

agents and 5-fluorouracil) and tamoxifen, and a modulation of the interaction by the degree of endocrine responsiveness. Three randomized trials showed the superiority of sequential over concurrent administration of anthracycline-based regimen and tamoxifen for postmenopausal women with node-positive, receptor-positive disease. Although available data indicate the superiority of sequential tamoxifen over concurrent administration, evidence exists on benefit for delayed chemotherapy during tamoxifen for postmenopausal women with node-positive disease. A very large randomized clinical trial has shown preliminary evidence that anastrozole is at least as effective as tamoxifen as adjuvant therapy after chemotherapy for postmenopausal women, 84% of whom had disease recorded as receptor positive. No information is available on the concurrent use of aromatase inhibitor and chemotherapy and the issue is under investigation. In premenopausal women, overview data showed that the administration of goserelin reduced the odds of recurrence and death. Experimental information and preliminary data from phase II trials and phase III Trials suggest that concurrent administration of LH-RH analogue and chemotherapy might improve therapeutic results. The addition of LH-RH analogue to tamoxifen plus or minus concomitant CMF chemotherapy resulted in better results if compared with no LH-RH analogue. A small trial on concomitant ovarian suppression and anthracycline-containing chemotherapy followed by tamoxifen versus endocrine therapy alone provided similar benefit. The sequential use of goserelin following CMF improved outcome compared with either modality alone in patients with node-negative disease, at least in subset analyses, and a trend in favour of the addition of LH-RH analogue after CAF chemotherapy was observed in a large trial (node-positive disease). Optimal integration of endocrine therapy with chemotherapy is a crucial component in decision-making for treatment choice for patients with endocrine responsive tumors and should be further studied in the laboratory and in Clinical Trials.

Thursday, 18 March 2004

14:15–15:45

SYMPOSIUM

Progress towards loco-regional treatment tailoring

225

INVITED

How much can new imaging modalities improve tumour staging?

W.E. Svensson¹, A.M. Connors². ¹Imperial College School of Medicine and Charing Cross Hospital, Nuclear Medicine and Breast Imaging, London, UK; ²Charing Cross Hospital, Breast Imaging, London, UK

A variety of approaches are available to allow more accurate staging. The approaches for presurgical chemotherapy are different to those needed for the patient who is to have definitive surgery. Assessment of tumour extent in invasive ductal carcinomas, invasive lobular carcinoma and ductal carcinoma in situ all require different approaches for accurate staging. Successful chemotherapy prior to surgery makes staging more difficult as it is often difficult to differentiate residual tumour from fibrosis using anatomical imaging methods whilst functional imaging cannot exclude microscopic residual disease. Minimally invasive interventional techniques such as laser and radiofrequency ablation as well as high intensity focused ultrasound all require more accurate imaging information if they are to replace conventional surgery as the main therapy for primary breast cancers.

One of the problems is providing a simple guide for surgeons to allow minimal surgery with good first time excision of all the tumour. More accurate loco regional staging could help to reduce both operating time and number of operations. Effective staging usually needs a multimodality approach with the placement of either intramammary markers or effective skin markers as well as good delineation of sentinel lymph nodes. All modalities except ultrasound require complex procedures to show exact tumour position and the larger the breast the greater the difficulty with all modalities to accurately delineate tumour extent pre-operatively.

The increased use of chemotherapy prior to surgery or alone with radiotherapy, as well as new minimally invasive ablation techniques, also requires much more accurate measurement of tumour extent and stage both prior to and during treatment to provide accurate estimation of therapy response.

In the breast mammography alone is usually sufficient if the breast is mainly fat. The presence of dense stroma immediately reduces mammographic accuracy. In the dense breast ultrasound is more accurate for assessing invasive tumour size than mammography. It can also provide information on axillary lymph node staging especially proof of lymph node involvement if FNAC or core biopsy is used to confirm presence

of malignant tissue. Ultrasound accuracy is dependant both on operator experience and imaging quality.

MR has high sensitivity for detection of multifocal and contra lateral disease but its false positive rate requires biopsy proof of additional tumour foci. It shows good correlation with tumour size and may be the best modality currently for showing extent of DCIS. Nuclear medicine currently is most useful for aiding sentinel node biopsy, both axillary and parasternal. Because of its high specificity its place is sorting out complex cases where there is doubt with the help of MIBI and FDG PET.

New imaging techniques are being developed which may help loco regional staging accuracy to increase conspicuity of tumour margins and satellite lesions. They include: mammography (3-D and tomography), ultrasound (3-D, ultrasound contrast agents and novel RF data processing such as used in elasticity imaging), MR (new sequences, coils, contrast agents, elasticity imaging) and nuclear medicine (PET, high resolution cameras, FDG, FLT, oestrogen analogues and other new tracers) as well as other new imaging modalities (multislice CT perfusion imaging).

226

INVITED

Minimally invasive techniques in breast cancer treatment

I.T. Rubio¹, V. Klimberg². ¹Clinica Teknon de Barcelona, Breast Surgical Oncology, Barcelona, Spain; ²University of Arkansas for Medical Sciences, Breast Surgical Oncology, Little Rock, Arkansas, USA

For almost a century, the treatment for breast cancer was radical surgery. Today, the surgical management of breast cancer is evolving toward minimally invasive procedures. Breast conservative surgery is now the choice for early breast cancer and the acceptance of axillary lymph node dissection (ALND) as part of the management of breast cancer is also decreasing because the increasing use of screening mammography is detecting more small primary lesions with less likelihood of node involvement. Sentinel lymph node biopsy has been taking over ALND in those patients with early stage breast cancer. However, before abandoning ALND, some issues need to be resolved and there are situations where sentinel lymph node still need to be done in the context of clinical trials such as patients with multicentric disease or neoadjuvant chemotherapy.

The increasing use of breast ultrasound (US) has paralleled the increase in the number and quality of screening mammograms. In the past, breast US has been the solely in the diagnostic armamentarium of the radiologist. Ultrasound has now come into play in every aspect of breast surgery, and is being used to characterize, percutaneously aspirate, biopsy, remove or ablate lesions. Breast surgeons with an understanding of the physics and characteristics of benign and malignant lesions have developed US as an extension of the physical examination and an added tool to achieve cancer-free lumpectomies (Figure 1).

There are other techniques that are being explored to make breast surgery less invasive. These include cryosurgery, laser ablation guided by magnetic resonance imaging, and radiofrequency ablation. The goal of these techniques is to destroy by heating or cooling not only the tumor cells but also the surrounding tissue so the lesion can be treated with negative margins. The advances in the field of molecular genetics will help in accomplishing this goal. Until long term results become available clarifying local recurrences and survival, patients should receive these techniques under clinical trials.

Surgeons need to move into the development of all these new techniques for breast cancer treatment because this minimally invasive techniques are becoming a part of the multidisciplinary approach of breast cancer patients.

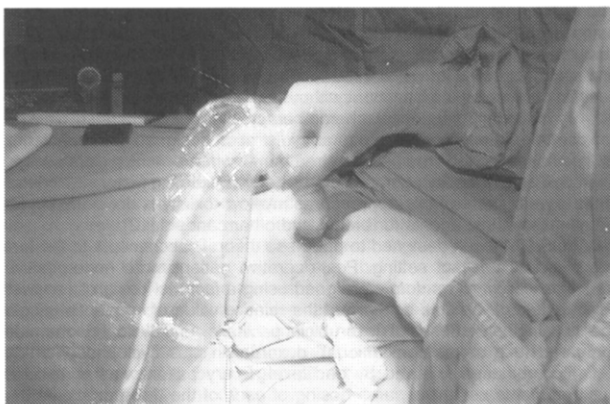


Fig. 1. Intraoperative ultrasound guided breast biopsy.