

Breast Conserving Therapy in Operable Breast Cancer; Workshop Report

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INTRODUCTION

THIS workshop concerned itself almost entirely with the problems associated with conservation treatment of breast cancer. It was evident that many more treatment options are involved when conserving the breast than is the case with mastectomy, and treatment has to be tailored to the individual patient and to her disease. Indeed, in the poster session many new and elegant techniques were demonstrated which could be applied to certain categories of patient with early breast cancer.

The workshop had been designed to discuss problems that were encountered when using conservation treatment, and to consider early and late effects in relation to different anatomical sites and different treatment modalities.

THE BREAST

Surgery

It was agreed that the surgical treatment of early breast cancer must attempt to fulfil the following aims: (1) to establish the diagnosis; (2) to provide sufficient tissue for biochemical analysis of the tumour (e.g. hormone receptors); (3) as far as possible to resect diseased tissue completely; and (4) to attempt the above with as good a cosmetic result as possible. All options have some advantages and disadvantages. A Trucut or needle biopsy gives the best cosmetic result, but in most cases does not provide sufficient tissue for biochemical analysis and relies totally on subsequent radiation therapy for local control of disease. An incision biopsy gives adequate tissue for diagnostic procedures and for biochemical analyses and also, in most cases, gives a good cosmetic result. Again, however, local control has to be achieved by radiation therapy. An excision biopsy without removal of surrounding normal tissue is probably the best option, provided that the tumour is not too large. Here again, however,

local control of disease has to be completed by a booster dose of radiation therapy, although this can be at a lower dose because the bulk of tumour tissue had already been removed. Data were presented showing that non-radical excision of the tumour is related to a higher recurrence rate, but this can be curtailed by using a higher radiation dose. Both wide excision and quadrantectomy attempt to control local disease by surgical means but, except in a very large breast, the cosmetic result is often far from perfect.

During the discussion it became evident that it is seldom possible to remove all of the tumour tissue by surgical excision. Using specimen radiography, followed by careful histological examination, tumour tissue can be demonstrated in the residual breast in 40% of cases, even if the surgical excision went 2 cm wide of the palpable mass. These deposits of tumour cannot be demonstrated by pre-operative routine mammography. The question as to whether these tumour deposits have any clinical significance cannot yet be answered.

Radiotherapy

Radiation to the retained breast. The question was raised as to whether radiation to the retained breast should be used at all. No long-term follow-up data from randomised trials are available to answer this question. However, the results of the presented studies showed that an increase in the radiation dose results in a higher local control rate and also helps to conserve the breast because it is seldom necessary to use a mastectomy to treat local recurrence. On the other hand, local radiation to the breast probably has little effect on survival.

Booster. There was general agreement that after local excision, booster radiation is probably helpful—the type of booster employed probably depends on the tumour size. It was suggested that

iridium-192 is better than the use of electrons, partly because there is less skin reaction but also because a higher dose to the tumour area can be given and the continuous low dose rate from the implant results in a higher tumour kill with the same toxicity to normal tissue.

It was demonstrated that large tumours require a higher radiation dose to achieve local control even if the tumour itself has been excised, but there was great emphasis that over-treatment must be avoided because the cosmetic result may be worse than would be achieved by a mastectomy.

It was accepted that following conservation treatment local recurrence is inevitable in some cases. This can mostly be dealt with by subsequent surgery, and it was suggested that the prognosis following local recurrence after conservation treatment is probably better than that after mastectomy. The risk of local recurrence continues for a long period and, even at 15 yr, is still a hazard.

THE AXILLA

The aim of management here is a combination of therapy and staging. The main controversy was whether the surgical management of the axilla was best accomplished by a total axillary clearance or by a lower axillary sample. The factors in favour of total clearance are that it gives full information on axillary node status and also accomplishes a complete removal of affected nodes so that radiation therapy is not required afterwards. On the other hand, it has the disadvantage that many patients have their axillae cleared unnecessarily, and in some cases may result in oedema of the arm. As far as an axillary sample is concerned, in most cases it gives information as to whether the axilla is involved but does not let the surgeon know how many nodes are affected with tumour. Additionally, it has the disadvantage that treatment has to be completed by radiotherapy in those patients who are found to have positive nodes.

There was some discussion on the significance of axillary recurrence and whether this contributed to eventual survival. One controlled series has indicated that axillary recurrence is associated with an increased incidence of distant recurrence and diminished survival, but this experience has not been encountered elsewhere. One particular disadvantage of axillary recurrence is that a subsequent surgical clearance may not be possible, resulting in local involvement of the axillary vein and brachial plexus with considerable and unpleasant sequelae. On the other hand, retrospective studies have shown that in nearly all cases a radiation dose of 50 Gy in 5 or more weeks

is able to prevent lymph node recurrence when no gross disease is palpable before treatment.

OTHER NODE AREAS

This subject was only briefly discussed and there was general agreement that the same rules apply here as following the use of mastectomy. Treatment to the internal mammary chain and supraclavicular fossa probably does not increase survival but does improve regional control.

ADJUVANT THERAPY

Available information suggests that most conservation techniques are compatible with adjuvant therapy but there is very little information on the long-term effects of adjuvant treatment under these circumstances. If conservation therapy becomes established, the clinical trials on adjuvant therapy that are already being undertaken in patients treated by mastectomy may have to be repeated in these different circumstances.

REMOTE RADIATION EFFECTS

Following radiation, an increase in the rate of breast malignancies has been reported in adolescents among the Hiroshima victims, in patients who had repeated fluoroscopies in the management of artificial pneumothoraces and in those who had mastitis treated by irradiation. The rate of radiation-induced malignancies increases with the dose. It was noted, however, that there is a peak around 20 Gy and that the malignancy rate almost certainly drops considerably with higher doses. This is probably due to the fact that low-dose irradiation results in sublethal damage to the cells, which may then recover. In some circumstances this process may lead to malignant transformation. On the other hand, higher doses of irradiation will cause irreparable damage, resulting in cell kill.

Data presented from the Cancer Institute in Marseille and Institute Curie in Paris confirmed this theory. The percentage of new breast tumours following high doses of irradiation was obviously lower than would have been expected if the data obtained at low doses could be linearly extrapolated.

PSYCHOLOGICAL EFFECTS

It was explained that some 10% of patients after mastectomy have severe psychological problems relating to loss of the breast and that conservation treatment may significantly improve this. On the other hand, there will be a number of patients who have conservative treatment who will have major psychological problems related to an increased fear of cancer because the breast has not

been removed. Some evidence was presented that this latter effect may not be great. Nevertheless, it was generally agreed that local recurrence has a profound effect on a woman who has had breast cancer.

CONCLUSIONS

The early and late results of trials which have been carried out at the National Cancer Institute in Milan and the Institute Gustave-Roussy in Paris, and from a number of uncontrolled series, suggest that it is probably safe to use some form of conservation technique in the management of small tumours. Nevertheless, it must be appreciated that the trials have a relatively short follow-

up and the 15- or 20-yr recurrence and survival rates are not known. There must still be some uncertainty about the ultimate results. Provided that this uncertainty is fully understood by both patient and doctor, and provided that the techniques used are precisely the same as those that have been properly tested, these methods could probably be offered in practice. It was continually emphasised that if conservation treatment is to be used it must be undertaken properly. This is not an easy option and involves considerable skill in terms of both surgical and radiotherapeutic management. Its use should probably be confined to centres which have the proper experience and expertise.