

The Early Diagnosis of Breast Cancer — A Twenty-Year Experience at The Royal Marsden Hospital

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Over 30 000 women with minimal symptoms were examined between 1968 and 1987 for the detection of early stage breast cancer. Subsequent follow-up screening was selected for women at higher risk because of family history, previous significant benign breast change (e.g. epitheliosis) and hormone replacement therapy. 552 cases of cancer were diagnosed and the current prevalent detection rate is 8.5 per 1000 women examined. Incident cancer (screen-detected and interval) occurred in 6.2 per 1000 women-years at risk. Of the prevalent cancers, 47% were in early T stages of development (TIS, T0 and T1) and this proportion rose to 70% in the screened group. Survival is stage-dependent but the group has not reached its median survival at 15 years. Actuarial estimates of the percentages surviving at 10 years are 73% in the prevalent group and 80% in the incident group. *Eur J Cancer*, Vol. 28A, No. 4/5, pp. 911-916, 1992.

INTRODUCTION

IN 1987 the National Health Service in the UK adopted the recommendations of the Forrest Committee for breast cancer screening by mammography in women aged 50-64 [1]. In 1968 a clinic devoted to the early detection of breast cancer in women without symptoms or with minimal symptoms began work at the Royal Marsden Hospital. This clinic was originally called the Early Diagnostic Unit, and more recently became the Breast Diagnostic Unit. Over 30 000 new subjects have been examined clinically and this examination has been complemented by imaging techniques which have included: X-ray mammography with xerox and film techniques, thermography and, recently, ultrasound. Tissue diagnosis has been achieved by fine-needle aspiration cytology and confirmed, when necessary, by histological examination following biopsy.

Diagnosis has been achieved with a multidisciplinary team approach; the importance of regular review meetings and of the assessment clinic has been stressed. The methods used to avoid excessive benign biopsy are described below.

Women were referred by their general practitioners to the clinic when a diagnosis of cancer was considered unlikely or uncertain. Patients with clinically apparent breast cancer were referred direct to surgical teams. Referring general practitioners were encouraged also to send women with a family history of breast cancer, particularly in the maternal line; women with a history of a benign biopsy revealing premalignant features (epitheliosis with or without atypia, intraduct papillomatosis, etc.) and women with breasts difficult to assess by clinical

examination. These latter women had symptomatic nodular breasts, with and without cystic change.

SUBJECTS AND METHODS

In the first screening period (1968-1981) the population of women attending the unit was heterogeneous: most came to the clinic with symptoms of breast disease whilst others came for screening (usually because of a close family history). An initial history relating to breast symptoms, previous breast disease, menstrual status and pregnancy experience was recorded. General health (or illness) and medication were noted and all women had a clinical breast examination. Nursing Sisters have played an important role in the clinical examinations made at screening visits. Also, they taught women self-examination and "breast awareness". They have run breast screening courses on clinical examination for nurse specialists.

At the outset, the unit had a major interest in thermography as a screening tool and all women were examined at 19°C, after 10 min cooling, unclothed from the waist up. The results of thermographic examination of women with breast disease from this unit have been reported [2].

Between 1968 and 1971, selected X-ray mammography was carried out using a tungsten target source and the mammographic film then available. Between 1971 and 1986 all mammograms were performed using the xero-mammographic technique; in general lateral xero-mammograms were taken in the negative mode and the cranio-caudal view in the positive mode. Since 1986 xero-mammography has been abandoned in favour of film screen mammography.

Fine-needle aspiration cytology has been a standard diagnostic test since 1975 in those women considered for biopsy; it has been used extensively by doctors and nurses to support a benign diagnosis and avoid biopsy, or to raise the degree of suspicion such that histological biopsy became necessary. All investigations were reported with knowledge of clinical findings and therefore the sensitivity and specificity of individual tests was not known.

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This paper was presented at the EORTC Breast Cancer Working Conference, 3-6 September 1991, Leuven, Belgium.

Received and accepted 13 Dec. 1991.