

# BREAST CANCER

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## INTRODUCTION

Breast cancer is the commonest malignancy affecting women in the Western world. Approximately one in twelve women in the UK will develop breast cancer and there are few families which remain untouched by this disease. Women who die from breast cancer lose, on average, about eight years of life. The diagnosis of breast cancer is often emotionally charged perhaps more than any other malignancy. This may arise from the wealth of information or misinformation available in the media, coupled with the fear of the treatment traditionally recommended. The high prevalence and public profile of breast cancer ensure that management of breast cancer is at the forefront of planning for cancer services. In this article I will take the reader through the days and weeks following the diagnosis, through treatment and into the years following the development of breast cancer. Areas of recent change are emphasised and it is inevitable that some of the observations will be personal and contain a bias towards local services.

## THE PRESENTATION

Since the advent of the National Health Service Breast Screening Programme in 1988 some women with breast cancer are diagnosed by screening mammography whilst asymptomatic (Figure 1). Other women may have a mass in the breast detected during routine examination by a health professional. However the majority of women with breast cancer present with symptoms of one of the following:

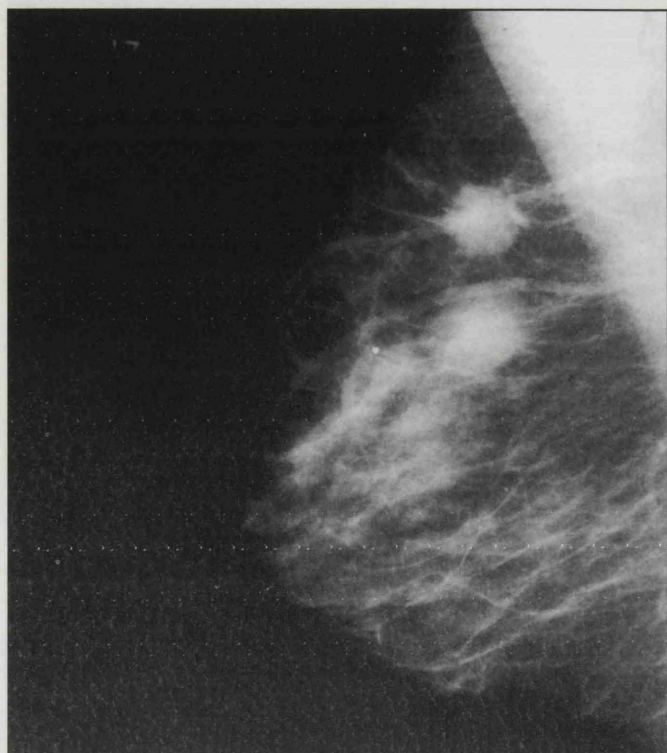


Fig. 1 – Stellate lesion on screening mammogram suggests malignant lesion within the breast

Lump

Change in contour of the breast

Nipple excoriation

Breast pain

Nipple discharge

Upon discovery of a new breast symptom most women will consult their general practitioner (GP) within a few days. The decision to refer to a specialist can be difficult and I would recommend the guidelines published by NHS Breast Screening Programme<sup>(1)</sup> (Figure 2). Unfortunately breast cancer may arise in early life and young women should be investigated appropriately to exclude the diagnosis. It is entirely reasonable to refer to a specialist for reassurance, but it is useful if this is stated plainly.

The time from the discovery of symptoms to diagnosis is usually accompanied by high anxiety and must be kept to a minimum. Appropriate referral should be brisk and be acted upon by the offer of an early hospital appointment. Following subspecialisation within the Department of Surgery, patients with breast symptoms will be seen in Lancaster or Kendal by Mr Morgan or myself.

### Lump

Any new discrete lump  
New lump in pre-existing nodularity  
Asymmetrical nodularity that persists at review after menstruation  
Abscess  
Cyst persistently refilling or recurrent cyst

### Pain

If associated with a lump  
Intractable pain not responding to reassurance, simple measures such as wearing a well-supporting bra, and common drugs  
Unilateral persistent pain in post-menopausal women

### Nipple Discharge

All women aged 50 and over  
Women under 50 with:  
Bilateral discharge sufficient to stain clothes  
Blood stained  
Persistent single duct

### Nipple retraction or distortion nipple eczema

### Change in skin contour

Fig. 2 – Conditions that require referral to a surgeon with a special interest in breast disease (after Austoker et al, Guidelines for referral of patients with breast cancer, published by the NHS Breast Screening Programme 1995)

## THE DIAGNOSIS

Fourteen out of fifteen women seen in Breast Clinics have benign disease. This will be determined on clinical, radiological, cytological and sometimes histological grounds. The anxiety of women with benign breast disease should not

be underestimated. With appropriate reassurance by the surgeon, breast care nurse and GP the anxiety may be lessened and normal life for the patient is resumed.

Women with a discrete lump in the breast will undergo fine needle aspiration to exclude cystic disease and for cytological diagnosis. In addition, imaging in the form of mammography or ultrasonography is performed. A small proportion of women will require core biopsy in the clinic, or open excision biopsy for diagnosis. Women presenting through the screening programme may require open biopsy using a localisation technique to guide the surgeon to the impalpable lesion (Figure 3). It should be possible to obtain a diagnosis of breast cancer within one month of presentation to the patient's GP. Often this is possible in a much shorter time.

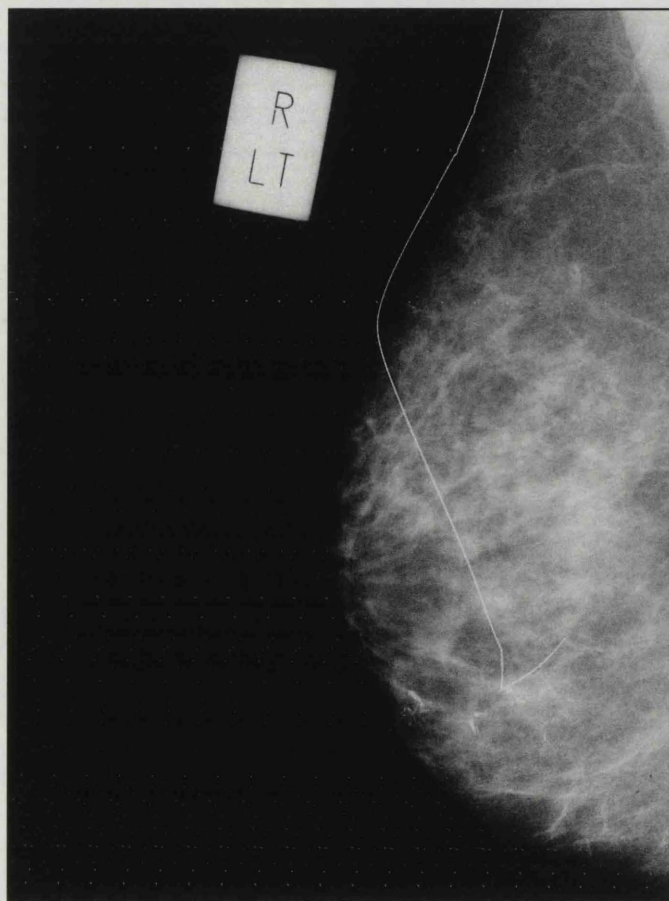


Fig. 3 – Needle localisation technique used to mark a suspicious area of microcalcification prior to surgical biopsy

### Communicating the diagnosis

Although it is sometimes possible to alert the patients to the possibility of breast cancer, it is usual for the patient to be shocked, numbed and distraught at this consultation. Gentle honesty, empathy and answering of questions can only go part of the way to alleviating the pain of this consultation. This is the time that it is beneficial for a breast care nurse to be present so that she can continue to support the patient over the next days. The patient's partner has a important role to play but may be very upset and require support also.

This consultation cannot be rushed. The confidence of the patient in the breast care team is vital if she is to obtain maximum support over the next months. From hospital we should inform the GP about the diagnosis as soon as possible, since many patients will return to the practice for further

information and support.

Some surgeons communicate diagnosis to the patient over the telephone in order to shorten the waiting time. On balance, I think a personal consultation is probably preferable.

### THE TREATMENT

It is useful to set out the goals of treatment. As I see it they should be:

- 1 To effect a "cure" (ie to prevent any further overt problems from breast cancer)
- 2 If the above is impossible, to provide treatment with maximum survival advantage
- 3 If cure is impossible, to prevent local recurrence of tumour
- 4 To provide psychosocial support for the patient and her family
- 5 To maintain the confidence of the patient and her family
- 6 To maximise the normality of the patient's body image

Over the past two years specialists have been urged to formulate and adopt guidelines for the treatment of breast cancer. These can be used for most patients' care, but freedom exists to be flexible when individual circumstances indicate otherwise. Rather surprisingly, there remains considerable disagreement over treatment, which may explain the variation in results of breast cancer treatment across the UK.

### Surgery

- i Surgery is usually the primary treatment. *In situ* carcinoma is treated by complete local excision if localised, or occasionally simple mastectomy if widespread throughout the breast. The role of adjuvant hormonal or radiotherapy for *in situ* carcinoma remains unknown and is the subject of a national trial in which we are participating.
- ii Invasive carcinoma may be treated by local excision with breast conservation or mastectomy. The criteria for each treatment is set out in Figure 4. About 50% of women will have a genuine choice of breast conservation or

**Complete local excision** may be considered if the following criteria apply:

- The tumour is 2 cm or less diameter
- Peripherally situated in the breast
- Breast of adequate size to obtain clearance
- Histological grade 1 or 2
- No lymphatic or vascular invasion

**Mastectomy** will be advised if the following criteria apply:

- The tumour is greater than 2 cm diameter
- Centrally placed in the breast
- Small breast
- Histological grade 3
- Lymphatic or vascular permeation

Fig. 4 – Selection criteria for the primary surgical treatment of breast cancer (local guidelines Lancaster and Kendal)

mastectomy. The former is combined with postoperative radiotherapy but is associated with a better perception of body image. There is evidence that long-term anxiety may be greater in women treated by breast-conserving surgery. This may be related to a feeling of being undertreated by breast-conserving surgery and this option should be discussed carefully. If there is a choice, the patient must feel comfortable with the option chosen.

We also perform a surgical clearance of the axilla for invasive carcinoma. This stages the disease accurately and allows adjuvant therapy to be decided. It also treats the axilla, which is involved in about 40% of patients at presentation. This is offset against the unnecessary morbidity (mild lymphoedema and/or intercostobrachial neuralgia) that may occur in 60% of patients who have no malignant disease in the axilla.

Women who undergo mastectomy may wish to consider a breast reconstruction. This will be discussed prior to primary surgery since some women may desire simultaneous reconstruction. Most patients will be preoccupied with the diagnosis and will consider delayed reconstruction after six months. However, there are few contraindications to immediate reconstruction if the patient is enthusiastic.

### Hormonal therapy

The oestrogen receptor agonist Tamoxifen remains the drug of choice for invasive breast cancer. It is used in all women and is currently recommended for five years. The survival advantage from Tamoxifen is about 2-5% after five years and is probably confined mostly to women with tumours that are oestrogen receptor positive.

### Chemotherapy

There is a survival advantage to premenopausal women with stage 2 disease (involved axillary lymph nodes) treated with chemotherapy. This appears to extend into the perimenopausal period, although it lessens with increasing age. Standard treatment is with cyclophosphamide, methotrexate and flurouracil over six months, but many patients are entered with their consent into prospective randomised trials of other chemotherapeutic agents.

Chemotherapy may occasionally be used prior to surgery (neo-adjuvant therapy) for aggressive tumours such as inflammatory carcinomas. Most patients receiving chemotherapy do so in the six months following primary surgical treatment.

### Radiotherapy

Radiotherapy is used as an adjuvant to breast-conserving surgery to reduce the chance of local recurrence. Without radiotherapy, breast conservation carries a risk of local recurrence as high as 35%. With adjuvant radiotherapy and adequate surgery the risk of local recurrence is 7-12% (ie about the same as mastectomy alone). In addition, there is some evidence emerging that radiotherapy may provide a small survival advantage. Radiotherapy to the axilla is not used since surgical clearance makes radiotherapy unnecessary and it carries a significant morbidity.

With several treatments to discuss it is often necessary and desirable to discuss treatment on several occasions before a final decision is reached. Once again the role of the breast care nurse is vital since she can meet the patient in her own

home and answer questions that arise. This allows the patient to begin treatment with full knowledge and understanding of the modalities to be used.

Figure 5 gives an idea of the surgical treatment used locally. Approximately 40% of patients locally are treated by breast-conserving surgery. This is rather less than many other centres and probably reflects the effect of distance from the radiotherapy centre in patients' choice of treatment. Eighteen percent of all patients with invasive cancer in this audit received chemotherapy.

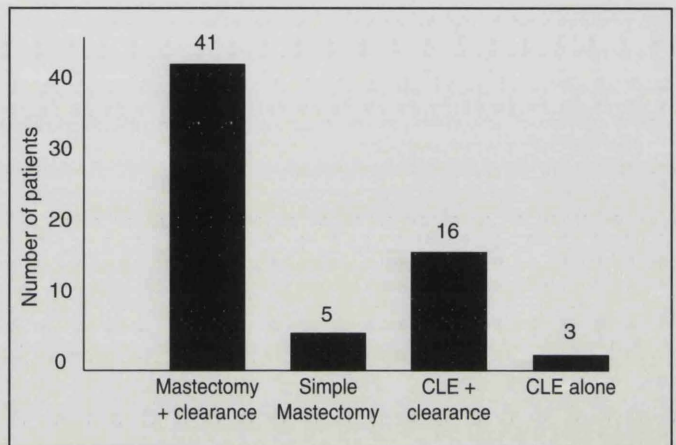


Fig. 5 – Primary surgical treatment of 65 consecutive patients with invasive breast cancer treated over six months in Lancaster and Kendal (CLE = complete local excision)

Following surgery, adjuvant therapy is decided when histology is available. The discussion of histology results represents the next psychological hurdle for the patient. All patients with invasive disease will receive Tamoxifen. If the tumour involves the axilla, shows vascular or lymphatic invasion, or is poorly differentiated adjuvant chemotherapy may be considered.

The weeks after surgery involve continued adjustment for the patient. Following mastectomy there may be problems coming to terms with body image. Breast prostheses are not always easy to use. Wound problems and seromas need treating. Radiotherapy and/or chemotherapy may have to be organised. Drugs may need to be changed. The breast care nurse, GP and specialist all have an important role providing education, support and empathy in this difficult period for the patient.

## FOLLOWING TREATMENT

The diagnosis of breast cancer usually takes a long time to fade from the foremost thoughts of the patient. It is probable that it will never completely disappear but the patient can be reassured that it will gradually become less encompassing and life will regain some normality.

### Clinical follow-up

The role of the physician in follow-up is controversial. We can continue to reassure when there is no evidence of recurrent disease. But can we actually perform any useful role after the primary treatment whilst the disease is in remission?

Conventional clinical follow-up involves questions regarding new breast symptoms and bone pain. Examination

of the breasts, axillae and chest wall may detect recurrent disease. I do not recommend routine imaging or blood tests other than mammography as described below. Symptoms of bone pain, dyspnoea, vomiting or headache may suggest metastatic disease and indicate appropriate imaging. However, women with early breast cancer have a less than 5% chance of overt relapse at five years. In addition, evidence suggests that most women presenting with recurrent disease do so between routine consultations. It would seem sensible to concentrate our follow-up on women who have more advanced disease where the need for treatment alterations is greater<sup>(2)</sup>. Dr Lavelle has described in her article our proposals for the follow-up of women with early breast cancer.

### Mammography

Women who have a personal history of breast cancer should continue to be screened for recurrent disease in the affected breast and new primary disease in the other breast. The optimum interval for mammography is uncertain. We suggest annually following conservation surgery and two-yearly following mastectomy. How long one should continue to screen in this way is guesswork at present.

## DISEASE RELAPSE

Sadly, some women will relapse. Breast cancer often has a long natural history and women may develop recurrent disease twenty or more years after initial diagnosis. The treatment of relapsed disease is complex and beyond the scope of this article. However, control of symptoms is paramount. Slowing of disease progression with second line hormonal therapy such as the aromatase inhibitor anastrozole (Arimidex<sup>®</sup>) may confer a survival advantage. Chemotherapy, radiotherapy and surgery may be required to provide an improved quality of life during palliative care.

## FUTURE PROSPECTS

### Improving survival

The introduction of the NHS Breast Screening Programme offers a real hope that malignant disease will be detected at an early stage when cure may be possible. Results from earlier programmes suggest an overall improved survival, but we will have to wait another five or ten years to see real benefits in the UK. The detection of premalignant *in situ* disease offers another avenue of hope. It should be possible to effect a biological cure in such patients by adequate surgery alone, although the benefit of adjuvant therapy is still to be determined.

Chemotherapy offers a survival benefit to a defined group of patients. This group may be extended as controlled clinical trials elucidate other regimes. In addition, aggressive chemotherapy with stem cell rescue may offer hope to patients with biologically aggressive tumours.

Perhaps the greatest advances may come from an improved knowledge of the biological behaviour of breast cancer. If one considers the reasons why a micrometastasis should become active after many years the delicate equilibrium between the tumour and body tumour defences becomes apparent. What triggers the growth of such micrometastases? Why does the incidence of recurrent breast cancer peak at three years, then fall, and peak again at seven years? What is the role of surgery in the activation of micrometastases? With greater knowledge of the science of breast cancer clinicians may be able to plan and perform better treatment.

### Improving life after the diagnosis of breast cancer

Mastectomy is a mutilating operation. It may be possible to treat patients with moderate sized tumours with breast-conserving therapy by immediate tissue transfer procedures. Patients who require mastectomy may be treated more freely with immediate breast reconstruction.

Treatment of the axilla is often performed surgically when the axilla is free of overt disease. Techniques to improve preoperative and perioperative assessment of the axilla may reduce the number of "unnecessary" axillary clearances. It should be recognised, however, that there is a feeling that "routine" axillary clearance may be associated with improved survival, although this is as yet unsubstantiated.

Perhaps the most any health professional can do for a woman with breast cancer is to treat her with honesty and empathy and to be aware of the individual needs of each patient during the weeks surrounding the diagnosis and treatment.

## REFERENCES

- 1 Austoker J, Mansel R, Baum M, Sainsbury R, Hobbs R, Guidelines for referral of patients with breast problems. NHS Breast Screening Programme
- 2 Guidance for Purchasers. Improving Outcomes in Breast Cancer: The Manual NHS Executive