

considered as a negative outcome. None of these patients developed local recurrence during follow-up.

Conclusions: SLNB is a safe and reliable method for staging the axilla in patients with invasive breast cancer. However there is a chance of developing local recurrence (1.0%) and distant recurrence (2.0%). Long-term follow-up will prove whether these percentages will remain constant. Patients with submicrometastases in the SLNB did not develop any axillary recurrence.

319

Poster

Detection of the sentinel lymph node in breast cancer: a comparison between two radiotracer injection techniques: periareolar and intratumoral

E. Guedes¹, M.C. Schorr¹, N. da Silva Junior², C.E. Anselmi², O. Anselmi², R.F. Savaris³. ¹Hospital Moínhos de Vento, Gynecology Oncology, Porto Alegre, Brazil; ²Hosp. Santa Rita, Gynecology Oncology, Porto Alegre, Brazil; ³UFRGS, Ginecologia e Obstetrícia, Porto Alegre, Brazil

Background: It is believed that preoperative detection of the sentinel node (SN), through periareolar cutaneous injection, presents advantages over other techniques. However, few data have been published comparing the different ways of administration. The aim of this study is to compare the periareolar (PA) vs. Intratumoral (ITU) methods of radiotracer for detection of SN.

Material and Methods: Twenty-three women with breast-cancer (T1-T2) were investigated. Chemotherapy, non-oncological breast surgery and previous axillary surgery, pregnancy, palpable axillary lymph node and inflammatory breast cancer were excluded. All patients were submitted to both methods. Firstly, the radiotracer was injected into the tumor guided by a radiological study. Scintigraphic images were acquired with a Gamma camera filled with a high-resolution collimator in order to document the number, place of migration and uptake in the SN. Acquisitions were done with patient's arms in the surgical position. After radiotracer injection, dynamic and static images were obtained at 1 and 3 hours, respectively, in anterior and lateral views. After conclusion of first stage, the patient received another intradermic and periareolar injection of the radio tracer, in the same quadrant of the primary lesion. Scintigraphic images were the second technique were obtained in the same manner. Fisher's exact test was used for statistical analysis, considering significant a $P < 0.05$.

Results: In the PA technique, 22/23 (95.6%) cases were identified, while in the ITU 20/23 (86.9%). Nineteen patients presented the same number and localization of the SN, with the two injection techniques. Three presented migration only with periareolar injection (axillary), and one presented a migration only with intratumoral injection at the internal mammary SN ($P = 0.6$). The rate of lymph node metastasis was 20%, all detected through both techniques.

Conclusion: There is no difference between PA and ITU technique to identify SN in breast cancer.

320

Poster

One Step Nucleic Acid Amplification (OSNA) as an intra-operative diagnostic tool for the assessment of the sentinel lymph node status in breast cancer patients

C. Schem¹, M. Mathiak², F. Hilpert¹, C. Mundhenke¹, D. Bauerschlag³, W. Jonat¹. ¹University Hospital Schleswig-Holstein, Obstetrics and Gynecology, Kiel, Germany; ²University Hospital Schleswig-Holstein, Pathology, Kiel, Germany; ³University Hospital Schleswig-Holstein, Obstetrics and Gynecology, Aachen, Germany

Background: The detection of sentinel lymph node (SLN) metastases in breast cancer patients is conventionally determined by intra-operative histopathological examination of frozen sections or touch imprints. However, due to a poor sensitivity of these techniques, postoperative identification of metastases on paraffin embedded sections can lead to second surgery axillary lymph node dissection. A more efficient molecular assay called One Step Nucleic Acid Amplification (OSNA) for intra-operative identification of metastatic disease in SLN has been evaluated in several clinical studies. We present here the results from the intra-operative use of OSNA within the operating theatre.

Material and Methods: OSNA includes a short sample preparation step followed by automated measurement of cytokeratin 19 mRNA copy number directly from the homogenate and can be carried out by every laboratory technician after a brief familiarisation phase.

Before homogenisation of the whole node a 1 mm middle slice was reserved for histology. 257 SLN from 110 breast cancer patients were investigated. If OSNA was negative then Haematoxylin & Eosin (H&E) staining was performed every 200 µm; in case OSNA was positive, only one H&E section was made.

Results: Fourteen patients were positive and 81 were negative with both methods. In 4 patients OSNA indicated the presence of a macrometastasis and in 9 patients a micrometastasis whereas histology was negative, a result which was rather expected as about 90% of the tissue was referred to OSNA. The positivity rate obtained by OSNA was 24.5%. In one patient a micrometastasis was found in the 1 mm middle slice and OSNA was negative. One SLN was histology+/OSNA-, indicating CK19 low expression on a protein and RNA level.

Conclusions: OSNA is a standardised, easy to learn procedure for intra-operative detection of SLN metastases in breast cancer patients and prevents patients from a diagnostic delay or second surgery due to a postoperatively diagnosed cancer positive SLN. Since most or all of the tissue can be analysed by OSNA, the chance of a sampling bias due to uninvestigated material is very low.

321

Poster

Usefulness of clinical exploration, ultrasound and MRI for the assessment of axillary lymph nodes status previous to the performance of sentinel node

M. Carrasco¹, M. Vernet-Tomas¹, M. Sastre¹, S. Agramunt¹, S. Gomez-Carballo¹, A. Rodríguez², J.M. Corominas³, R. Carreras¹. ¹Hospital del Mar, Gynaecology, Barcelona, Spain; ²Hospital del Mar, Radiology, Barcelona, Spain; ³Hospital del Mar, Pathology, Barcelona, Spain

Background: The aim of this study was to compare sensibility and specificity of clinical exploration, ultrasound and MRI to assess the status of axillary lymph nodes, as a high detection of positive lymph nodes previous to the surgical procedure lowers the probability of a false negative sentinel node.

Materials and Methods: we retrospectively reviewed T1 and T2 breast cancers not candidate for neoadjuvant chemotherapy, treated in our breast cancer unit from September 2008 to September 2009. Data on clinical exploration (CE), axillary ultrasound (AU) and MRI were reviewed for each patient. The pathology exam of the surgical specimen (sentinel node or lymphadenectomy) was reviewed for each patient and sensibility and specificity were calculated for each exploration method and for the three methods together. Sensibility was also calculated separately in patients with only 1 lymph node affected and in patients with more than one lymph node affected in the pathology exam of the surgical specimen.

Results: 99 patients with T1 and T2 breast cancer were included in the study. Results for CE were found in 34 patients. Sensibility for CE was 41% and specificity 100%. Data on UE were found in 88 patients: sensibility for ultrasound was 28% and specificity 87%. Data on MRI were found in 33 patients: sensibility was 50% and specificity 100%. Data on the three explorations were found in 16 patients: sensibility of the three explorations together was 57% and specificity 100%. In patients with one positive lymph node in the pathology exam of the surgical specimen, sensibility for CE was 16%, for UE was 12.5% and for MRI was 16%. Regarding patients with more than one positive lymph node, sensibility for CE was 66.6%, for UE was 55.5% and for MRI was 100%.

Conclusion: MRI is the exploration with a higher sensibility and specificity to assess the preoperative status of axillary lymph nodes. Sensibility increases using CE, AU and MRI all together. Infiltrated lymph nodes are better detected when more than one node is affected. A careful clinical examination is of great value to assess axillary nodes status, as sensibility and specificity could be even higher than an ultrasound exam.

322

Poster

Intra operative sentinel node metastasis detection in breast cancer by one step nucleic acid amplification: Rennes Cancer Institute experience

F. Godey¹, C. Bendavid², P. Tas³, G. Gandon¹, F. Foucher², S. Rouquette², J. Bancho², J. Leveque². ¹Cancer Institute, Biology, Rennes, France; ²Cancer Institute, Surgery, Rennes, France; ³Cancer Institute, Pathology, Rennes, France

Background: Sentinel lymph node (SLN) biopsy is widely used as a staging procedure in early breast cancer. Conventional methods for intra-operative assessment have a low sensitivity and lead to second surgeries when the SLN is metastatic during post-operative histology. The One-Step Nucleic Acid Amplification OSNA[®] method was validated to detect metastases (≥ 0.2 mm) by amplification of CK19 mRNA on SLN lysates. We report the experience of our institution since we implemented OSNA[®] for intra-operative clinical use.

Methods: From each fresh SLN, a central slide of 1 mm was investigated by first intra-operative touch imprint examination followed by permanent histology. The other 2 parts of the node were completely analysed by OSNA. The analysis is performed on SLN lysates on pure sample preparation and on a diluted sample (1/10). CK19 mRNA copy numbers per