Loco-regional therapy

SENTINEL NODE BIOPSY IN THE EARLY BREAST CANCER HOSPITAL COMARCAL LA LINEA

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Objective: To determine the identification and the percentage of the false negative of the sentinel nodes in patients with early breast cancer Hospital La Linea, during the period 2007 to 2010.

Methods: We collect fifty patients with early breast cancer, without clinical and ultrasonographic involvement of axillary nodes, from November 2007 to September 2010. We use the vital dye in the first twenty patients, and the combined technique with vital dye and albumin labeled with technetium 99 in the other thirty patients. The site of injection for patients who use blue dye was the subdermal near to the tumor, and to the patients who use the technetium was the periareolar technique. The sentinel node biopsy was examined during the surgery. The sentinel node was cut through its long axis and then with fine cuts of 250 microns, with freezing technique. The axillary dissection was completed in the first seventeen patients, and in the remaining patients we performed total axillary dissection if the sentinel node was positive for metastasis.

Results: Sentinel nodes were identified in 49 of 50 patients (98%), procedures. The only case where we did not identify the sentinel node was a patient in the combined technique. The percentage of nodes identified in the patients with vital dye was one sentinel node, and in the patients who use technetium the percentage was two sentinel nodes. The false negative rate was 8% (4 patients), in three of them we found a micrometastasis in the final examination, in the other one we found a macrometastasis. This cases of false negative in the sentinel node biopsy occurred at the beginning of the study. Pathologists acquired a learning curve for sentinel node examination, and practiced subsequently fine cuts in the intraoperative examination of the sentinel nodes.

Conclusion: This experience indicates that intraoperative examination of sentinel node biopsy is crucial for staging of the axilla. The rate of identification of sentinel node is excellent and with the use of the technetium the technique is more accurate. The improvement in the learning curve about the intraoperative examination of the sentinel node biopsy has decreased our rates of false negatives.

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EXCISION OF EXTRA MARGINS IN BREAST-CONSERVING SURGERY AT THE TIME OF PRIMARY OPERATION – ARE THERE ANY CLINICAL OR PATHOLOGICAL FACTORS ASSOCIATED WITH CORRECT DECISION-MAKING?

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Introduction: Involved margins in breast-conserving surgery (BCS) are associated with increased risk of local recurrence. In our institution, it is our practice to remove extra adjacent margins of tissue at the time of primary operation if the surgeon feels that tumour excision is incomplete. The aim of this study was to determine the proportion of necessary versus unnecessary intra-operative extra margin excisions and to determine whether there is any patient or pathological factors associated with making a correct decision.

Methods: Retrospective study of patient records and pathology reports, for 100 consecutive patients undergoing BCS for primary breast cancer at our institution, from 2011-2012. Statistical analysis was performed using Student’s t-test, chi-squared test and a logistic regression model.

Results: 86% of all patients had extra tissue removed for suspected involved or close margins. The decision to take extra tissue was correct in 48%. As a result, further surgery was prevented in 53% of these patients. Appropriate extra margin excision was significantly associated with younger patient age (P < 0.05), whole tumour diameter (P = 0.10) and in situ disease alone (P = 0.05). For invasive tumours, there was also a significant association with tumour size (P = 0.05) and the presence of associated in situ component (P = 0.05) whether or not it increased total tumour size. There was no association between correctly taking extra margins and lymph node status.

Conclusion: Removing the entire tumour with adequate margins in BCS prevents subjecting a patient to further surgery. Conversely, unnecessarily removing uninvolved extra tissue at primary operation in an attempt to prevent re-operation, may impact negatively on breast cosmesis and increases the workload for the Pathologist. This study suggests that older patients, those with small tumours and invasive as opposed to in situ disease are more likely to have extra margins removed unnecessarily. Larger scale studies may help to clarify how we can select patients more accurately for intra-operative margin excision.

Disclosure: All authors have declared no conflicts of interest.

ANALYSIS OF LOCAL-REGIONAL RECURRENCE IN YOUNG WOMEN (≤ 35 Y) RECEIVING MASTECTOMY FOR OPERABLE BREAST CANCER

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Purpose: Young women with breast cancer have a higher risk of local-regional recurrence (LRR) than older women. The study aimed to determine risk factors for LRR and the impact of post-mastectomy radiotherapy (PMRT) in women ≤ 35 years old.

Materials and methods: This is a retrospective analysis of 459 women, all ≤35 years old, who were treated with mastectomy for breast cancer between 1989 and 2004. Chemotherapy was given to 423 patients, and 160 patients received endocrine therapy. PMRT was administered in 220 patients (47.9%). Statistical analysis was carried out with SPSS, version 16.0 (SPSS Inc, Chicago, IL).

Results: The median age of this cohort was 32 years, and median follow-up was 50.1 months. The median disease-free interval before the first isolated local-regional recurrence (LRR) was 18.8 ± 2.7 months. The 5-year and 10-year isolated local-regional control rates were 74.9% and 70.0%, respectively. Compared to the patients without ILRR, patients with ILRR had a shorter 5-year metastasis-free survival (MFS; 66.6% vs. 53.8%, P = 0.003). In univariate analysis, surgical modality, tumor size, lymphnode status, chemotherapy and ILRR were significant predictors for overall survival (OS). In multivariate analysis, higher T stage (P = 0.047, HR = 1.58, 95% CI = [1.02-2.42]) and higher N stage (P = 0.005, HR = 1.57, 95% CI = [1.15-2.78]) were independent predictors for ILRR. Higher T stage (P = 0.014, HR = 1.52, 95% CI = [1.09-2.12]), higher N stage (P < 0.001, HR = 2.25, 95% CI = [1.67-3.03]), endocrine therapy (P = 0.014, HR = 0.59, 95% CI = [0.39-0.90]) and ICWR (isolated chest-wall recurrence) (P = 0.006, HR = 1.87, 95% CI = [1.20-2.91]) were independent predictors for MFS. In terms of OS, all factors above were independent prognostic factors, except for the use of endocrine therapy.

Conclusion: Young women with operable breast cancer receiving mastectomy are at high risk for ILRR and appear to have a shorter disease-free interval than older women. It is critical to re-evaluate the impact of PMRT in young patients. The chest wall is at high risk of recurrence and should not be neglected as a PMRT target.

Disclosure: All authors have declared no conflicts of interest.

WHEN IS A CLOSE OR POSITIVE MARGIN FOLLOWING A MASTECTOMY AN INDICATION FOR CHEST WALL RADIOTherapy IN PATIENTS WITH T1N0 BREAST CANCER?

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Background: Since a mastectomy for T1N0 breast cancer generally results in very high rates of local control, radiation oncologists are only consulted when close or positive margins are encountered in this setting. The actual length of margins below which the risk of local failure increases and the rate of local recurrence in this subset of patients is, however, not well defined in the literature. Here we report our experience with these patients in this retrospective analysis.

Disclosures: None.
Materials and methods: Of the women who underwent a mastectomy for pT1NO breast cancer from 1994 through 2004 at our institution, 256 had an invasive and in-situ margins of <10mm and were included in this review. The following factors were analyzed for local recurrence: the length of the closest margin, location of closest margin (deep or other), histology (ductal, lobular, other), coexisting DCIS, multifocality or multicentricity, age, type of surgery (simple/skin sparing/total mastectomy, modified radical mastectomy), grade, lymphovascular invasion, hormone receptor status, adjuvant hormonal therapy, and adjuvant chemotherapy.

Results: Median follow-up for surviving patients was 7.2 years. Chest wall recurrence was found in 8 patients (3.1%) at a median interval of 2.2 years, one of whom had a simultaneous axillary recurrence. Isolated axillary failure was noted in one patient. The incidence of chest wall recurrence was 6.5% for those with margins ≤3 mm (N = 107) vs 0.7% when margins were >3 mm (P = 0.02). Additionally, 7.9% of those with high-grade disease had a chest wall recurrence compared to 1.1% in those with grades 1-2 (P = 0.01). Among 28 patients with both high-grade disease and margins ≤3 mm, 6 (21%) developed chest wall recurrences. No other factors were found to be predictive of local recurrence. Of note, only one of eleven patients with positive margins had a chest wall recurrence.

Conclusions: This analysis suggests that although postmastectomy patients with T1N0 breast cancer with margins ≤3 mm have an elevated risk of chest wall recurrence, only those with the additional risk factor of high-grade disease appear to have a sufficiently high risk to merit strong consideration of chest wall radiotherapy.

Disclosure: All authors have declared no conflicts of interest.

Adjuvant postmastectomy hypofractionated radiotherapy in Egyptian cancer patients, a 2 years follow-up
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Aim: The use of conventional fractionation has been the standard practice for adjuvant postmastectomy radiotherapy in Egypt. Results of START A and START B Trials motivated us to investigate the use of 40 Gy in 15 fractions in adjuvant post-mastectomy radiotherapy and to document acute and 2-year late toxicity.

Materials and methods: 235 women who underwent modified radical mastectomy for treatment of invasive breast cancer were randomized either to receive 50 Gy in 25 fractions (122 patients, group A) or 40 Gy in 15 fractions (113 patients, group B).

Results: The patients’ and disease characteristics were comparable in both groups. Acute Skin toxicity occurred in 9 patients (7.3%) in group A (7 with grade 2 and 2 with grade 3), and in 7 cases (6.2%) in group B, 6 cases had grade 2 toxicity and 1 case had grade 3. None of the patients in both groups had grade 4 toxicities. Late skin toxicity occurred in 1 patient (0.8%) in group A and was of grade 2. Radiation pneumonitis occurred in 7 cases (5.7 %) in group A, and in 5 cases (4.2%) in group B and all were grade 1-2. One case in group A developed grade 3 left ventricular systolic dysfunction. Lymphoedema occurred in 3 cases (2.45 %) in group A, 2 cases were of grade 1-2 and 1 patient had grade 3. While in group B, lymphoedema occurred in 2 cases (1.76 %), 1 case had grade 3 lymphoedema and 1 patient had grade 1-2. Acute and late toxicities were comparable in both groups. Relapse occurred in 43 cases (18.29 %), 24 cases (19.6%) in group A, among them, 2 cases had local recurrence, and 1 case had local and systemic relapse, the rest had systemic relapse. Relapse occurred in 19 patients (16.8%) in group B, 7 cases had systemic relapse, and 1 had local and systemic relapse. One case in group A (0.8%) developed contralateral breast cancer and one died because of breast cancer recurrence. There was no statistically significant difference among the two groups regarding local control or disease free and overall survival. The treatment interruptions, cost of treatment and work-load were lower in group B.

Conclusions: Hypofractionated postmastectomy radiotherapy offers local control and adverse effects comparable to the conventional fractionation with the advantage of reducing work load and cost of treatment.

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Role of interstitial brachytherapy in early stage breast cancer
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Aim: To assess the quality of high dose rate interstitial implants in breast cancer by using different volumetric indices and to correlate them with skin and subcutaneous tissue toxicities.

Background: In recent years brachytherapy by using high dose rate with Ir192 source for partial breast irradiation as well as boost after external irradiation has been an established modality of treatment of early breast cancer. Despite the advantages of brachytherapy with regard to tumor control, maintaining good cosmesis and minimum skin and subcutaneous tissue toxicity is important.

Materials and methods: Out of 25 patients, who were selected for interstitial implants after undergoing breast conservation surgery, ten were treated radically with 34 Gy in 10 fractions in 5 days @ 3.4 Gy twice daily and 15 patients received boost dose of 12 Gy in 4 fractions @ 3 Gy twice daily. The median follow up was 20 months. During each follow up assessment of late skin and subcutaneous tissue toxicity as per RTOG criteria was done. Various dosimetric indices were analysed. Dose Volume Histogram for dose per unit volume of skin for 10cc, 5cc, 2cc, 1cc, 0.1cc and 0.01cc was calculated. Best estimates and correlation of toxicity was revealed by assessment of Dose Non-uniformity Ratio (DN R) which also correlated well with geometry defining indices like Uniformity Index (UI).

Conclusion: Volumetric assessment of skin dose for less than 2 cc correlated most with toxicity. DNR and UI can help us to assess and correlate late skin and subcutaneous tissue toxicity and thus serve useful to determine the quality of implant.

Disclosure: All authors have declared no conflicts of interest.

Study of dose distribution of tangential beam intensity modulated radiotherapy compared to tangential beam 3D conformal radiotherapy of chest wall in post mastectomy breast cancer patients
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Aims and objectives: To compare the dose distribution of tangential beam intensity modulated radiotherapy with tangential beam 3D conformal radiotherapy of chest wall in post mastectomy breast cancer patients.

Methods: Patients coming to department of radiotherapy, SMS Medical College were selected for the study for 20 subsequent postmastectomy breast cancer patients tangential beam IMRT and tangential beam 3D CRT plans were generated for the radiotherapy of the chest wall. The prescribed dose was 50 Gy in 25 fractions. Dose-volume histograms were evaluated for the PTV and organs at risk. Parameters of the dose distribution were compared using the Wilcoxon matched pairs test.

Results: Tangential beam IMRT statistically significantly reduced the ipsilateral mean lung dose by an average of 21% (1129 cGy versus 1437 cGy). In all patients treated on the left side, the heart volume encompassed by the 70% isodose line (V70%: 35 Gy) was reduced by an average of 43% (5.7% versus 10.6%), and the mean heart dose by an average of 20% (704 cGy versus 877 cGy). The PTV showed a significantly better conformity index with IMRT; the homogeneity index was not significantly different.

Conclusions: Tangential beam IMRT significantly reduced the dose-volume of the ipsilateral lung and heart in unselected postmastectomy breast cancer patients.

Disclosure: All authors have declared no conflicts of interest.

Cosmetic results of high dose rate brachytherapy boost versus electron beam boost in the treatment of early breast cancer
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Objective: To evaluate the effect of high dose rate brachytherapy (HDR BT) boost versus electron beam boost on local tumor control, side effects and cosmesis after breast conserving surgery (BCS) in early breast cancer.

Methods: 40 women with stage I-II breast cancer who underwent BCS were treated by 50 Gy adjuvant radiotherapy to the whole breast and then randomly assigned to receive 15-16 Gy boost to the primary tumor bed either with HDR BT or electron beam using linear accelerator. Breast cancer related events and cosmetic results were assessed over one and a half year.

Results: There was no significant difference in local tumor control between patients treated with electron or HDR BT boost over a period of one and a half year. Patients in the electron group had better cosmesis, and decreased fibrosis and pigmentation than those in the implant group.

Conclusions: Patients with early breast cancer after undergoing BCS and whole breast irradiation have better cosmetic results and reduced chances of fibrosis when they are given electron boost as compared to HDR BT boost.

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EFFECT OF LOCAL SURGICAL TREATMENT ON SURVIVAL IN METASTATIC BREAST CANCER PATIENTS

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Introduction: Distant metastatic breast cancer is considered to be an incurable disease and therefore is only treated with palliative intent. Local treatment is recommended only if the primary tumor is symptomatic. However, recent studies challenge this approach, suggesting that removing the primary tumor may lead to an overall improved survival. We retrospectively reviewed patients who underwent surgical removal of the primary tumor while they were metastatic as regards survival and clinico-pathological data.

Patients and methods: In a retrospective review of our database, we collected data of 80 patients who were presented at Menofia oncology department with metastatic breast cancer (MBC) excluding patients above 70 years old and patients with performance status > 2. Patient characteristics and survival were reviewed between the surgical group and non-surgical group.

Results: Of the 80 patients with MBC, 40 (50%) underwent surgery either modified radical mastectomy (MRM) or conservative surgery, other 40 (50%) started treatment without surgery. Mean age at diagnosis was 47.3 ± 14.4 years. 15% were positive and 33% negative for hormone receptors and 21% were ER positive. The median survival by 11 months. The results of this study show the positive impact of surgery of the primary tumor on overall survival of patients with metastatic breast cancer (MBC). Women who have received surgical treatment of primary tumor on survival outcomes was already started at our department to assess these results.

Conclusion: In our experience here at Menofia oncology department we concluded that surgery of the primary tumor in patients presented with MBC is associated with significantly improves the prognosis of metastatic breast cancer. Women who have received surgery 3 and 5-year overall survival in patients of group 1 was 44% and 33% respectively. The median survival by 11 months. The observed morbidity was 5.8% and mortality was 0%. Tumor size was 13-47mm (median 26mm), 10 patients were oestrogen receptor (ER) negative and 7 were positive. 100% disease free survival has been observed. The follow-up range was 8-54 months (median 39 months).

Disclosure: All authors have declared no conflicts of interest.

ASSOCIATION OF SURGERY WITH IMPROVED SURVIVAL IN PATIENTS WITH METASTASES AT DIAGNOSIS OF BREAST CANCER

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Background: The aim of this study was to investigate the influence surgery of primary tumor on overall survival of patients with metastatic breast cancer (MBC).

Patients and methods: The study included women aged 23 to 81 (55 ± 11) years old, living in Kiev at the time of diagnosis with MBC from 2004 to 2006. Among the 121 patients the effect of surgical treatment of primary tumor on survival outcomes was evaluated in 42 women (group 1) with metastases at diagnosis of breast cancer. The remaining 79 patients (group 2) no received surgical treatment. All patients received systemic cytotoxic chemotherapy and radiation therapy. The Kaplan-Mayer method was used to estimate the patient’s survival rate.

Results: 3 and 5-year overall survival in patients of group 1 was 44% and 33%, whereas those of patients of group 2 were 15% and 7%, respectively. The median survival for patients who underwent surgery was 30 months versus 19 months in patients who have not received surgery.

Conclusions: This study shows that surgery of the primary tumor in breast significantly improves the prognosis of metastatic breast cancer. Women who have received surgery and 5-year overall survival rate increased by 29% and 26%, and median survival by 11 months. The results of this study show the positive impact of surgery on the prognosis of metastatic breast cancer. However, further research should be aimed at establishing criteria for selecting patients with metastatic breast cancer patients for surgery.

Disclosure: All authors have declared no conflicts of interest.

WIDE LOCAL EXCISION OF BREAST CANCER UNDER LOCAL ANAESTHETIC: A TREATMENT OPTION

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Introduction: Elderly and medically unfit patients make up a small but significant proportion of breast cancer patients.

Methods: A prospective study of breast cancer wide local excisions (WLE) performed under local anaesthesia (LA) from Mar 2008 to Apr 2011.

Results: 17 patients were included, with average age of 81 years (range 59 – 94 years). 10 patients had American Society of Anaesthesia (ASA) grade 3 and 7 patients had ASA grade 2. Mini mental state examination (MMSE) range was 8-10 (average 8.75). Preoperative Portsmouth Physiologic and Operative Severity Score for enumeration of Mortality and Morbidity (PPOSSUM), score predicted morbidity at 28.5% (range 15 – 60%) and mortality at 1.8 % (range 0.1 – 6.1%). The observed morbidity was 5.8 % and mortality was 0%. Tumor size was 13-47mm (median 26mm), 10 patients were oestrogen receptor (ER) negative and 7 were positive. 100% disease free survival has been observed. The follow-up range was 8-54 months (median 39 months).

Conclusions: WLE of breast cancer under LA is a useful option. All patients in this selected 'unfit' group were treated as day cases. All patients currently remain disease free.

Disclosure: All authors have declared no conflicts of interest.