor status (ER) and 10 year survival.

Results: HPA expression positively correlated with COX-2 expression (.118, $p = 0.021$) and ER status (.187, $p < 0.001$) whereas negatively correlated with tumour grade (-.152, $p = 0.003$) in all tumour samples. Additionally, HPA expression correlated negatively with tumour grade (-.213, $p = 0.001$) in large tumour samples. In small tumour samples, COX-2 expression negatively correlated with lymph node status (-.188, $p = 0.03$).

Conclusion: High expression of COX-2, but not HPA was associated with increased lymph node metastasis in small tumour breast cancer samples suggesting that COX-2 may have a role in Lymph node metastases in breast cancer. Neither HPA nor COX-2 overexpression impacted on overall survival.

The ethical approval received from the South Staffordshire Ethics Committee (Reference No: 07/H1203/70).

P126. Comparison of haematoma and seroma rates in breast surgery; does choosing diathermy over scalpel make any difference?

Glyn Estebanez, Mandana Pennick, Stephanie Raybould, Elizabeth Redmond, Claudia Harding-Mackean

Countess of Chester Hospital, Chester, Cheshire, UK

Introduction: Recent evidence has linked diathermy use to an increased incidence of seromas in breast surgery. We aimed to determine whether use of diathermy was associated with an increased rate of post-operative seromas and haematomas, requiring intervention, compared with scalpel use.

Method: Of our two consultants, one has consistently used scalpel in performing wide local excision (WLE) and mastectomy since 2004, the other used diathermy until 2009 but scalpel thereafter. From hospital records, all patients who had undergone WLE or mastectomy, between 2004 and October 2011 and subsequently had intervention for post-operative seromas/haematomas were identified and analysed. Based upon the date of surgery and which consultant undertook it, the incidence of seroma/haematoma formation in the two groups (diathermy v scalpel) was determined.

Results: 1143 breast cancer operations were performed between 2004-2011 (mastectomy = 592, WLE = 551), 61 patients required intervention

for post-operative seromas/haematomas (haematoma=41, seroma= 20). We found an increased incidence of haematomas (between 2004-2009) in post WLE patients with scalpel use versus diathermy (5% v 1%). Additionally we revealed an increase in both seroma and haematoma rates in mastectomy patients following changing of technique from diathermy to scalpel (Haematoma; scalpel versus diathermy = 14.7% v 2%, Seroma; scalpel versus diathermy = 11.7% v 3%).

Conclusion: Use of diathermy, when compared with scalpel, as the primary tool in performing WLE and mastectomy reduces the incidence of both seromas and haematomas and subsequently may reduce the rates of postoperative intervention and re-admission in breast cancer patients.

P127. Male Breast Cancer: A Single Institution Experience Over 22 years

Archie Hughes-Hallett, Masoom Muttalib
Bedford Hospital NHS Trust, Bedford, UK

Introduction: Although uncommon, the incidence of male breast cancer (MBC) is rising. Treatment pathways have remained similar to those for women over the last 20 years. We evaluated the outcomes of 19 MBC patients over a 22 year period at a single institution.

Methods: Data pertaining to patient demographics, clinicopathological features, treatment pathways and patient outcomes were retrospectively obtained from our breast cancer database and also compared to female breast cancer.

Results: Between 1989-2011 3,517 patients presented with breast cancer, of which 19 were primary MBC. In comparison to female breast cancer [figures in square parentheses]:

		MBC	female
demographics	incidence (of all breast cancer)	0.54%	99.46%
	mean age at presentation (years)	62	53
	mean follow up (months)	85	66
presentation	early T1 disease	52.00%	48.60%
	late T4 (fixed) disease	21.00%	6.00%
pathology	ductal carcinoma subtype	78.90%	73.00%
	node positive	31.60%	27.70%
	ER positive	72.20%	78.40%
treatment	breast surgery	89.50%	89.80%
	axillary surgery	63.10%	72.80%
	chest wall radiotherapy	76.20%	61.70%
	hormone therapy	72.20%	78.40%
	chemotherapy	26.30%	22.10%

The local recurrence rate was 15.8% [11.5%]. Mortality from MBC was 26.3% with death from other causes at 21%. The proportion currently alive with metastasis was 31.6% [24.3%].

Conclusion: Our small cohort reflects the rarity of MBC, which appears to present at a more advanced stage compared to women over the same time period. This could explain the higher local recurrence, longer follow-up and cancer related mortality than is seen with female breast cancer. There is a need for large prospective studies to check if the treatment for MBC can be further refined.

P128. Selective use of MRI in the investigation of primary breast cancer: how is management affected?

Lorna Cook, Debasish Debnath, Isabella Karat, Raouf Daoud, Ian Laidlaw

Frimley Park Hospital, Surrey, UK

Introduction: Although MRI scanning is considered more sensitive than mammography in the detection of breast cancer, there are concerns

that its relatively low specificity may lead to an unacceptable amount of false positive results. In our institution, MRI is used only in pre-operative investigation of selected patients. The aim of this study was to ensure that our current use of MRI is of benefit to these patients does not result in inappropriate overtreatment.

Methods: Retrospective case review of all patients diagnosed with primary breast cancer between January 2010 to November 2011 who underwent preoperative MRI scan in addition to the usual mammograms and ultrasound scans. Data obtained from case notes, radiology reports and post-operative pathology results.

Results: 26 patients met the inclusion criteria, median age 50 (range 29-75)

- Most common reasons for MRI were to exclude multifocal disease in those with lobular cancer and for lack of correlation between clinical and radiological findings.
- Treatment plans were changed from breast conserving surgery to mastectomy in 4 patients and to neo-adjuvant chemotherapy prior to wide local excision in 2 patients as a result of MRI detecting larger lesions than initially suspected.
- None of the 6 patients with additional indeterminate lesions detected on MRI were found to have further malignancies on re-imaging and biopsy.

Conclusion: Selective use of MRI in our institution is of benefit in guiding appropriate management and has not disadvantaged patients in terms of over-treatment. Several patients have however required additional imaging for indeterminate lesions.

P129. Duration of blue discolouration due to Methylene Blue dye following sentinel lymph node biopsy

Anna Cowper¹, Jennifer Smith², Kathryn Jones¹, Zahida Saad¹

¹Salford Royal NHS Foundation Trust, Manchester, UK

²Royal Blackburn Hospital, East Lancashire Hospitals NHS Foundation Trust, Blackburn, UK

Methylene Blue dye is used during sentinel lymph node biopsy (SLNB) in patients with breast cancer to identify the sentinel node(s) draining the tissue where the tumour is located. The dye stains the skin and tissue beneath with a blue discolouration which some patients find troublesome. This study ascertained the duration of discolouration in a sample of patients who had SLNB and wide local excision at Salford Royal NHS Foundation Trust between December 2009 and March 2011. Our aim was to provide patients with more detailed information about what to expect following treatment.

Patients (n=40) were reviewed in clinic or contacted by telephone to find out when the blue discolouration disappeared and asked their feelings about it. The data collected was analysed to determine the average duration and variables affecting it.

The mean duration of blue discolouration was 163 days (range 0 - 465 days). Analysis of our sample showed no relation between duration of discolouration and age of patient, smoking status or number of nodes removed.

In conclusion, we found that duration varied considerably between patients – but all patients in the study reported that the discolouration had disappeared after 16 months. Anecdotally two patients reported the discolouration disappeared following radiotherapy when given specialist massage devices to use on the skin to combat post-radiotherapy change. We have incorporated the results into our practice and can inform patients of approximate durations of staining, but accept that extending the study to include a larger sample would be beneficial.

P130. Axillary Staging: A useful pre-operative planning tool in the management of early breast cancer

Naren Basu, Tamal Ray, Chanpreet Arhi, Rodrigo Bernal, Rosie Guy, Leslie Apthorp, Elizabeth Shah

Conquest Hospital, Hastings, East Sussex, UK

Background: Pre-operative identification of a positive axilla will avoid a patient having to return for a second procedure after a positive sentinel lymph node biopsy as well hopefully reduce false-negative sentinel lymph node biopsy which may lead to under-treatment of the axilla.

Materials and Methods: We assessed consecutive patients over a 10-month period (April 2010 – January 2011) who presented with a symptomatic breast cancer. All patients underwent axillary ultra-sound at time of diagnosis by the breast radiologist, and core biopsy of any suspicious nodes. Patients referred via the national screening programme, those receiving primary endocrine treatment and those with in-situ carcinoma were excluded. Data was recorded on the pre-operative ultra-sound and biopsy results as well as the final histology following axillary surgery. Recommendations regarding type of axillary surgery were discussed in a multi-disciplinary setting.

Results: Seventy-one patients were assessed during this time period, with a mean age of 60.7 years. Primary tumour size varied from 11-48mm (mean 24mm), there were 22 grade 3 carcinomas and 17% of patients were positive for HER2. Pre-operative ultra-sound identified a positive axilla in 15% of patients thereby avoiding a second operation in 11 women. The sensitivity of axillary ultra-sound was 64% and specificity 94%. Nearly a third of the patients with a false negative axillary ultra-sound had a histological diagnosis of invasive lobular carcinoma.

Conclusions: Pre-operative axillary ultra-sound and core biopsy of suspicious lymph nodes should be considered mandatory in all patients diagnosed with invasive breast cancer. It should be used as an adjunct to formal surgical staging of the axilla by sentinel lymph node biopsy or axillary dissection. Lobular carcinomas appeared to be associated with a higher false negative axillary ultrasound rate. Accurate pre-operative staging tools as well as intra-operative techniques to assess the sentinel lymph node will reduce the number of patients returning for a second axillary procedure following a positive sentinel node biopsy.

P131. Wide local excision of breast cancer under local anaesthetic: A treatment option

Asad Parvaiz, Rob McCulloch, Jonathan Fussey, Brian Isgar

New Cross Hospital, Wolverhampton, UK

Aims: Elderly and medically unfit patients make up a small but significant proportion of breast cancer patients. Treatment of such patients can be challenging. We studied breast cancer excision under local anaesthesia (LA).

Methods: A prospective study of breast cancer wide local excisions (WLE) performed under LA from Mar 2008 to Apr 2011. Preoperative assessment included calculation of American Society of Anaesthesia (ASA) status, Portsmouth Physiologic and Operative Severity Score for enumeration of Mortality and Morbidity (PPOSSUM), mini mental state examination (MMSE) and oestrogen receptor (ER) status.

Results: 17 patients were included, with average age of 81 years (range 59 – 94 years). 10 patients had ASA grade 3 and 7 patients had ASA grade 2. MMSE range was 8-10 (average 8.75).

Preoperative PPOSSUM score predicted morbidity at 28.5 % (range 15 – 60%) and mortality at 1.8 % (range 0.1 – 6.1%). The observed morbidity was 5.8 % (one patient developed haematoma) and mortality was 0%. Size range of tumours was 13-47mm (median 26mm). 10 patients were ER negative and 7 were positive. One had involved margins needing further wider excision under LA. 100% disease free survival has been observed. The follow-up range was 8-54 months (median 39 months).

Conclusions: WLE of breast cancer under LA is a useful option. All patients in this selected 'unfit' group were treated as day cases. Excellent local control can be achieved with this technique. Patient selection should be careful; they should not be confused or agitated with good MMSE scores. Despite a relatively short follow-up, all patients currently remain disease free.

P132. Novel two-stage approach to Risk Reducing Mastectomy using breast augmentation prior to mastectomy

Suzanne Elgammal, Geeta Shetty, Julia Henderson, Andrew Baildam
University Hospital of South Manchester, Manchester, UK

Introduction: We describe a novel two-stage approach for bilateral risk reducing mastectomy (RRM) in a 39 yr old patient with proven substantial risk of developing breast cancer who wished to avoid a tissue-expander process.

Methods: The first stage consisted of bilateral dual-plane breast augmentation using permanent implants (370ml Mentor Cohesive III). Two months later the second stage was performed: bilateral RRM with wise pattern based incisions including the nipples. The flaps were raised and breast tissue was dissected down to pectoralis fascia superiorly and to the implant capsule inferiorly. The implants were left undisturbed under the thin natural capsule, and the mastectomy flaps draped down and sutured over the implant shape. Care was taken dissecting the breast tissue off the capsules using a scalpel.

Results: An uncomplicated good cosmetic outcome with risk-reduction surgery performed as per the Manchester protocol was achieved. The post-operative appearance was very satisfactory.

Conclusion: This proof-of-principle approach allowed good cosmesis with permanent implants in association with RRM. This avoided the immediate loss of volume experienced post RRM using expanders and removed the need for expansion visits. The development of the implant-associated capsule provides an autologous tissue plane covering the implant allowing safe dissection of breast tissue above this.

P133. Quilting of flaps substantially reduces seroma formation following mastectomy (MX) or axillary clearance (ANCL)

Jonathan Yu¹, Parto Forouhi²

¹Addenbrooke's Hospital NHS Trust, Cambridge, UK

²Cambridge Breast Unit, Cambridge, UK

Introduction: Seroma following breast cancer surgery causes significant morbidity. Although quilting reduces seroma formation, it is often perceived as time consuming, producing a relatively small reduction in seroma rates. We report on the impact of quilting on seroma rates in our unit.

Methods: Seromas requiring intervention were prospectively recorded in a complications register. A previous audit had demonstrated similar seroma rates for 3 surgeons. Quilting was introduced by one surgeon in July 2010. The subdermal layer of skin was affixed to underlying muscle at 1-2cm intervals with a continuous absorbable monofilament suture. Two to 3 rows of sutures per flap (including axillary flaps) were used. A third row was inserted between the two skin edges and muscle. All patients undergoing MX±ANCL or isolated ANCL in the 12 months since July 2010 were identified from theatre records and included.

Results: See Table 1

Conclusion: Quilting caused a relatively small increase in operation time, but substantially reduced seroma rates, seroma volumes and outpatient visits for seroma management.

Table 1

Number	MX			MX±ANCL			ANCL only		
	Quilted	Std	p-value	Quilted	Std	p-value	Quilted	Std	p-value
Total	12	33		30	34		18	25	
Seromas	1	17	0.014*	6	29	<0.000*	2	17	0.000*
OPD visits	1	36	<0.000*	14	81	<0.000*	2	32	<0.000*
Op time	108	100	0.76†	159	122	<0.000†	124	101	0.091†

*Fisher's exact test, †Mann-Whitney U-test, Std: Standard closure, OPD: outpatients, Op time: Mean operation time in minutes.

P134. Management of patients with a B5c diagnostic core biopsy

Ashok Gunawardene, Jevan Taylor, Fiona Hoar

City Hospital, Birmingham, UK

Introduction: The National Health Breast Screening Programme core biopsy reporting form has 3 categories for malignant biopsies: B5a for in-situ, B5b for invasive and B5c for "not assessable" although this last category is not clearly defined.

Methods: We examined those patients whose worst diagnostic core biopsy was B5c to determine whether axillary surgery was performed at the first therapeutic operation & the final histology. Patients who had a B5c core biopsy result between January 2008 & April 2011 were identified from hospital records.

Results: 27 patients were identified. The details of the B5c biopsies are shown below.

B5c Report	No cases	%
Suspicion of invasion (Group A)	15	56
Probable intracystic papillary carcinoma (Group B)	10	37
Other (1 lymphoma & 1 lung cancer)	2	7

23 patients underwent surgery and overall on final histology, 10 patients had invasive disease whilst 13 had in-situ (or microinvasive or intracystic papillary carcinoma). In Group A the rate of invasion on final histology was 50% whilst for Group B it was 33%. At the first therapeutic operation, 10 patients underwent axillary surgery whilst 13 had no axillary surgery and the percentage with invasive disease in each group was 50% & 38% respectively.

Conclusion: There is a 43% (10/23) chance of having invasive disease after a B5c biopsy. The need for axillary node surgery at first therapeutic operation needs careful discussion at the MDM to balance having unnecessary surgery versus the need for a second operation.

P135. Rates of primary mastectomy are higher in an ethnically diverse population compared to the national average in the UK.

Tom Abbott¹, Rakesh Verma¹, Louise Jones², Jason Saunders¹, Faisal Mihaimeed¹

¹Newham University Hospital, London, UK

²Barts Cancer Institute – a CR-UK Centre of Excellence, Centre of Tumour Biology, Queen Mary University of London, London, UK

The mastectomy was the 'gold standard' of treatment for breast cancer until the middle of the twentieth century. Developments in breast cancer surgery have led to a tailored approach that is pathology dependant. Current guidelines indicate mastectomy when there is multi-focal disease, the tumour to breast ratio is large or when the tumour is behind the nipple.

We aim to explore whether the rate of mastectomies carried out in an ethnically diverse region within the UK differs greatly when compared to national statistics.

Women that presented with breast cancer over 6 years to a single East London hospital were included in this retrospective analysis. Using IT

based patient records, a comprehensive database was compiled, including demographic details, pathological data, and treatments given. A diversity index used by the Greater London Authority and based on data from the 2001 Census ranks the borough that the hospital serves as the most ethnically diverse in London and one of the most diverse in the UK.

Over a 6 year period, between 2006 & 2011, 79% of our cohort received a mastectomy compared to a national rate of almost 43% for the years 1997 – 2006, as published by the National Mastectomy and Breast Reconstruction Audit in 2008.

This study has identified a higher rate of mastectomies in our patient cohort. However current guidelines for breast surgery suggest that ethnic minority groups present with a disease phenotype that requires a more aggressive management approach. We aim to examine this correlation to identify any further patterns.

P136. The intraoperative molecular analysis of sentinel lymph node metastases and micro-metastases in breast cancer patients using One Step Nucleic Acid Amplification on whole nodes

Peter Jackson, Tracey Irvine, Graham Layer, Mark Kissin
Royal Surrey County Hospital, Guildford, UK

Introduction: Intraoperative sentinel lymph node (SLN) analysis in breast cancer should be automated, concordant with histopathology and practical. One step nucleic acid amplification (OSNA), a highly sensitive validated intraoperative assay of cytokeratin 19 mRNA, is used for the detection of SLN macro- and micro-metastases in breast cancer. We present our 35 month data since introduction in December 2008.

Methods: Data was collected prospectively from 2008-11. All patients eligible for SLN biopsy were offered OSNA. A level 1 axillary nodal dissection (AND) was performed on detection of micro (+) and positive but inhibited metastases (i+), and for macro-metastasis (++) level 2/3 AND.

Results: 670 patients had 1566 SLN analysed. 72% (n=483) had wide local excision, 27% (n=182) mastectomy and 1% (7) SNB alone. 32% (n=215/670) had positive SLN and further AND. Of these, 48% (n=104/215) had macrometastases, 39% (n=84/215) micrometastases and 12.5% (n=27/215) positive but inhibited results.

Conclusion: A third of patients had OSNA positive SLN and underwent axillary surgery at the same operation. This technique eliminates the need for second operation in SLN positive patients where axillary dissection is part of their ongoing oncological management. It avoids the wait for results and streamlines the cancer journey. OSNA allows a differential approach to axillary dissection, offering a quantitative result on the burden of sentinel lymph node metastatic disease. Long term studies are needed to determine the clinical relevance of micro-metastatic disease and the relevance of non-sentinel lymph node positivity.

P137. Content analysis on breast reconstruction in the era of Internet video-sharing community

Melissa Ley-Hui Tan¹, Kenneth Lee Mun Kok², Vijay Ganesh¹, Sunil Thomas²

¹ Breast Surgery Department, Russells Hall Hospital, Birmingham, UK

² Plastic Surgery Department, Queen Elizabeth Hospital, Birmingham, UK

Introduction: Breast cancer patients or carriers for breast cancer genes have increasing expectations and choices for breast reconstruction. Patients often satisfy their information needs by YouTube. YouTube was created in February 2005 and is the largest video sharing in the world-wide-web. Decision for reconstruction is multifactor. It must not compromise oncological principles including risks of recurrence; co-morbidities; risks of potential delay in adjuvant treatment; and risks of adverse affects of adjuvant therapy. We aim to investigate the availability and analyse the content of video uploaded on YouTube relating to breast reconstruction.

Methods: A search on “breast reconstruction” uploaded on YouTube.

Results: 1500 videos uploaded, first 100 videos were analysed. Mean length of video =5mins59secs (range 00:48-58:39). Mean viewed/video =

19,397 (range 3-485,306). Nature of production: 14/100-amateurs; 86/100-professional. 18% on delayed reconstruction, 32% on immediate reconstruction, and 16% on both (34 % not mentioned). Mentioned risks of complications in 40%; 12% risks of recurrence or co-morbidities; 13 % risks of delay in adjuvant therapy; 18% risks of adverse affects of adjuvant therapy; 19% on survival rate. 51% showed aesthetic outcome. 26% mentioned contra-lateral symmetrising procedures.

Conclusions: YouTube does not provide a comprehensive risks and benefits of breast reconstruction for breast cancer patients. Patients need to be made aware that types of and choice for reconstruction should be tailored to individual to achieve the best oncological and aesthetic outcomes. An approved validated educational video on breast reconstructions is needed.

P138. Asymmetry Correction After Breast Conservation Therapy: Outcomes of Post Radiotherapy Symmetrisation Procedures

John Murphy, Mysore Chandrashekar
Royal Liverpool University Hospital, Liverpool, UK

Background: With the increase in long term survival in patients undergoing breast conserving surgery, there is increased demand for contralateral symmetrisation surgery in the non-irradiated breast. However, patients also require surgical correction to the irradiated breast to achieve satisfactory cosmesis – a problem as surgery in the post irradiated breast is labelled as an absolute contraindication. Here, we present 15 patients undergoing surgical procedures on the irradiated and non irradiated breast for symmetry.

Patients and Methods: Retrospective analysis of 15 patients identified within the Breast Unit undergoing symmetrisation procedures post radiotherapy between September 2005 and May 2010. The time interval between radiotherapy and symmetrisation ranged from 15 months to 15 years. The procedures included 8 breast reductions, 4 mastopexy, 2 augmentations and 1 augmentation – mastopexy.

Results: There were no major complications. 2 patients developed wound infections, 3 patients a degree of T-junction wound dehiscence and 2 patients had minor fat necrosis. Despite prolonged recovery, all healed with satisfactory cosmetic results.

Conclusions: Complications experienced were as expected following operating in the irradiated field. The risk of wound infection and delayed healing is increased in these patients but safety of the procedure is not compromised. Reduction, mastopexy and augmentation procedures can be completed safely in patients previously treated with radiotherapy, after careful patient selection with close follow up.

P139. Lymphovascular Invasion as a Strong Predictor of Nodal Metastasis in Sentinel Lymph Node Biopsy

Matthew Adekan¹, Kate McNamara¹, Ekta Patel¹, Sarah Cotterill², Mohammed Absar¹

¹ Breast Surgery Department, North Manchester General Hospital, Manchester, UK

² Medical Statistics Department, Hope Hospital, Salford, UK

Introduction: Sentinel lymph node biopsy (SLNB) is the standard for axillary staging with 25-30% having positive SLNB. Tumour size is the only parameter taken into consideration when determining appropriateness of SLNB, with 4-5cm being the recognised upper limit. Lymphovascular invasion (LVI) and Ki-67 are known to be important prognostic markers along with grade, oestrogen, progesterone and herceptin receptor status. This study examines whether these factors can be used as predictors for axillary lymph node (ALN) involvement.

Methods: Data was collected prospectively on 259 patients with invasive breast cancer undergoing SLNB between August 2008 and December 2010, and analysed retrospectively. Histopathology reports were reviewed to obtain tumour characteristics and lymph node status. Data was analysed by logistic regression using stats Direct.

Results: 259 patients had SLNB, of which 200 (77.2%) had negative LN status and 59 (22.8%) were positive. When variables were analysed by logistic regression, tumour size and lymphovascular score were found to be statistically significant ($p=0.01$). After adjustment, tumour size was associated with a 5% increase in the odds of have positive LN status (95% CI 1% to 9%), while lymphovascular score was associated with over a fourfold increase in the odds of having positive LN status (95% CI 200% to 900%).

Conclusion: Lymphovascular invasion is the most significant prognostic factor in sentinel lymph node metastasis. However, in the absence of LVI, factors such as size and grade still remain valuable predictors of sentinel lymph node involvement.

P140. A survey of patient satisfaction with receiving a copy of their outpatient clinic letters

Fawzia Imtiaz, Gabrielle Gascoigne, Li Min Lai, Simon Thomson
St Albans Breast Unit, Herts, UK

Introduction: The purpose of this study was to determine if sending patients a copy of their outpatient letter is useful to them.

Methods: A questionnaire was developed to assess patients' satisfaction with receiving a copy of their outpatient clinic letter. The following questions were asked:

1. Did you find having a copy of the letter to your GP useful?
2. Did you feel the content accurate?
3. Was the letter written sensitively and respectfully?
4. Did any medical jargon prevent you understanding ?
5. Are you comfortable reading medical details about yourself?
6. Did the letter provide you with any additional information to your consultations?
7. Was the letter difficult to understand because English is not your first language?

Space was left for additional comments

Answers were binary (yes/no) except in question four where options were 'a bit; a lot; no'

Results: All of the patients ($n=100$) found having a copy of their clinic letter useful. The content of the letters was considered accurate and written in a sensitive and respectful manner. More than half of all patients (54%) found the medical jargon a bit difficult to understand. The majority of patients (92%) were comfortable reading his kind of information about themselves. Interestingly 76% stated the letter provided them with additional information to that they had received or remembered from their consultation.

Conclusion: Sending all patients, who attend breast clinic, a copy of their outpatient letter is a positive adjunct to their overall care and welcomed by the majority.

P141. An Audit of the Time Interval to Radiotherapy after Breast Conserving Surgery for Early Breast Cancer

Amy Godden, Tom Fysh, Julie Dunn, Douglas Ferguson
Royal Devon and Exeter NHS Foundation Trust, Exeter, Devon, UK

Introduction: Breast conserving surgery (BCS) with adjuvant radiotherapy is an effective treatment for most women with early breast cancer. There is evidence to suggest locoregional recurrence is more likely if radiotherapy is delayed more than 8 weeks. The 2009 NICE guidelines state that adjuvant radiotherapy should be started 'as soon as possible within 31 days of completion of surgery'. This audit will determine whether this guideline is met at the Royal Devon and Exeter NHS Foundation Trust (RDEFT).

Methods: The prospectively populated Dendrite cancer database was used to identify patients who underwent radiotherapy after BCS between January 2009 and December 2010. Time interval between surgery and the start of radiotherapy was calculated and compared to the NICE recommendations.

Results: The number of patients undergoing BCS for early breast cancer was 404. Of those, 107 had adjuvant chemotherapy in advance of radiotherapy, and were excluded. The median interval between final operation date and start of radiotherapy was 65 days; date of surgery and referral to oncology 9 days; referral and first oncology appointment 20 days; first oncology appointment and start of radiotherapy 41 days.

Conclusions: The interval between BCS for early breast cancer and start of radiotherapy is non-compliant with NICE guidelines within the RDEFT. It is anticipated that improvements can be made in reducing this time interval by revising the appointment booking system and the introduction of a new radiotherapy and CT-planning suite. We suspect that delay to radiotherapy is not unique to the RDEFT and urge other trusts to carry out this audit.

P142. 'Walking in my shoes': The development of a service to enable patients to share their experience of breast surgery

Helen Ullmer, Susan Holcombe, Helen Gray, Louise Clark
Royal Liverpool University Hospital, Liverpool, UK

Background: Patients find it helpful to hear about other patients' experience of surgery when deciding about their own, and will often request to meet with a fellow patient who has undergone the same surgery they are considering. Currently there are no schemes which offer this service formally, both locally and nationally. Meetings of this nature have tended to be organised on an informal, ad hoc basis, without any training for the volunteer patient. In order to address this need, staff at the Breast Unit in the Linda McCartney Centre, Royal Liverpool University Hospital, developed the 'Walking in my shoes' (WIMS) project. The aim of WIMS was to develop a structured, effective and safe service in order to provide a formal way for patients to share their experiences of breast surgery with patients who request this.

Method: The WIMS project was developed by a multi-disciplinary staff team. Breast Cancer Care (BCC) was involved in an advisory role. We aimed to recruit volunteers with TRAM flap, LD flap and implant reconstructions. Potential volunteers were identified from surgery lists, which were screened by surgeons and breast care nurses, and patients were excluded if they were a) less than two years post-surgery and b) judged by the clinician as not appropriate to be approached (reasons included mental health/interpersonal difficulties). Eligible patients ($N = 66$) were then sent letters to ask if they would be interested in being involved. 29 opted in, and were invited to a taster evening. Those interested were invited to submit an application form. Of 18 applicants, 17 were invited for interview, and 14 were recruited as volunteers. Volunteers then attended an evaluated two-day training course developed by the WIMS team in collaboration with BCC. Trained volunteers were then matched by surgery type to patients requesting the service.

Results: All recruited volunteers attended the training days. Evaluations of the training from volunteers were positive: 93% 'strongly agree [d]' that they understood their role and felt confident to meet with a patient. Three WIMS meetings between volunteer and patient have taken place so far. Evaluation of the service is ongoing. Preliminary response from patients, volunteers and staff has been positive.

Conclusions: The WIMS project is the first formal, structured and multi-disciplinary led service aimed at providing a way for patients to speak with a trained volunteer about their experience of breast surgery. Future work will include formal evaluation of the service from both volunteers and patients. Further surgery groups, including gene carriers and mastectomy with no reconstruction, will also be recruited and trained.

P143. Breast cancer recurrence after immediate and delayed reconstruction: a single institution study**Annika Thaithongchai, Soni Soumian, Konstantinos Seretis, Radovan Boca, Victoria Rusius, Luna Vishwanath, Guy Sterne**

Department of Plastic Surgery, City Hospital, Birmingham, West Midlands, UK

Aim: The last decade has seen a remarkable shift towards offering breast reconstruction as a part of the standard treatment for breast cancer. Although literature strongly seems to endorse the oncological safety of the reconstructive procedures, concerns do remain with regard to breast cancer recurrence. As a regional referral centre for breast reconstruction, we wanted to assess the rates of local and distant recurrences in both immediate (IBR) and delayed (DBR) reconstruction in our institution.

Methods: A retrospective analysis of all IBR and DBR breasts from 2000 to 2007 with four year follow up was performed specifically assessing demographics, types of reconstruction, local and distant recurrence rates and mortality.

Results: Out of a total of 211 procedures, there were 108 IBR and 103 DBR reconstructions. There was a trend towards higher local recurrence rate in the IBR group although it did not achieve statistical significance (8(7.4%) IBR vs 3(2.9%) DBR). However the rates of distant metastases were significantly higher in the DBR group (12(11.6%) vs 5(4.6%)($p=0.012$). Eighty percent of distant metastases in the DBR group were diagnosed within an average of two years after reconstructive surgery. Four year mortality was 2.7% and 5.8% in the IBR and DBR group respectively.

Conclusion: This study has shown a significant increase in the rates of distant metastatic disease in the DBR group but no difference in local recurrence between the groups. This probably reflects the relatively advanced stage of the primary pathology in the DBR group