A new breast screening programme – an audit of the first year

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Summary: The experience of a new breast screening unit is reported. In the first 12 months there was a 72.1% response rate with 9890 women being screened. After the initial screen 598 (5.8%) were referred to the Assessment clinic. Following repeated mammography and clinical examination 166 patients were referred for a surgical opinion; 105 (1.06% of the total screened) were considered to be possibly malignant; 61 further patients with clinical and mammographically benign disease were kept under review by a single surgeon; 101 patients had excision biopsies; 28 of 32 palpable breast lumps and 36 of 69 non-palpable lesions proved to be malignant.

Introduction

Following the Forrest Report's proposals,¹ breast cancer screening commenced in the North Staffordshire district in March 1988. The Hanley breast screening unit (Stoke on Trent) serves a population of 38,000 women aged between 50 and 64. This short communication reports an audit of the first 12 months screening in terms of the compliance rate, histological type and number of carcinomas detected and the benign to malignant ratio of surgically excised impalpable lesions.

Patients and methods

After identification from the family practitioner committee (FPC), 13,720 women were invited to attend for screening over a 12 month period; 9890 (72.1%) responded to the invitation and underwent single view oblique mammography. Of this number 598 (5.8%) were considered to have mammographic abnormalities which warranted recall for further X-ray views and clinical examination in the screening unit. All mammograms were assessed by one consultant radiologist (MDS) who has been allocated 2½ sessions per week for breast screening (Figure 1).

Following repeat mammography and clinical examination, 166 women were referred for surgical assessment, with the remaining 164 women being

recalled for early repeat screens at between 6 and 12 months. A surgical opinion was provided by a single consultant (JCG) who personally conducted clinical follow-up when deemed necessary. In 61 patients a combination of mammographic and clinical examination suggested the presence of benign disease which was continued under surveillance in the surgical assessment clinic.

In 105 patients a presumptive diagnosis of carcinoma was made (33 palpable and 72 non-palpable lesions); 101 patients were admitted for surgical biopsy. Three patients were found to have widespread malignancy, two with non-palpable mammographic abnormalities and one with a palpable tumour. One further patient with a clinically obvious carcinoma refused to consider surgery although aspiration cytology confirmed the diagnosis. These four patients were treated palliatively and are excluded from further discussion.

After biopsy 28 of 32 palpable lesions were histologically confirmed to be malignant. Sixty-nine impalpable lesions were biopsied after mammographic localization and 36 (52%) were shown to be malignant on histological examination. A pickup rate of 6.6 carcinomas per 1000 women screened was therefore achieved in the prevalent screen. Five of 36 impalpable tumours (14%) presented with intraduct carcinoma only. The histological diagnoses of all impalpable benign lesions localized by 'marker biopsy' are shown in Table I and the main types of impalpable carcinomas in Table II.

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Figure 1 North Staffordshire Breast Screening Programme – the first year.

Table I Nature of benign biopsies after radiographic localization

Fibrocystic disease	14
Fibroadenoma	7
Duct ectasia	4
Fibrocystic disease + epitheliosis	3
Fibrocystic disease + lobular hyperplasia	1
Epitheliosis + lobular hyperplasia	1
Radial scar	1
Atrophy + periductal fibrosis	1
Organized thrombus	1
Total	33

Comment

There has been considerable argument regarding the efficacy of breast screening by mammography.²⁻⁵ Our purpose in this report is not to add to this debate, but to record an audit of the first 12 months' experience after institution of screening in a busy district general hospital.

In the first year, the targets proposed by the Forrest report have been attained. There was a compliance rate of more than 70% and a malignant to benign ratio of more than 1:2 after biopsy of impalpable lesions. The prevalent screen has identified more than 6 carcinomas per 1000 women.

As all patients with operable breast carcinoma referred from general practitioners in this region are treated in a single hospital centre, any false negatives following screening can be identified once the diagnosis of carcinoma is made. Since the introduction of screening, a regular check of all breast specimens showing carcinoma has been carried out to determine whether the patient has undergone mammography in the Hanley unit. Following the first year's screening, three patients have been identified subsequently where this had occurred. Regular combined meetings with all disciplines to audit these results have been found useful.

Table II Impalpable carcinomas

Main type	+ Intraduct	
Ductal	22	12
Lobular	3	2
Tubular	3	3
Ductal + Lobular	2	1
Ductal + Tubular	1	0
Intraduct	(5)	5
Total	36	23 (63.9%)
Mean size 1.28 cm (0.3–2.5 cm)		

Data retrieval and subsequent analysis proved to be an unexpected problem. This unit was one of the first to begin screening following the Forrest Report and data was entered on a mainframe computer in the screening centre using a manual system. At that time software was not readily available which would allow easy access to the computer records to facilitate simple statistical evaluation. This report has therefore been compiled using paper records. The software has since been updated with an operational system and a report generator. This should allow easy access and data retrieval so that 'real time' statistics may be produced at any given point.

The additional workload imposed on a single consultant surgeon after screening a population of 38,000 women did not present a major problem. An average of 2 further breast biopsies per week did not disrupt the operating schedule and the breast

assessment clinics have been absorbed or run concurrently with previous general surgical out-patient sessions.

Conclusions

It is possible to achieve targets proposed by the Forrest report both in terms of compliance with screening and accuracy of diagnosis after biopsy. User friendly methods of data recall from computer files are required in all screening centres to allow ongoing assessment and encourage the necessary maintenance of enthusiasm in those accepting responsibility for screening. It is not yet possible, of course, to determine whether a successful screening programme in this region will alter the mortality rate from carcinoma of the breast.

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