Management of the Axilla in Breast Cancer. Implication for Diagnosis, Prognosis, Treatment, and Morbidity

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Acta Oncologica Vol. 39, No. 3, pp. 259–260, 2000

Breast cancer is the leading cancer disease among women in the Western world, with the number of cases continuously increasing. In the Nordic countries about 15 000 women will receive a diagnosis of breast cancer each year corresponding to a life-time risk of more than one out of every ten women. Fortunately early diagnosis and detection through screening programmes together with improved therapy have reduced the mortality of the disease as shown in a recent encouraging report on breast cancer mortality from the UK and the US (1). At the time of diagnosis approximately 95% of the patients have only known local regional disease and approximately 60% will be diagnosed before the disease has spread to the regional (axillary) lymph nodes. This number of women with node negative status is fortunately increasing due to early detection programmes.

The status of the axillary lymph nodes is an important factor in the diagnosis, treatment and prognosis in breast cancer. First of all, elimination of cancer cells in the lymph nodes is a minimal requirement in order to secure loco-regional tumour control, and furthermore spread to the axillary lymph nodes may represent a nidus for dissemination of the disease. Therefore knowledge of the extent (if any) of the disease in the axillary lymph nodes is an important prognostic parameter which currently represents the major indicator in selecting patients for appropriate adjuvant systemic therapy. With the current therapeutic strategies, knowledge of the nodal status represents the most significant prognostic parameter. Roughly speaking the presence of nodal disease indicates that approximately three out of four such patients ultimately will be at risk of dying from their cancer, whereas less than one out of four will do so if the nodal status is negative. Improvement in systemic and loco-regional treatment has fortunately indicated that the survival probability in (especially) node positive patients is improving, but at the same time it represents an increased risk of associated morbidity.

Axillary status is by far the only important prognostic factor. Traditionally, knowledge of the size of the primary tumour has provided valuable prognostic knowledge, especially related to the risk of dissemination of distant metastasis, as extensively described by Koscielny and Tubiana (2–4). It is obvious that taking knowledge of tumour size and nodal status into consideration it represents substantial prognostic information, but it is also a demonstration of the heterogeneity in breast cancer, since both an increasing number of positive nodes and tumour size, respectively, may suggest an increasing risk of dissemination of the disease.

Up till now axillary lymph node sampling or dissection have been considered necessary prerequisites in order to secure a proper treatment for patients with breast cancer. However, this implies that the majority of women will be subjected to a surgical procedure involving removal of the lymph nodes from the axilla without having any sign of the disease in these. If this procedure was without any associated morbidity, the problem would be trivial, but unfortunately this is not the case. Axillary surgery is associated with a risk of side-effects which may be further enhanced by radiotherapy. Thus, lymphoedema, impairment of shoulder movement, damage to the brachial plexus, and chest wall pain are characteristic consequences of axillary surgery. Addition of radiotherapy to the surgically-explored axilla may further enhance this risk and there is a clear relationship between the number of lymph nodes removed and the enhanced risk of lymphoedema and impaired shoulder movement in patients treated that way. Although only patients at high risk are given such treatment it still possesses a major probability of complications, and many women will suffer from such side-effects the rest of their lives.

Fortunately, the prognosis for breast cancer is improving and in the Nordic countries about 200 000 women are

 ISSN 0284-186X

currently alive after being treated for breast cancer. Of these more than 60% are long-time survivors and have been treated for their disease more than 5 years ago. The morbidity associated with diagnosis and treatment of breast cancer is evidently a major problem and all efforts should be put into reducing it without compromising the risk of being cured of the malignant disease.

In recent years there have been significant changes in the attitude towards management of breast cancer. This change has especially been associated with the use of new surgical techniques in the axilla in the form of sentinel lymph node dissection. This surgical evolution is changing the entire attitude towards how the disease should be handled. The use of sentinel lymph node dissection is apparently going to become a standard treatment option, without given the necessary time for performing and evaluating the appropriate clinical trials. Although such trials have been initiated it is obvious that practice will be altered before the results of these trials are known. This is a characteristic example on how evolution in cancer treatment is not necessarily a product of controlled clinical trials, but frequently moves in steps when (apparently) new beneficial approaches are introduced. Although this represents a break away from the road of evidence-based development of rational therapeutic strategies, it is understandable that women will not await clinical trials with ten-year follow-ups in situations where the benefit seems so clear and risk may be minimal.

It is important that the medical profession understands and responds to the changes and their implications because it is not only associated with a different surgical technique but an entirely new approach towards dealing with treatment of breast cancer in an optimal way. This includes evolution in molecular biology with new methods and techniques based on knowledge of the genetic status of the tumours which in turn may change our therapeutic approaches. Added to this are new (e.g. histopathological) techniques for identifying of micrometastases in the axilla and new indications for adjuvant radiotherapy. There are therefore good reasons to spend time reflecting on this transition when our current 'axillary information' and our use of it in therapeutic decision-making may no longer be valid, and when new information needs to be collected and old knowledge verified and modified.

Acta Oncologica represents a journal with a long tradition and roots in Nordic oncology and has throughout most of a century been the scientific journal representing the special attitudes towards integrated management of oncology characteristic of the Scandinavian countries. In an attempt to further enlighten that process it was decided to introduce the concept of an 'Acta Oncologica Conference' with the aim of discussing topics of broad interest to clinical oncology, and to present a spectrum of view points which could be used to optimize the decision-making process. In particular, issues related to changed paradigms and/or controversies of special interest to the Nordic countries would be addressed. On this basis it was obvious that the first of these symposia was aimed towards a comprehensive analysis of the benefits and problems associated with management of the axilla in breast cancer. Special attention was given to the use of new surgical techniques and modern molecular biological approaches in an attempt to reduce the risk of morbidity associated with axillary procedures. The symposium took place in Geilo in Norway, March 22–25, 1999, in the format of a multidisciplinary conference, including invited presentations, proffered papers, and discussions. The present issue contains a large selection of papers presented at this meeting and gives a good basis for overviewing the problem together with the presentation of important new scientific information. The conference was also facilitated by generous support from the Mary Béves Foundation which allowed the presentation of a special Mary Béves Lecture. In addition it was supported by the Nordic Cancer Union and the organizers express their gratitude for this support. The organizers would also like to thank the authors for the papers presented in this issue and the participants for valuable discussions in a multidisciplinary forum.

It is our impression that the papers in this issue of Acta Oncologica give a good overview of the complexity of breast cancer and especially the problems related to management of the axilla and we are confident that the material presented will add to our scientific knowledge and be helpful in optimizing the interdisciplinary process of balancing the benefit of optimal cancer treatment with attempts to minimize the risk of morbidity.

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