

There was no correlation between radio-isotope uptake and size of metastasis in the SN. There was no correlation between blue dye uptake and tumor burden in the positive SN.

Conclusion: In an individual SN, the PR by tumor and EI are markers of lymphatic obstruction and significantly associated with reduced radio-isotope uptake. These results suggest that >50% replacement of the node by tumor will compromise the lymphatic flow and may lead to failed localisation of the node if the radio-isotope is used alone. However, the SN tumor burden does not affect blue dye uptake. This result provides an argument for using a combination of blue dye and radio-isotope for SN biopsy.

126

Poster

Is axillary dissection necessary for breast cancer patients with micrometastasis in the sentinel lymph node?

S. Pernas¹, A. Urruticoetchea¹, A. Benítez², M.T. Bajeñ², A. Pisa¹, M.J. Pla³, A. Gumà⁴, J.M. Serra⁵, E. Benito³, M. Gil¹. ¹Institut Català d'Oncologia, DiR, Medical Oncology, L'Hospitalet-Barcelona, Spain; ²H.U. de Bellvitge, Nuclear Medicine, L'Hospitalet-Barcelona, Spain; ³H.U. de Bellvitge, Gynecology, L'Hospitalet-Barcelona, Spain; ⁴H.U. de Bellvitge, Radiology, L'Hospitalet-Barcelona, Spain; ⁵H.U. de Bellvitge, Plastic Surgery, L'Hospitalet-Barcelona, Spain

Background: As sentinel lymph node biopsy (SLN) has become a widely accepted alternative to axillary lymph node dissection (ALND), identification rate of micrometastases (>0.2 mm but <2 mm) has increased. The more extended procedure when micrometastases are founded in the SLN is completion ALND because of the risk of additional non-SLN metastases. However, this risk varies depending on the series so the need for ALND with its associated morbidity in patients (pts) with micrometastases in SLN remains controversial.

Methods: From November 2000 to December 2004, SLN biopsy was successfully performed in 702 pts. All patients had a negative axillary ultrasound scan. Out of 702 pts, 40 had micrometastases to the SLN. Following our institution's protocol based upon previous experience no ALND was performed in patients with micrometastatic involvement of the SLN. Nine pts out of the 40 underwent ALND as the intraoperative study of the SLN yielded a positive result. Of these patients, non-SLN metastases were found in only one patient (the non-SLN metastasis size was 4 mm).

Regarding adjuvant systemic therapy decision, all these patients were considered as having positive lymph nodes, so all of them received either chemotherapy, hormonal therapy or the combination of both.

Results: After a median follow-up of 33 months (5-51), all but one of the 31 pts with pN1mi and no ALND were free of disease. The patient presenting a relapse was a 63 years old patient who declined postoperative breast irradiation and developed a breast recurrence followed by distant metastatic spread. None of the patients bearing micrometastases in the SLN and in whom ALND was omitted, presented axillary recurrence.

Conclusion: Axillary lymph node involvement is the most important prognostic factor in early breast cancer. The size of SLN metastasis is associated with the magnitude of risk of non-SLN involvement. ALND is a staging procedure and it is important in treatment selection, but may not have a therapeutic role in itself in these cases. Omitting ALND in pN1mi can be an option to avoid the associated morbidity of ALND and if adjuvant systemic therapy is considered. Results of prospective studies on this topic are awaited.

127

Poster

2D and Color Doppler ultrasound in preoperative axillary staging for sentinel lymph node (SLN) biopsy in breast cancer patients

P. Basta, K. Wadowska-Jaszczynska, A. Ludwin, W. Kolawa, M. Oplawska. Jagiellonian University, Department of Gynecology, Obstetrics and Oncology, Krakow, Poland

The SLN biopsy in breast cancer became recently a standard procedure in many centers. In principal of this method, axillary lymph nodes should be clinically classified as N0. The aim of this study was to evaluate the diagnostic value of ultrasonography with color Doppler and clinical examination in qualification patients to SLN biopsy.

Method: 61 patients with early (up to 3 cm of diameter) breast cancer were qualified to SLN biopsy. The status of axillary node was evaluated by palpation and ultrasonography features of presence of metastasis in lymph nodes like the size, shape and longitudinal/transverse axis ratios of each node, absence of echogenic hilum, asymmetrical cortical thickening, and presence of peripheral, transcapsular flow.

Summary: SLN was identified in 71 patients. By 21 patients SLN (s) were positive in histological report. The concordance between clinical examination, ultrasound and definitive status of axillary nodes in 71 patients was respectively: 60% and 87%. By ultrasound, the most apparent

features of malignancy were asymmetric cortical thickening and presence of peripheral, transcapsular flow.

Conclusion: Based only on clinical examination a lot of patients would be inappropriately qualified to SLN biopsy procedure. Additional ultrasound with color Doppler examination may improve appropriate selection of patients to this procedure.

128

Poster

The hottest sentinel lymph node for breast cancer dose not always contain metastasis

N. Wada, S. Imoto. National Cancer Center Hospital East, Breast Surgery, Kashiwa, Chiba, Japan

Purpose: To verify whether the most radioactive sentinel lymph node (SLN) has always metastases in patients with the positive SLNs and how many radioactive SLNs should be removed.

Methods: Between January 1999 and December 2003, 551 cases with a clinical tumor size < 5.0 cm and a clinical node negative breast cancer underwent SLN biopsy using the combined method with blue dye and radio-isotope (RI). SLN biopsy was continued until all blue and hot nodes were removed. A specific SLN-to-background ratio was not specified in this study for defining an SLN. A count of radioactivity of the harvested node was performed in ex-vivo. All SLNs were initially evaluated by frozen section analysis, intraoperatively. Patients with a positive frozen section immediately underwent axillary lymph node dissection. The SLNs and other dissected non-SLNs were later examined in permanent sections by routine hematoxylin-eosin staining of single sections. This analysis includes 495 cases with successful RI localization.

Results: The mean number of SLNs harvested was 1.7 ± 0.9 (range 1-7). Twenty-three percent of cases (115/495) were node-positive. In 94 (82%) of SLN positive cases, the hottest SLN contained tumor. Two hundred fifty-six (52%) had two or more SLNs identified. Of these multiple SLNs harvested cases, 67 had positive nodes. Forty-six (69%) contained tumor in the hottest SLN, but 21 (31%) in the less radioactive (the second or third hottest) SLN, and 4 (6%) in no radioactive and blue stained SLN.

The all positive nodes with the less radioactive SLN count showed 10% or more of the hottest SLN count, except for the four no radioactive and blue stained cases with 0% of count ratio. For 97% (111/115) of node-positive cases, metastasis was detected within the first three hottest SLNs removed.

Conclusions: These data suggest that the hottest SLN does not always contain metastasis. However, the result were reached with using the combined method with blue dye and measuring the count of radioactivity in the "ex vivo". Practically, we should remove all nodes containing RI and/or staining with blue dye.

129

Poster

A subjective analysis of the influence of sentinel node concept on the aesthetic outcome of breast conservative surgery

J.L. Fougo¹, T. Dias¹, P. Antunes¹, L. Giesteira¹, P. Reis¹, G. Ferreira², H. Silva¹. ¹Portuguese Institute of Oncology-Porto Centre, Surgical Oncology, Porto, Portugal; ²Portuguese Institute of Oncology-Porto Centre, Breast Unit-Outpatient Clinic, Porto, Portugal

Introduction and Aims: Sentinel node concept brought numerous advantages to women with breast cancer (BC). Sparing axillary nodes anatomy physiology may allow a better tolerance to the effects of surgery and radiotherapy and therefore enhance the cosmetic results. Our aim was to compare the cosmetic of two randomised groups of patients, on a subjective basis.

Methods: A consecutive series of pN0 BC patients submitted to either partial mastectomy plus axillary dissection or partial mastectomy plus sentinel node biopsy (included in a randomised trial) was photographed. Photos were analysed by a panel of 7 persons (4 women: a junior surgeon, a surgery resident, a breast cancer nurse and a healthy women; 3 men: a senior surgeon and two junior surgeons), considering the following variables: global aspect, scar, breast size, breast shape, nipple position, areola shape and skin colour. Participants were blinded for the type of surgery applied to each patient; they were also blinded for each other appraisals. Results were assessed based on a four levels classification: excellent (1), good (2), fair (3) or bad (4).

Results: We studied 47 female patients, 20 allocated to arm 1 (axillary dissection) and 27 to arm 2 (sentinel node biopsy). Median of age was 56 years (range: 32-71). Median follow-up time was 40 months (range: 29-55). All patients received partial mastectomy and adjuvant radiotherapy (50 Gy plus external boost or brachytherapy). Chi-square test and Student's t-test showed that the only variable which good results were associated significantly with sentinel node biopsy only was skin colour (p < 0.005). We

couldn't find any significant relationship between other variables and the type of axillary surgery.

Conclusions: In this study, sentinel node biopsy only was associated with better results of skin colour after conservative surgery and radiotherapy. This may be related to an improved skin tolerance to secondary effects of radiation when axillary lymphatic function is preserved. Other studied variables may be more dependent on tumor location and breast surgical technique than on axillary surgery.

130

Poster

Sentinel node biopsy in breast cancer, a novel method with new photosensitizer since 2004

K. Yamada¹, N. Kouno¹, A. Ogata¹, D. Oota¹, H. Kaise¹, H. Kato².

¹Tokyo Medical University Hospital, Breast Surgery, Tokyo, Japan; ²Tokyo Medical University Hospital, Respiratory Surgery, Tokyo, Japan

Purpose: Sentinel node navigation biopsy for breast cancer is now popular method in the world.

Isotope and blue dye are usually used for detecting sentinel node.

The purpose of the study is to develop an alternative procedure for SLN biopsy.

We examined the efficacy and safety of SLN biopsy by using Talaporfin sodium (Laserphyrin[®]) comparing with current methods for breast cancer operation.

Materials and Methods: This drug was developed for photodynamic therapy and on sale from June 2004 in Japan. 2-3 ml of Talaporfin sodium solution was locally injected in subareolar just before operation. We tried to detect sentinel node that was fluoresced and coincident with RI methods.

Results: From June, 2004, we experienced 20 cases of sentinel node navigation surgery by using photosensitizer for breast cancer. About 20 minutes after injection, "shocking pink" colored sentinel node and lymph route was detected in the area of near axilla, where 405 nm light was exposed in the dark.

Furthermore those colors were able to be seen by only wearing special glass. After operation, there were no any side effects including skin photosensitivity to the patients.

Discussions: The results suggest that there is no correlation between fluorescence and pathological SLN metastasis. But all 3 cases of pathological SLN metastasis revealed positive fluorescence. In some cases which could not identify SLNs by RI method, we could identify SLNs by Laserphyrin. Amount of radio-isotope might influence to identify of SLNs with Laserphyrin. Also the depth of injection might influence to identify of SLNs with Laserphyrin. Laserphyrin made possible observation of not only SLNs, but also a route, second SLNs. This characteristic might be useful for exclusion of skip metastasis and appropriate sampling second nodes. One of these patients is under the treatment of chronic renal failure. There is no influence after the operation. Laserphyrin is metabolized in a liver. Thus for renal failure patients, it is suggested to be more safe than using patent blue.

Conclusions: Since June 2004, we have experienced 20 cases of sentinel node navigation surgery by using new photosensitizer for breast cancer. Sentinel node navigation biopsy by using Talaporfin sodium (Laserphyrin[®]) is considered to be useful as compensation of current methods.

There were no any adverse effects including skin photosensitivity in all of cases. However only a limited number of patients were investigated. Thus further investigation will be required to confirm the feasibility and safety of this approach.

131

Poster

Sentinel node biopsy in multifocal breast cancer: Accuracy of blue dye assisted four node sample

S.R. Narreddy, S. Govindarajulu, S.J. Cawthorn, A.K. Sahu. *Frenchay Breast care Centre, Breast Surgery, Bristol, United Kingdom*

Introduction: Sentinel Lymph Node Biopsy has been validated for unifocal breast cancer. In spite of few published reports multifocal invasive breast cancers are generally considered to be a contraindication for SNB. Most of the studies have employed a peritumoral, radio tracer approach. We describe our results of a simple technique of blue dye only assisted four node sample to minimize the false negative rates.

Aims: The purpose of our study was to evaluate the feasibility and accuracy of SNB in patients with multifocal breast cancer using a sub-areolar injection of blue dye alone for sentinel lymph node (SN) mapping.

Methods: The study was conducted prospectively to collect data of all patients with multifocal cancers undergoing sentinel node biopsy. Consecutive patients undergoing axillary dissection for breast cancer were included in the study.

Four blue node sample technique: We perform a sentinel node biopsy using sub-areolar injection of 2ml of patent blue V dye just before prepping the patient and massaged for one minute. The time interval between the injection and incision was 5 to 7 minutes. The blue lymphatic tract was identified leading to the sentinel node and the blue tracts were traced to identify further blue nodes. The dye was traced distally to make sure there were no submammary nodes were missed. Blue nodes were sent separately and further axillary dissection was completed in all cases.

Results: A total of 74 patients underwent sentinel node biopsy during a six month period from April 2004 to September 2004 with an overall success rate of 97%. Of these, 17 patients had multifocal disease. Mean age was 57.2 years. Sentinel node was found in all the 17 patients. In 13 of these cases four or more blue nodes were dissected in the SNB sample. Thirteen patients were node positive (13/17, 76.5%). The overall accuracy and sensitivity of four blue node sample was 100% for multifocal cancers. There were no false negative cases. The Sentinel node sample included all the positive nodes in 7/13 of cases.

Conclusion: Blue dye assisted sampling technique picking up at least four nodes is accurate in predicting the axillary status in patients with multifocal cancers. It is simple and avoids the use of radiotracers. It is a simple modification of the four node technique practised by more than 50% surgeons and there by minimises the learning curve for those wishing to adopt sentinel node technique.

Wednesday, 22 March 2006

16:00-16:45

POSTER SESSION

Ductal and lobular carcinoma in situ

132

Poster

Effects of letrozole and anastrozole on ductal carcinoma in situ (DCIS): results from a randomised trial

O. Young¹, D. Faratian¹, S. White¹, J. Murray¹, L. Renshaw¹, J. Macaskill¹, D. Evans², D. Cameron¹, W. Miller¹, M. Dixon¹. ¹Edinburgh Breast Unit, Western General Hospital, Edinburgh, United Kingdom; ²Novartis Pharma AG, Oncology, Basel, Switzerland

Introduction: A number of ongoing clinical studies are investigating the effectiveness of aromatase inhibitors in patients with DCIS but there have been no studies looking at the biological effects of aromatase inhibitors on DCIS. This study investigates the effects of letrozole and anastrozole on cell proliferation in patients with DCIS.

Materials and Methods: 206 postmenopausal women with 209 invasive estrogen receptor (ER) positive breast cancers were enrolled into a randomised pre-operative trial of 14 days treatment with either 2.5 mg of letrozole or 1 mg of anastrozole. A review of initial core biopsies at diagnosis and excision specimens at surgery identified 27 patients with 26 pairs of samples [15 who received anastrozole (A) and 13 letrozole (L)] with sufficient ER positive invasive cancer and DCIS for analysis. Assessment included ER, progesterone receptor (PgR), HER2, and proliferation (Ki67) by immunohistochemistry with FISH for HER 2+. ER and PgR were scored by Allred scores and proliferation scored as % Ki67 positive cells. Results are presented as means (SEM); analysis is by paired t tests and Pearson's correlation.

Results: Invasive cancers, Proliferation: A reduced tumour cell proliferation from baseline in 14/15 cancers from a mean of 9.33 (2.31) to 1.43 (0.46), p = 0.001 – median and mean reduction 78% (58–91) and 71.1% (8.7) from baseline. L reduced proliferation from baseline in all 13 cancers from a mean of 7.46 (1.52) to 0.96 (0.39), p = 0.001 – median 85% (66–94) mean 78.8% (6.6) reductions from baseline.

DCIS, Proliferation: A reduced proliferation in DCIS from 10.1 (3.0) to 4.24 (1.52), p = 0.058, by a median of 57% (-68–89): mean fall was 24.4% (31.8). L reduced proliferation from 11.8 (2.34) to 1.86 (0.76), p < 0.001 by a median of 83% (68–92) and a mean of 77% (6.9).

Summary of changes in proliferation in DCIS

Drug	Increase	No change	Reduction	Median % reduction from baseline
Anastrozole	2	3	10	57 (-66 to 89)
Letrozole	0	0	13	83 (68 to 92)

There was a significant correlation between the magnitude of change in cell proliferation between invasive cancers and DCIS in same patient for L, p = 0.026, but not for A, p = 0.72.