

also analysed exosomes from breast cancer lines which were stably transfected to overexpress CD82. These were shown to express higher levels of MHC class I, which supports previous studies showing an association between CD82 and MHC class I.

These findings show that exosomal proteins can be modified by altering cell culture conditions. This may allow optimisation of exosome targeting to antigen presenting cells, in order to stimulate a cytotoxic T cell response against breast cancer *in vivo*.

O-90. Is mammographic spiculation an independent good prognostic factor in screen detected invasive breast cancer?

Evans A, Pinder S, James J, Ellis I, Cornford E. *Nottingham City Hospital*

Objective: The aim of this study was to look at the prognostic significance of pathologic and radiologic factors for screen detected invasive breast cancers of any size.

Material and Methods: The patient group was a consecutive series of 470 screen detected invasive breast cancers diagnosed between 1988 and 1998. Data regarding tumour type, grade, maximum invasive diameter, lymph node status and the presence or absence of vascular invasion was recorded as were the mammographic features of the lesion. Survival was ascertained from hospital records and cancer registry. Differences in survival were assessed using Kaplan-Meier survival curves with log-rank test for difference. The significance of any correlations was assessed using Chi square and Chi-square for trend. Multivariate analysis used a Cox proportional hazards model.

Results: At univariate analysis, large invasive size, the presence of definite vascular invasion, high histological grade and nodal involvement were associated with poorer breast cancer specific survival. Mammographic spiculation (the presence of either a spiculate mass or distortion) was associated with more prolonged breast cancer specific survival. The presence or absence of mammographic comedo calcification did not influence breast cancer specific survival. In a Cox multivariate analysis which included those factors significant in univariate analysis, size, grade, nodal stage and mammographic spiculation maintained their prognostic significance.

Conclusion: Mammographic spiculation is an independent good prognostic factor for screen detected invasive breast cancer. The mechanism of how mammographic spiculation confers a beneficial prognostic effect is not clear.

O-91. Nipple biopsies in Paget's disease of the breast: an 8 year retrospective study

Docking R, Turner F, Krishna A, Somaynji G, Staffard S, Reid I, Smith DC. *Victoria Infirmary, Glasgow*

Background: Paget's disease of the breast is a relatively uncommon malignant process that can mimic benign diseases. It is a pathohistological diagnosis and different breast surgeons use different biopsy methods. This audit aims to assess whether there are benefits in a particular biopsy method being used.

Methods: A retrospective case audit was performed using the records of the Pathology department to gather the case records of patients who had undergone nipple biopsy over the last eight years at a Glasgow teaching hospital. The audit took into account: age, gender, presenting complaint, biopsy, biopsy result and definitive diagnosis.

Results: Over the last eight years in the Victoria Infirmary 121 nipple biopsies were performed, and of those 24 cases of Paget's disease were detected. Only two biopsy methods were used. Punch biopsies had a stronger predictive value than excision (100 v 90) but a lower negative predictive value (95 v 98.3). In seven cases overall there was more than one biopsy taken, six of these involved malignant disease. 9% of punch biopsies needed repeating compared with 1% of excision biopsies. These biopsies needed confirming with another to verify diagnosis

Conclusions: There appears no significant difference between the two main biopsy modalities in Paget's disease. Given the similar outcomes it may be postulated that punch biopsies be the first line as they can be performed in the outpatient setting with a smaller incidence of morbidity and allowing the patient to return home that day. However, punch biopsies often needed repeating and maybe more than one punch should be taken.

O-92. The frequency of breast cancer screening: results of a randomised trial

Duffy S, Blamey RW *for the Breast Screening Frequency Trial Group; UKCCCR & CRUK*

This randomised trial in 110,000 women between 1989 and 1996 compared screening at the standard interval of 3 years (Controls – C) with screening annually (Trials – T), in women aged 50–64 who had undergone a prevalent screen.

A previous analysis used the Nottingham Prognostic Index (NPI) to predict outcomes of invasive carcinoma diagnosed; these predictions were based on observed survivals in cancers prior to 1988.

However survival within each NPI group has improved, due to better therapy. Recalculation is based on these new figures of outcomes within each NPI group.

1. Predicted outcomes for, are compared with the observed outcomes at, six years:

	Invasive cancers					
	Diagnosed		Predicted surviving at 10 years		Observed surviving (actuarial) at 10 years	
	C <i>n</i>	T <i>n</i>	C <i>n</i>	T <i>n</i>	C <i>n</i>	T <i>n</i>
GPG	92	113	87	108	89	107
MPG	87	96	68	76	66	82
PPG	22	20	11	10	14	14
Total	201	229	166 (82%)	194 (85%)	169 (84%)	203 (89%)

There is good agreement between the predicted and observed 10 year survivals. Neither show significant difference between C and T groups.

2. Although in the Trial group there were more cases in the GPG and less in the PPG, this was not large enough to significantly improve survival and the absolute difference is

3–5% (Relative Risk Reduction 16–23%) less deaths in the trial group at 6 years. There were the same percentages of DCIS in the two groups.

Conclusion: 1. The use of a predictive model for outcomes is justified and prediction can now be made to 20 years. 2. There is no significant advantage to annual screening over the standard 3 year interval in the NHSBSP and shortening of the screening interval would be extremely expensive.

O-93. Does the survival of interval cancers vary according to subtype and time since previous mammogram?

Porter G, Burrell HC, Chakrabarti J, Evans AJ. *Nottingham City Hospital*

Interval cancers have been shown to have prognostic features similar to symptomatic tumours. We hypothesised that tumours arising between screens (true interval) would have a worse prognosis than tumours missed (false negative) as they may represent a faster growing group of tumours. Similarly we hypothesised that interval cancers presenting within a year of a negative screen may represent a more aggressive sub-group with a worse survival.

The study group consisted of 332 interval cancers arising after screening Mammograms between 1988 and 1/1/1998. Breast cancer specific survival was analysed according to sub-group and time since screening mammogram. 7 year survival rates ranged between 68% for false negative and 86% for occult interval cancers (true 71%). There was no statistically significant difference in interval cancer survival by sub-group. Interval cancers presenting in years 1, 2 and 3 had 7 year survival rates of 81%, 71% and 66% respectively. These were not significantly different.

Interval cancer survival is the same irrespective of sub-group and time between screening and symptomatic presentation.

O-94. Impact of 11-gauge vacuum assisted biopsy (Mammotome) on accuracy of preoperative diagnosis of ductal carcinoma in situ (DCIS)

Barkeji MM, Pain SJ, Shaw M. *Norfolk & Norwich University Hospitals*

Objective: Since the introduction of mammographic breast screening, DCIS has accounted for a significant proportion of breast cancer practice. Lesions are normally impalpable, with diagnosis being made by image guided core biopsy. Following traditional 14-gauge core biopsy, final histology after surgical excision has demonstrated invasive disease in 25–40% of cases, necessitating a second operation to clear the axilla. 11-gauge vacuum-assisted biopsy system (mammotome) allows a larger biopsy specimen to be taken, hopefully reducing the proportion of understaged cases. The aim of this study was to assess the impact of introducing mammotome biopsy on the accuracy of pre-operative diagnosis of DCIS.

Methods: Computerised records were interrogated from November 2000 (when mammotome biopsy was introduced in our institution) to October 2003. All cases of biopsy-proven DCIS were reviewed, and final surgical histology determined.

Results: A total of 728 core biopsies were prospectively recorded during this 3 years period. The mammographic indications for the biopsies are micro calcification 672, distortion 26 and mass for the remaining 30.

	Total	14g	11g
Biopsy cores	728	203	525
DCIS on core	137	45	92
Invasive disease: final histology	33 (24.1%)	17 (37%)	18 (19.6%)

Conclusion: Introduction of 11-gauge vacuum assisted core biopsy improved the accuracy of pre-operative diagnosis of DCIS. However, in 19.6% of cases final surgical histology revealed invasive carcinoma, necessitating a second surgical procedure for clearance of the axilla.

O-95. Outcome of screen-detected breast lesions with an indeterminate (B3) core biopsy

Alvi A, Ravichandran D, Pittam MP, Wright D. *Luton & Dunstable Hospital*

Aim: To study the outcome of screen-detected lesions of the breast where the initial core biopsy (CB) has been reported as “benign but of uncertain malignant potential” (B3).

Methods: All patients who underwent assessment for a screen-detected abnormality over a 5-year period in a breast-screening centre were reviewed. Those patients in whom the initial CB was reported as B3 were studied in detail.

Results: From April 1999 to March 2004, 162659 patients were screened, 6896 were recalled for assessment, 3031 underwent CB and 164 (5.4%) of these were reported as B3. Most lesions were microcalcifications ($n = 105$). Ultrasound (US) was done in 125 patients. Appearances were normal in 57, benign in 22, uncertain in 31 and suspicious in 15. No clinical abnormality was present in 71%. FNAC was done in all but one & results were as follows; C1 = 28, C2 = 85, C3 = 29, C4 = 19, and C5 = 2. Excision biopsy was done in 145 (88%) patients and the final histology showed malignancy in 48 (33%); invasive in 25 & DCIS in 23.

Conclusion: A third of screen-detected breast lesions with B3 CB are carcinomas and these lesions should undergo further sampling by excision biopsy or by other means such as vacuum assisted devices. Concurrent FNAC and US may help to identify a proportion of those patients with malignant disease.

O-96. Variations in detection rates of benign screen-detected radial scars/complex sclerosing lesions

Watkins RM, Johnson F, Castell P, Harker D, Parnham DM. *Southwest Region Breast Screening QA Reference Centre, Bristol*

Radial scars or complex sclerosing lesions (RS/CSL) usually present mammographically as a stellate distortion, often with a lucent centre. Appearances may be subtle and definitive pre-operative diagnosis, even using core biopsy, difficult. Associated malignancy may be present in 30% of screen-detected cases. Such pathology may be difficult to diagnose pre-operatively and excision biopsy is often required.