

retrospective group (n = 392) who underwent BCS only from January 2000 to February 2003. Cavity shaves and re-excision specimens were measured and orientated with reference to the primary cancer. Pathological results of all the specimens were analysed and re-excision rate in both groups were recorded. The decision to re-operate was based on the outcome of the multi-disciplinary meeting. Patients who opted for mastectomy or who had multifocal disease were excluded from the study. Statistical significance was assessed using Chi-Square test and accepted if $p < 0.05$.

Results: Compared to BCS alone where 49 of 392 patients (12.5%) required reoperation for margin clearance, only 22 of 394 patients (5.58%) of the group who had concurrent cavity shaves required further surgery ($p < 0.01$). Analysis of re-excised specimens suggested that re-operation could have been avoided in 44 of 49 patients, if they had standard sized cavity shave at primary operation.

Conclusion: We conclude that cavity shavings during primary breast conserving surgery significantly reduce the re-excision rate to achieve microscopic tumour clearance. We would recommend adopting routine cavity shaving at the time of primary BCS.

100

Poster

Internal mammary lymph nodes: results of surgical methods of staging and treatment

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Background: According to different authors the rate of the internal mammary lymph nodes (IMN) metastasis in breast cancer patients is in the range between 12 and 55%. Unfortunately nowadays there is the lack of the preoperative non-invasive routine techniques for the definite preoperative detection of the IMN involvement.

Methods: During 1998–2005 1269 patients underwent either videothoroscopic IMN dissection (VIMND) (828 women) or IMN biopsy (IMNB) through I-III intercostal space (441 women) during regular mastectomy or radical resection of the breast. Only patients with verified IMN metastasis underwent radiation therapy (RT) at this zone. RT at the breast and axilla was performed according to regular indications. All the patients received chemotherapy and hormonal therapy if necessary.

Results: 249 of all the patients (19.6%) had morphologically verified metastasis in IMN. In 5.2% IMN involvement was detected without axillary lymph node metastasis. Very low rate (2.3%) of intra and post-surgical complications connected to VIMND could be registered in all the patients. No specific complications were detected during or after IMNB. No recurrence in parasternal region was detected in non-radiated women in 7-year follow-up period. Overall and disease free survival is better in women who underwent VIMND in comparison with those after IMNB in IMN positive patients.

Conclusion: Both techniques could be recommended to the breast cancer patients for the correct staging. Only patients with verified metastasis at IMN should receive radiation therapy at this zone. VIMND could be considered as a treatment procedure. We are considering of changing radiation modality in IMN positive patients after VIMND.

101

Poster

Sentinel lymph node biopsy as an alternative to axillary lymph node dissection after neoadjuvant chemotherapy

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We analyzed the data of sentinel lymph node biopsy (SLNB) after neoadjuvant chemotherapy for identification rate, false-negative rate (FNR), negative predictive value (NPV), and accuracy by comparing the results obtained from the patients without chemotherapy. From October 2001 to July 2005, a total of 875 patients who underwent SLNB and axillary lymph node dissection (ALND) at the Center for Breast Cancer, National Cancer Center Hospital were included. 238 of these patients received neoadjuvant chemotherapy. The sentinel lymph node (SLN) was mapped by radioactive colloid alone or in combination with dye. The overall SLN identification rate was 92.5% (809/875): 79.0% (188/238) after neoadjuvant chemotherapy versus 97.5% (621/637) without neoadjuvant chemotherapy. It suggests that the neoadjuvant chemotherapy significantly affects lymphatic mapping ($P < 0.001$). In the patients with neoadjuvant chemotherapy, there were 8 false negatives in 188 successfully mapped tumors with FNR of 6.0% (8/134), NPV of 87.1% (54/62), and an accuracy of 95.7% (180/188). In the patients without neoadjuvant chemotherapy, 26 of 621 patients were false negative with FNR of 7.4% (26/352), NPV of 91.2% (269/295) and

accuracy rate of 95.8% (595/621). These results were not statistically different between two groups ($P > 0.05$).

In spite of decreased identification rate of SLN by neoadjuvant chemotherapy, SLNB could still predict axillary nodal status, and therefore could possibly replace ALND in the presence of successfully identifiable SLNs.

102

Poster

Should full axillary clearance be the standard procedure in node positive axilla?

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Management of the axilla in patients with invasive early breast cancer has been one of the most debated issues. As much as 60% of cases with invasive breast cancer have no evidence of axillary node involvement. The emergence of SNB technique has aimed at avoiding radical treatment of the axilla in node negative patients. However there is universal agreement that axilla with evidence of nodal involvement has to be treated adequately at least to minimise local recurrence. However there is not such an agreement to what is adequate? The benefit of radical treatment has to be measured against morbidity. Therefore the rationale for the continuing practice of total axillary clearance is presented in this study.

Methods and Patients: A series of 1565 consecutive cases of invasive breast cancer that had full axillary clearance (Level I+II+III) was studied. Of these 576 (37%) were found to have axillary nodal involvement. The Pathologist was able to identify different groups of nodes as levels were marked during the operation by the surgeon using black sutures. This study is focusing on the 576 cases with involved axillary nodes.

Results: In these 576 cases, 14,469 (average 25) nodes were recovered and 2661 (18.4%) with average number of 4.6 were involved. As expected the majority of nodes recovered were in level I (9215 = 64%) as well as involved nodes (1894 = 71%). Of these 64.6% had involved nodes in level I only, 1.4% in level II, 1.7% in level III and 0.9% in level II+III only. In this series therefore, 4% of the cases had no nodes involved in level I. Level III either alone or with other levels was involved in 22.5% of the cases.

Summary: Although the majority of nodal involvement was limited to level I, there was a substantial number with level II and/or III affected. Limited dissection to level I would have left involved nodes in 35.4% of cases and in 4% would have under staged the diseases. Even if level I+II were cleared, this would have missed 22.5% of cases in whom level III was also involved.

Conclusion: Where there is evidence of nodal involvement, axillary clearance should be performed. Further work is being carried out to identify the subgroups that can be safely treated with less than full axillary dissection and reducing further the morbidity of axillary surgery.

103

Poster

Multiple operations to attain therapeutic clearance in breast conserving surgery – a common phenomenon?

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Introduction: The British Association of Surgical Oncology (BASO) recommends that "90% of women having breast conservation surgery (BCS) should have no more than two therapeutic operations."

Aim: The aim of this study was to determine the incidence of further surgery in patients undergoing BCS.

Methods: 106 patients who had BCS at the Bristol Royal Infirmary for 110 breast carcinomas between January and December 2002 were reviewed retrospectively. Patient demographic and clinico-pathological data was collected.

Results: Patients' mean age was 59 years (range 30–89). Of the total tumours, 22 (20%) had invasive disease only, 16 (15%) were DCIS only, and 72 (65%) had both in-situ and invasive disease. Overall, 32 tumours (29%) required further surgery (28 tumours required 2 operations, 4 tumours required ≥ 3 operations). Factors that were associated with further surgery included age ($p = 0.036$), mammographic size of tumour ($p = 0.03$), macroscopic dimension of tumour ($p = 0.028$), invasive tumour size ($p = 0.003$), histology of invasive ($p = 0.05$) and in-situ ($p = 0.013$) lobular carcinoma and Her-2 receptor status ($p = 0.031$). Interestingly, performing cavity shaves did not significantly reduce the incidence of further surgery ($p = 0.848$).

Conclusion: In accordance to BASO guidelines, 106 cancers (96%) excised via BCS required ≤ 2 operations to attain therapeutic clearance. The identification of factors associated with further surgery may better characterise patients in whom BCS may be challenging.