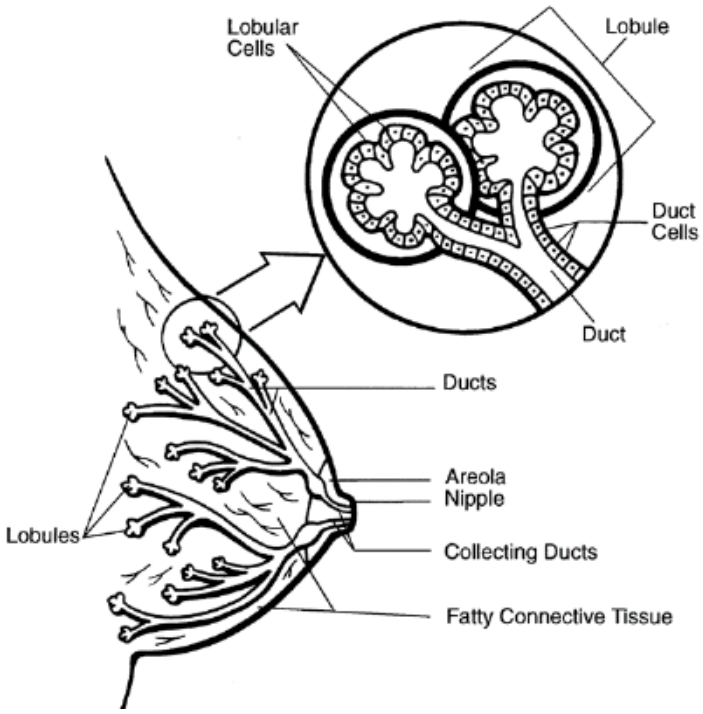
Treating Breast Cancer

2005

Introduction

Breast cancer is a malignant tumor that has acquired from cells of the breast. A cancerous tumor is a group of cancer cells that may intrude on surrounding tissues or diffuse (metastasize) to distant areas of the body. The disease occurs almost entirely in women, but men can get it, too. Breast cancer is the most common cancer among women, except for nonmelanoma skin cancers. The probability of developing invasive breast cancer at some time in a woman's life is about 1 in 7 (13.4%) (Goldstein, 1998).



The condition is fully curable by surgery but may affect both breasts. This position is parallel to the detecting of abnormal cells on the surface of the cervix, curable by excision or vaporization of the tissue. Since it has no outward manifestation, this phase of breast cancer has only been noticed incidentally in the past, but its power to create X-ray signs means it is being found more frequently now. This creates new quandaries for doctors and patients. It is not known how many breast cancers may start in this manner or how long this phase of the disease may persist (Goldstein, 1998).

The cells of an active cancer are demonstrably malignant by their ability to travel to unusual sites. Thus they develop outward into the breast tissue, entering the blood and lymphatic vessels where loose cells travel with the stream of fluid to distant sites. Local growth, or invasion, excites support tissues, namely the blood vessels and fiber cells, to grow in unison. Thus a lump appears in the softer surrounding tissue. On an X-ray the radiating strands of growth are characteristic, as are the sharp spicules of calcium, which often accompany them. Over 70 per cent of all cancers can be seen on X-ray before they can be felt and this is the basis of mammography. If neglected, invasive cancers grow up into the skin, starving the circulation, and produce ulceration. Eventually, redness, thickening, and tumor deposits occur over a wide area of chest wall, while invasion of the armpit produces lymphatic obstruction with painful swelling of the arm (Goldstein, 1998).

Metastasis is the appearance of a mass of cancer in another part of the body at a distance from the original cancer. Thus the original lump is the primary and all the metastases are secondaries. Loose cells in the lymph vessels of the breast are trapped in the armpit (axillary) lymph nodes and form secondaries there. As these secondaries enlarge, they either release cells themselves or cause cells from the primary to by-pass them in new lymphatic channels. Hence nodes further from the tumor become involved, such as those in the root of the neck (Goldstein, 1998).

Diagnosis and investigation

Track records indicate that nearly four out of five patients with breast lumps seen in surgical clinics do not have cancer. Hence it is crucial to classify them accurately, rapidly with the greatest sensitivity. Some breast cancers can be studied almost exclusively by clinical interrogation; dimpling of the skin, thickened skin, and swollen glands in the armpit or neck show that the lump is malignant (Lerner, 2001).

The mainstay of investigation is needle aspiration cytology. In some cases it may be necessary to perform a biopsy, that is remove a piece of the lump either by operation or with a special thick-cutting needle. Either test is backed up by a mammogram: an X-ray of both breasts to characterize the known lump and discover any other suspicious areas (Lerner, 2001).

Surgery

Open biopsy is definitely an operation conducted in an operating theatre and normally y under general anaesthetic. Usually an excision biopsy is done, meaning that the whole lump is removed for analysis. Sometimes cancers found in this way require no further surgery, only radiotherapy. When the suspicious area is only visible on X-ray, and cannot be felt, the procedure is called 'localization' and is more complicated. First, the radiologist inserts a thin wire marker in the breast tissue, and repeats the X-rays. She or he then gives guidance to the surgeon as to where the suspicious area lies in relation to the marker. The area is then excised under general anaesthetic. The excised part is re-X-rayed for confirmation before the operation is concluded (Lerner, 2001).

Wide excision, sometimes referred to as tylectomy, implies the contrived excision of the lump together with an area of surrounding breast tissue. This is the standard operation for patients being treated conservatively. Many phrases are used to describe this operation: wide local excision and tylectomy both imply removal of an area of normal-looking tissue around the malignant mass, while local excision, lumpectomy, and breast conservation do not distinguish the closeness of the excision margin. Segmental mastectomy is either a synonym for wide excision, or implies powers of surgical dissection unknown to ordinary surgeons. Simple mastectomy, sometimes called total mastectomy, is probably the commonest operation for breast cancer. It involves removal of an area of skin, including the nipple, and all the breast

tissue. The lower lymph glands in the axilla are also got rid of to aid management decisions. After the operation there is a simple scar leaving a flat chest wall (Lerner, 2001).

Radical mastectomy connotes the designed remotion of the entire breast, nipple, and one or two muscles joining the ribs to the shoulder bones. This allows wide access to the axilla with the intention of removing all its glands in a single mass along with the breast. This has a similar value to radiotherapy in that area. Because of the muscle loss the deformity is greater, and there is a risk of chronic arm swelling. It may be helpful to remember that radical mastectomy was invented before radiotherapy, to treat lumps considerably larger than those commonly seen today. Subsequently, simple mastectomy with radiotherapy became the standard treatment, slowly losing the radiotherapy element in favorable cases. Radiotherapy improved and came back into its own with a reduction in surgery from mastectomy to lumpectomy. The future surely holds lumpectomy without radiotherapy (Lerner, 2001).

Either of these reconstructive procedures can be performed early, or after a couple of years. The happiness brought about by improved body shape may be spoilt by dissatisfaction with the appearance, anxiety about recurrence, and failure of the change to produce the desired social effect. By and large, surgeons are increasingly willing to reconstruct early in suitable cases (Lerner, 2001).

Problems include scarring at the original site, failure of the blood supply, and lack of nipple (Lerner, 2001).

Surgery has considerable value in controlling chest wall recurrence, especially in previously irradiated areas. Orthopaedic surgeons and neurosurgeons relieve crumbling spines, and the miseries of threatened or actual long bone fracture can be alleviated by metal reinforcement (Lerner, 2001).

Radiation Therapy

Nobody knows exactly who needs radiotherapy. Without it, local recurrence happens sooner and more frequently. It could, of course, be reserved for when that happens, especially as no area of the body can undergo a second course of treatment. Although it seems instinctively good to avoid as many local recurrences as possible, it is clearly bad to give unnecessary and debilitating treatment. Radiotherapists prefer to treat tissue with a few cancer cells in it than with lumps, so early treatment for high-risk areas seems wise ((Lerner, 2001).

The side effects of radiotherapy include red, sore skin, tiredness, and nausea. Later the arm may swell and the skin of the irradiated area becomes thin, shiny, and hairless. Occasionally there are symptoms of radiation change in deeper organs-rib necrosis, lung fibrosis, and a small increase in the chance of heart disease (Lerner, 2001).

Radiotherapy toughens soft bone secondaries instead of, or after, orthopedics repair. In younger women it is undoubtedly the kindest way to reduce ovarian function. It has great esteem in treating further tumor regions causing particular problems, especially those apparent to the patient (Lerner, 2001).

Chemotherapy

The third arm of adjuvant treatment is the use of anticancer drugs -chemotherapy. For some time after the initial value of this form of treatment was shown, there was concern that the action occurred indirectly. It was possible that the drugs rather than their having a direct effect on the tumour themselves arrested ovarian and adrenal function. This has now been sorted out, and women at high risk of recurrence, before the menopause, get long-term advantages from treatment with a triple cocktail of Cyclophosphamide, Methotrexate, and 5-Fluorouracil. Repeated courses are given over a six-month period (Lerner, 2001).

This treatment often has unpleasant side effects such as hair loss, nausea and vomiting, loss of resistance to infections, decrease in sexual desire and fluctuations in weight (Lerner, 2001).

Hormone therapy

All treatment of the 'just in case' character is called adjuvant, though occasionally the word prophylactic appears. This concept continues with hormone manipulations. The specialized cells of the sex organs and breasts are particularly dependent on the circulating sex hormones, which are produced by the adrenals and gonads (ovaries or testes). Identical treatment concepts to those outlined below therefore apply to men with cancer of the prostate. Years ago surgeons knew that removing the ovaries of pre-menopausal women could produce remission in active breast cancer. Trials of ovarian removal at the time of initial treatment suggested a long-term benefit. Nowadays ovarian function can be stopped by a small dose of radiotherapy. Consequent upon the clinical observation, a drug called Tamoxifen or Nolvadex was synthesized by ICI. This blocks the uptake of oestrogen by the breast tissue, be it normal or cancerous. In laboratory tests it also seemed to have an anti-cancer effect in the absence of oestrogen. In clinical practice it has been helpful in the treatment of the elderly, but also as adjuvant therapy in the majority of breast cancer patients. It not only defers the onset of recurrence anywhere in the body, but also confers a benefit in survival, which continues from our initial experience to the present day-about ten years (Lerner, 2001).

Hormone therapy may already have been applied as Tamoxifen, up to the time of recurrence. Alternatives include high-dose progesterone treatment with Megestrol, or further reduction of the patient's own hormone output with Aminoglutethimide. Surgeons have, in the past, pursued the endocrine glands with great determination and ingenuity. Thus women with recurrent disease were subjected to bilateral adrenalectomy or removal of the pituitary. Either

operation led to disquieting imbalances of other hormones requiring a vast array of tablets and antidiuretic hormone injections to keep the body organized. The surgical enthusiasm seemed to be at times an alternative to a realistic and sympathetic discussion with all concerned (Lerner, 2001).

Complementary and alternative therapies

There is a current vogue for various alternative cancer 'treatments' that employ dietary and various psychological regimens such as imagery, imaging, and assertiveness. Most of these therapies are based on the notion that people have caused their own cancer by being either too emotional, too repressed, or too stressed or have committed various dietary indiscretions. Although the contribution of any of these psychosocial factors is likely to be small and less significant than, for example, hereditary factors, individuals are encouraged to take responsibility for their cure with programmes of dietary and spiritual self-help. The obvious implication, that if you can cure yourself by these means then you probably caused the cancer in the first place by your faulty life-style or personality, may induce considerable guilt and distress. A failure to obtain objective improvement from such treatments can be seen as 'not fighting hard enough' or not sticking to the diet, all of which can compound further the guilt at having caused the cancer in the first place (Arnot, 1999).

One appeal of unorthodox treatments is that they help maintain hope and promote a sense of self-sufficiency. The patient may feel in control of her body again and the more complex the diet or mental imaging demanded, the more this feeling of having regained some power or mastery over the disease is fostered. Another important attraction of unorthodox therapy is that it clearly meets many of the unmet emotional needs of women with breast cancer; needs that many traditional clinicians are either unwilling to address or inept at fulfilling. If women received more emotional support from their clinicians and other health-care

professionals, then their desire to seek out help from the alternative practitioners would probably be less. Doctors obviously need to try harder, but surely it is incredibly naive to believe that bedside manner alone is a sufficient alternative to truly effective cancer therapy (Arnot, 1999).

About 26% of breast cancers are thought related to dietary fats. However, there are no clear answers about what aspect of the fatty diet creates the problem since studies often contradict one another or explore slightly different aspects of the issue. Beef has the highest herbicide contamination and is second to tomatoes in pesticide contamination. Here is another reason, besides the issue of fat and protein, to review dietary habits (Arnot, 1999).

In addition to reducing fat, one should focus on increasing fruit, vegetables, and fiber in our diet. A recent Canadian study found those in the upper 20% of fiber intake had 30% less breast cancer risk compared to the lowest 20%. There was an inverse relationship between breast cancer and increased consumption of pasta, cereals and vegetables rich in vitamins C and A. Garlic has been found to enhance the immune system and have other anti-cancer properties (Arnot, 1999).

There is a chemical in cruciferous vegetables (broccoli, cabbage, etc.) that stimulates the production of an enzyme that fortifies cells against tumors. Another compound in vegetables (indole carbinol) converts active estrogen into its inactive form. When women were given it in pill form they showed more inactive estrogen in their urine (Arnot, 1999).

Limiting alcohol consumption is another way one may control possible risk. While the connection is not yet clear, there is some indication that it does increase our risk of breast cancer (Arnot, 1999).

Conclusion

Many treatment methods are used for breast cancer. Treatment depends on the size and location of the tumor in the breast, the results of lab tests (including hormone receptor tests), and the stage (or extent) of the disease. The doctor may order x-rays and blood tests. The doctor may also do special exams of the liver, lungs, or bones because breast cancer may spread to these areas. To develop a treatment plan to fit each patient's needs, the doctor also considers the woman's age and general health as well as her feelings about the treatment options(Goldstein, 1998).

The clinical course of breast cancer is uncertain and most women harbor fears that the disease may return. For those with good social support and reassuring medical support these fears may abate with time, but some patients may develop such an obsessional, anxious preoccupation with the fear of recurrence that skilled psychological intervention may be necessary. The reactions of women to obvious disease progression are usually sadness and sometimes despair. Lack of appropriate care and support at this time may add to the burden and make women easy prey for the peddlers of quack cures and remedies (Goldstein, 1998).

Some alternative therapies may contribute to a woman's sense of well-being and quality of life by giving them a sense of mastery and control. However, these approaches can produce some negative effects; in particular, no woman dying from breast cancer should have to endure the added burden of responsibility for disease progression (Goldstein, 1998).

Bibliography

Arnot, Bob. (1999). The Breast Cancer Prevention Diet: The Powerful Foods, Supplements, and Drugs That Can Save Your Life. Little, Brown; 1st edition.

Goldstein, Phillips (1998). Coping with Breast Cancer: A Practical Guide to Understanding, Treating, and Living with Breast Cancer. Avery; 1st edition.

Lerner, Barron H (2001). Breast Cancer Wars: Hope, Fear, and the Pursuit of a Cure in Twentieth-Century America. Oxford University Press.