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Screen-detected cancers have a better outcome as early as five years

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Screening for breast cancer should detect earlier, smaller tumours, with consequential improvement in outcome. Although generally stated that any difference in outcome will not be manifest until ten or more years of follow-up, we set out to see if there was a demonstrable difference at five years.

Women aged 50–65 treated for breast cancer between October 1995 and September 1997 in two centres were prospectively studied. They were followed up for five years, with any death or recurrence noted. To minimise the effect of lead-time bias, screen-detected cancers were compared with symptomatic cancers of identical stage. Results were analysed using *chi*-squared test, and Kaplan-Meier survival curves.

483 women were treated for breast cancer, 374 were screen-detected, and 109 presented symptomatically. There was a greater proportion of in-situ disease in the screen-detected group ($p = 0.000$). For patients with invasive disease, we also found that screen detected tumours were smaller ($p = 0.000$), more node negative ($p = 0.000$), and less aggressive histologically ($p = 0.000$). When matched for stage, there were more patients alive with no recurrence in the screen-detected group for most subsets. This was supported by analysis of survival curves which demonstrated that mode of presentation influenced outcome, with patients presenting symptomatically having a greater chance of death ($p = 0.004$) and recurrence ($p = 0.02$) within 5 years.

Our study suggests that screening does detect smaller, less aggressive tumours; however screen-detected cancers have a better prognosis than symptomatic cancers of a similar stage. This indicates that the mode of presentation is a predictive factor which should be borne in mind in deciding the appropriate treatment.

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The quality control of screening mammography

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In the context of the organised breast cancer screening programme in Belgium, a control of the quality of mammograms has been organised.

This control was based on the European guidelines for quality assurance in mammography screening (European Commission). Thirty consecutive negative mammograms were tested at each mammography unit. Eight items were analysed, concerning breast positioning and photo-technical quality (:compression, exposure and lack of artefacts). Positioning items analysed at the mediolateral oblique view (MLO) were: pectoral muscle to nipple level, inframammary angle clearly demonstrated, nipple in profile. At the cranio-caudal view (CC), the pectoral shadow must be shown in 20% of mammograms. The distance between nipple and pectoral must be the same in MLO and CC views. To succeed the test, the required score must be reach for each of the items.

The results were disappointing: Only 40% of tested units succeeded. Inadequate positioning, particularly for the inframammary angle, was the most frequent reason for failure. Thirty one per cent failed for an incorrect positionning, 25% failed for excessive artefacts and 44% failed for both reasons.

Therefore, we organized a theorical and practical formation for radiologists and radiographers. Correct positioning was teached as well as correcte compression and exposure. How to avoid artefacts was also explained.

This training and the awareness of the need to reach those quality items has had an impact on the mammogram's quality.

Indeed, at a test organised for the units who failed, seventy five per cent of those succeeded. Positioning much improved and artefacts became scarcer.

Training in quality and control are mandatory to obtain high quality screening mammography.

Wednesday, 22 March 2006 16:00–16:45

POSTER SESSION

Detection, diagnosis and imaging

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Imprint cytology of core needle biopsy specimens in a one-stop breast clinic: an accurate, reliable and useful method of evaluating breast lesions

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Aims: In many 'one-stop' breast clinics, core biopy has become the dominant method for diagnostic breast sampling. One of the downsides of this technique is that it takes a significant time to formally analyse this 'core' tissue and a histological diagnosis cannot be made on the day of assessment. Touch imprint cytology of the tissue cores may, however, provide a solution to this problem as it can potentially return a cytological diagnosis within an hour or so from biopsy. The aim of this study therefore, was to determine the diagnostic value of touch imprint cytology of core needle biopsy specimens and its accuracy in predicting the final histological result.

Methods: 14-gauge needle breast core biopsies were taken with an automated hand-held biospy gun. Lesions were sampled either under ultrasound control, or clinically. Immediately on biopsy, the tissue cores were rolled on a glass slide in order to obtain a cellular imprint. Half of the imprints were air-dried and stained with May-Grunwald-Giemsa and half were fixed immediately in absolute alcohol and stained with Haematoxylin and Eosin. The tissue core was then embedded in paraffin and serially sectioned for histopathological analysis in a conventional manner. Cytological reporting was undertaken independently of histological reporting. The imprint cytology results were correlated with the histology of the core biopsy.

Results: Between the years 2000 and 2005, 'imprints' were obtained from 820 consecutive core biopsy specimens. Adequate cellularity was obtained in 778/820 of these imprints (94.8%).The 778 lesions analysed included 432 malignancies and 346 benign lesions. The overall concordance between the imprint cytology result and the final histology was 95.5%. The overall diagnostic sensitivity for imprint cytology was 97.7% and the specificity was 94.2%. In this study, the positive predictive value for core imprint cytology was 93.1% and the negative predictive value was 98.1%.

Conclusions: Imprint cytology of core biopsies appears to be a useful and reliable technique. It gives accurate and rapid results and may be used effectively to minimise diagnostic waiting times in the 'one-stop' breast clinic.

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Tumor characteristics and detection method in the MRISC screening program for the early detection of hereditary breast cancer

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Introduction: The MRISC study is a Dutch multicenter prospective study for MRI screening in women with a familial or genetic predisposition for breast cancer (BC). Participants were screened by a 6-monthly clinical breast examination (CBE) and yearly MRI and mammography (XM) with an independent evaluation. We previously concluded that the MRISC screening scheme could facilitate early BC diagnosis in women with a hereditary risk. MRI was a more sensitive screening method than XM in this screening, but less specific. In the current study we investigate the role of MRI in the early detection of BC by presenting the number, percentage and characteristics of tumors detected by MRI and missed by XM and CBE.

Material and Methods: From November 1999 to October 2003, 1909 women, aged 19 to 72 years, were included in the MRISC study. The median follow-up was 2.9 years. Forty-five of 50 BCs detected were