we compared OSNA to histological investigation to determine the suitability of OSNA.
Methods: Surgically obtained SNs were sectioned into three pieces along the major axis. The central piece was sliced into 1 mm wide and sent to a pathologist in an external laboratory for histological investigation with H&E and immunohistochemical staining. The other two pieces were examined with the OSNA method. Both methods were compared in the evaluation of 81 SNs from 52 breast cancer patients.
Result: Both methods yielded the same results in 77 SNs; 63 were metastasis-negative and 14 were metastasis-positive. Two SNs were positive for metastasis on OSNA but negative on histology. Other two SNs were metastasis-negative on OSNA but positive on histology, and these nodes contained only micrometastasis lesion. The concordance rate was 95.1% and specificity was 96.9%. The false positive rate and false negative rate were very low.
Conclusion: OSNA is a very useful technique for the intraoperative analysis of SN metastasis in breast cancer patients. The OSNA analysis results appear to be very reliable. This method is useful not only in major hospitals but also in smaller hospitals where pathologists are not available during an operation.

5147 POSTER

Biological Features of Primary Tumour as Predictors of Ipsilateral Axillary Node Relapse in Elderly Breast Cancer Patients

R. Agresti[1], G. Martelli[1], R. Miceli[1], I. Maugeri[2], C. Pellitteri[2], M.G. Daidone[2], R. Silvestrini[2]. [1]*Istituto Nazionale Tumori, Surgery, Milano, Italy;* [2]*Università degli Studi − Facoltà di Medicina, Surgery, Messina, Italy*

Background: The lymphnode status of the axilla is considered the most important predictive factor of mortality in breast cancer patients and the question on which subgroups could be safely spared from axillary lymphnode dissection is not yet defined. The present study was performed to investigate on the predictive relevance of primary tumour biological markers on the risk of ipsilateral axillary node relapse.
Patients and Methods: The study included 351 elderly breast cancer patients ($\geqslant$ 70 years) with no-palpable axillary nodes and ER positive tumours, submitted to quadrantectomy (70.1%) or quadrantectomy plus radiotherapy (29.9%), without axillary dissection and followed by adjuvant Tamoxifen for at least 2 years.
ER and PgR where assayed by Dextrane-coated charcoal method and cell proliferation was expressed as 3H Thymidine labelled cells (TLI).
Patient follow-up involved clinical, biochemical and radiological assessments at 6 month intervals, for the first 5 years, and once year thereafter.
Results: At a median follow-up of 16 years, in the overall series ipsilateral axillary relapse was directly and significantly associated with proliferation index: 2.1% (95% CI: 0.8−5.6%) in patients with slowly proliferating tumours vs 11.8% (95% CI: 7.7–18.0%) in patients with rapidly ($p = 0.0002$). The difference was consistently observed in patients with pT1 lesions 0.9% (95% CI: 0.1−6.4%) vs 9.3% (95% CI: 4.8–18.1%) ($p = 0.003$) and in patients with pT2−4b lesions 3.9% (95% CI: 1.3–11.8%) vs 14.7% (95% CI: 8.5–25.4%) ($p = 0.019$). In the present series of elderly patients with a ER+ tumours, PgR status by itself showed no predictive relevance but in association with proliferation index was able to identify two subgroups with statistically significant difference in axillary relapse: 2% (95% CI: 0.6−6.2%) in patients with PgR+ and a low proliferation index vs 13.7% (95% CI: 6.8–27.5%) ($p = 0.002$) in patients with opposite biological features.
Conclusion: Cell proliferation of primary breast cancer is an independent predictive factor of ipsilateral axillary relapse risk and could represent a valid, efficacious and low expensive tool to identify patients candidate to axillary surgery.

5148 POSTER

Ex-vivo MRI of Breast Specimen: an Innovative Procedure to Verify the Surgical Removal of Only MRI Detected Lesions

R. Agresti[1], G. Trecate[1], C. Ferraris[1], B. Valeri[1], I. Maugeri[2], C. Pellitteri[1], M.L. Carcangiu[1], G. Martelli[1], D. Scaramuzza[1], D. Vergnaghi[1]. [1]*Istituto Nazionale Tumori, Surgery, Milano, Italy;* [2]*Università degli Studi − Facoltà di Medicina, Surgery, Messina, Italy*

Purpose: Besides the increasing development of MRI as a diagnostic problem solving tool, the need to achieve the histologic diagnosis of the only MRI detected lesions rose progressively up. When Open Surgical Breast Biopsy is request as the last opportunity to get a diagnosis of MRI findings, the challenge remains to demonstrate their effective removal. We designed an innovative procedure to demonstrate MRI highlighted nodules within Breast Surgical Specimen (BSS).
Materials and Methods: Before surgery, MRI diagnostic images were reconstructed in orthogonal views to allow the surgeon to evaluate the true extension of the disease.
Ex-vivo MRI was performed within 15′ after the surgical resection. Technical procedure provided the study of the BSS by means of a surface coil. Two orthogonal Spair sequences allowing fat signal suppression were applied.
To visualize pre-operative MRI lesions, we injected contrast medium (Gd-DTPA) 1′ before surgical incision. Following this procedure, we obtained a BSS where enhancing lesions of former diagnostic examination were newly highlighted and could be visualized on ex-vivoMRI. 27 patients were enrolled in the present study.
Informed consent was requested both before diagnostic pre-operative MRI and before surgery for ex-vivo evaluation.
Results: All MRI detected lesions were retrieved in ex-vivoMRI, including additional foci and dendritic branches not associated with microcalcifications. In 3 cases the further lesions were in another quadrant of the same breast: these patients were submitted to double resection and both BSS were analysed during the same MRI session.
Discussion: Careful assessment of the true extent of the disease in surgical planning for Breast Cancer is mandatory. Several studies report how MRI can improve local staging and depict even conventionally invisible additional foci. Only MRI detected nodules require however pre-operative localization and peri-operatively confirmation of their removal.
Until now, breast lesions were considered to be non-highlightable ex vivo. We succeeded instead in demonstrating the enhancability of breast cancer by means of the same procedure that previously provided the most accurate staging of the disease.
To our knowledge, our method is the first that visualizes neoplastic lesions inside BSS by means of MRI.

5149 POSTER

Breast Cancer After Mastectomy − Long Term Results and Prognostic Factors

A. Boukerche[1], A. Yahia[1], M. Cherigane[1], M. Amri[1], K. Aissaoui[1], A.F. Dali-Youcef[1]. [1]*CHU Oran, Department of Radiation Oncology, Oran, Algeria*

Background: The aim of this study was to determine the clinical characteristics, the therapeutic results and factors affecting disease free survival of breast cancer in women who underwent mastectomy followed by radiotherapy from a series of 231 cases treated in our department over one one year period.
Patients and Methods: A retrospective study of 231 patients with invasive BC who received radiotherapy after mastectomy, between January and December 1998, in our department. Survival curves were estimated by Kaplan–Meier methods. Univariate and multivariate analyses were performed using the Cox proportional hazards regression models.
Results: The median age was of 46.8$\pm$1.9 years (25−77 years). Nineteen tumours were of stage I (8%), 118 of stage II (51%), 70 of stage III (30%) and 24 of unspecified stage (11%). They were CCI in 88% of cases and CLI in 10% of cases. 59% of cases were SBR I or II grade and 41% GIII. The average of histological tumoral size was of 36.1$\pm$2.6 mm (10−95 mm). Seventy patients (30%) have a pT $\geqslant$ 35 mm, 176 (76%) of pN+, with an extra capsular extension in 36% of cases and lymphatic vascular emboles in 32% of cases. 87 patients were presented with RH+. 221 patients (96%) received chemotherapy and/or hormonotherapy. With a median follow-up of 77 months (9 to 127 months), we found 95 recurences (41%) (locoregional relapses, distant and secondary cancer). The 10-year locoregional control (LRC), disease free survival (DFS) and overall survival (OS) rates were 88.7% ($\pm$2.2%), 56.6% ($\pm$3.6%) and 76.2% ($\pm$3.3%), respectively. In univariate analysis, age $\leqslant$40 years ($p < 10^{-3}$; HR:2,349), T3-T4 ($p = 0.001$; HR:2,095), stage III ($p = 0.04$; HR:1,554), pT$\leqslant$35 mm ($p = 0.01$; HR:1,872), pN = 1−3 ($p = 0.04$; H R:1,911), pN > 3 ($p = 0.003$; H R:2,598) and RH- ($p < 10^{-3}$; HR:2,929) had an influence on DFS. In multivariate analysis, DFS was influenced by: tumours classified T3-T4 ($p = 0.05$; HR: 2,388), pN = 1−3 ($p = 0.02$; HR:5,605), pN > 3 ($p = 0.004$; HR:8.9) and RH- ($p = 0.02$; HR:2,432).
Conclusion: Our therapeutic results were satisfactory. The study found that T (T3 or T4), N status (PN+) and RH status (negative) are the most reliable predictors of unfavorable events (a poor DFS), from where interest of a therapeutic intensification in order to improve the results.

5150 POSTER

Intra-operative Specimen Microradiography in Wide Local Excision of Breast Cancer

L. Savage[1], G. Pilgrim[1], H. Hamed[1]. [1]*Guy's Hospital, Department of Breast Surgery, London, United Kingdom*

Introduction: Methods have been sought to reduce the need for re-excision following wide local excision of breast cancer. Methods include departmental specimen x-ray [1], intraoperative ultrasound [2] and fresh frozen section [3]. Our tertiary referral unit uses a cabinet microradiography system (Faxitron) for intra-operative assessment of tumour margins. This pilot study aims to assess the impact of this method on re-excision rates.