

Medicine for Managers

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Cancerous Breast Lumps

Breast cancer is the commonest cancer in women and most cases occur over the age of fifty. Last week I reviewed the changes which may occur in a breast. In a majority of cases the changes are benign (harmless) but in some they are sinister. The former Professor of Surgery at Addenbrookes Hospital said “no woman should have a (undiagnosed) lump in the breast. His advice is still correct.

Breast changes with malignant disease may present in the same way as benign changes. They may include changes in breast size or shape, alteration in skin colour or appearance, bleeding or discharge from the nipple or breast pain unrelated to the menstrual cycle.

The development of breast cancer is not fully understood but there are risks that undoubtedly increase the risk of developing the disease. Eight out of every ten cases occur in post-menopausal women (aged over 50) and 5-10% of cases are associated with the genes BRCA1 and BRCA2. Other genes may also be involved.

These genes are passed from parent to child. There is a higher risk of breast cancer if a close relative has suffered breast or ovarian cancer and, if two close relatives

have had breast cancer under age 50, you may be considered for genetic screening. Other factors which may have an influence are being fat, being tall and the risk in moderate to heavy drinkers is increased by around one-and-a-half percent.

The use of oestrogen hormones (including in HRT) and radiation in, for example, medical investigations or chest radiotherapy, may also add to the risk.

Any woman with breast changes of the sort described should be referred to the breast clinic under a two-week rule for assessment. Clinics are now very efficient at consulting, investigating and making diagnoses and many operate a ‘one-stop shop’ service.

A woman presenting at the clinic would have blood tests and a mammogram and/or

an ultrasound scan depending on the presentation and the age of the patient (mammograms are less valuable below the age of 35). In younger women an MRI scan is commonly performed.

However, under normal circumstances a biopsy is required. The sample may be obtained using a large needle inserted into the area under investigation and the tissue sample is withdrawn. The biopsy may be taken in conjunction with a scan to identify the correct area for testing. Alternatively a small surgical operation may be carried out to obtain the sample.

The specimen is then subjected to histological examination to identify accurately the nature of the tissue removed.

The appearance of the cells under the microscope, if malignant, will give an indication of whether the tumour is slow growing or more aggressive.

Essentially slow-growing tumours are composed of cells which look similar to the normal breast cells whereas fast-growing tumours may appear much more abnormal and sometimes entirely different from the breast cell.

If the initial tests reveal a malignancy, it is then necessary to **stage** the tumour. The

staging indicates the size of the cancer and whether and where it has spread. This is important because it will dictate the type of treatment which is most appropriate.

A tumour completely confined within the duct of the milk glands is *Stage 0*. *Stage 1* is an isolated tumour less than 2 cm diameter with no spread. *Stage 2* is a tumour between 2-5 cm diameter or with spread to axillary lymph nodes or both. *Stage 3* is a tumour 2-5 cm diameter with invasion into surrounding tissues with axillary node involvement. *Stage 4* is a tumour of any size with metastatic spread to other parts of the body. Each stage has subdivisions to give a detailed description of exactly the progress of the disease.

The system is the T (Tumour size), N (Nymph Node spread) M (Metastasis) classification.

Once diagnosed, the proposals for management of the disease will be largely influenced by the nature, distribution and degree of advancement of the tumour. The first thing to happen will be careful explanation of the findings, the options for treatment, the prognosis (anticipated prospects for success) and any other relevant factors involved with the disease with the patient and wherever possible, with a husband, partner, close relative or friend.

The news will be shattering, even if suspected and coming to terms with the consequences of the diagnosis may require considerable support.

Once a treatment plan has been agreed with the patient and any further investigations completed, therapy will start.

The first line may be chemotherapy of treatment with hormones.

Chemotherapy is the treatment of cancer cells with drugs that destroy them. The treatment may be used to shrink cancers prior to surgery or to 'mop up' remaining cells after surgery or combined with radiotherapy. The treatment may be with a cocktail of different drugs, usually given by slow intravenous injection as an outpatient.

There may also be oral therapy. The treatment sessions are spread every 2-3 weeks to allow recovery between pulses. However, the disadvantage of treatment is often the side effects.

The drugs attack the rapidly dividing cancer cells but other rapidly dividing body cells are also vulnerable, notably gut, skin, hair and reproductive cells.

Common side effects are therefore loss of appetite and diarrhoea and sickness, hair loss, skin problems, infections and tiredness occur. The effects on normal tissue are

usually reversible after the conclusion of therapy.

Hormone Therapy depends on the fact that about seven out of ten breast cancers have oestrogen receptors and the therapy may block the oestrogen in these cancers. Selection of this therapy will depend on the nature of the cancer, the patient's age and the other available treatments. Hormone therapy may be continued long-term for five years or more.

Tamoxifen is a well-known oestrogen receptor-blocker. Its use may cause hot flushes, weight gain and some general symptoms but in general it is well tolerated.

Surgery is still widely used and may involve removal only of the breast lump to conserve breast tissue, or may be a more radical operation with removal of the breast and associated lymph nodes. Removal only of the tumour depends on the type of cancer, the size and location and the size of the breasts themselves.

Lymph node surgery may be necessary if the glands in the axilla are involved. Sometimes a small exploratory operation is performed where a single gland is excised and examined for evidence of tumour to decide whether more radical surgery is required.

Radiotherapy destroys cancer cells. These days radiotherapy is very targeted and effective. Like chemotherapy it may be used to reduce tumour mass, to follow-up after surgery to destroy any remaining cells or to be a safety net to ensure that nothing has been missed with other treatments. The lymph nodes can also be irradiated to destroy nodal tumour. Side effects may include tiredness and lassitude, local symptoms affecting the skin of the breast which may become red and sore and swelling of the arm on the affected side.

The swelling, called **lymphoedema**, occurs because the delicate lymph channels that carry any excess fluid from the periphery to the heart and which, in the arm stop it from swelling, are damaged by the radiation and cease to function causing lymph fluid to accumulate in the limb.

In addition there are other treatments including such approaches as **removal, suppression or destruction of the ovaries**, which stops the ovaries from producing oestrogen and therefore prevents the oestrogen stimulating tumour growth.

There are also a variety of drugs, some of which have become mired in controversy because they have been withheld by NICE from being used as a result of assessments that suggest they are not cost-effective treatments.

The decision about these drugs can be very difficult when they may cost tens of thousands of pounds and may prolong life for a few months.

In a health system with a finite budget and with no arrangement for co-payments, there will always be difficult decisions about the way in which resources should be employed.

Reduction of breast cancer risk can be achieved by weight control, good diet, not smoking, moderating alcohol intake and getting regular exercise.

In those women with increased genetic risk of breast cancer, the prophylactic removal of the breasts may be an option since it reduces the risk by up to 90%. If such surgery is carried out, it is possible to reform the breasts using body tissue from elsewhere or breast implants.

Some women who have surgery prefer to use cosmetic prostheses inside the bra to restore appearance.

As I wrote last week, the management of breast cancer is steadily improving and the five year survival rates have increased from under 50% to over 80% during the last 40 years.

We stand at the door of further advances as knowledge of genetics and the aetiology of the disease improves further.

If Rembrandt were alive today his model, his wife Hendrickje painted in 1695, would probably not be showing the signs of breast disease.

With breast cancer, battle is fiercely waged and the battles are being won.

Let us hope the final victory is not too far away.

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