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Abstract 1

“Does Mammography Affect the Nodal Status at Presentation in 40-49 year old Breast Cancer Patients?”

Lisa Hopkins, MD, Sumy Chang, MD, Laurie Kirstein, MD, Tamara Fulop, MD, Stephen Malamud, MD, Manjeet Chadha, MD, Susan Boolbol, MD

Introduction:

It has been demonstrated that mammographically detected breast cancers present at an earlier stage than those detected by palpation, even in women age 40-49. It is known that the most important prognostic indicator in breast cancer is lymph node status. In this study, we sought to determine whether detection of breast cancer in 40-49 year old women by mammography is associated with negative nodal status at presentation.

Methods:

A prospective database was reviewed to identify women age 40-49 diagnosed with invasive breast cancer from 1984-2008. The method of detection of the breast cancer was noted, and the lymph node status at presentation was identified.

Results:

There were 427 eligible patients with invasive breast cancer in the database, 188 diagnosed by mammography, and 239 with a palpable abnormality. In the group whose cancers were detected on mammography, 50.5% presented with lymph node metastases. This was significantly lower than the 60.3% of those who presented with a palpable finding ($p < 0.05$). For 40-49 year old women with invasive breast cancer, the likelihood of having a positive lymph node at presentation is 1.5 times higher if her cancer was detected as a palpable abnormality rather than on mammography (CI: 1.01-2.18) (Table 1).

Conclusions:

A patient diagnosed with invasive breast cancer in her 40s is more likely to present with lymph node metastases if her cancer is detected as a palpable mass, compared to those detected on mammography. This has prognostic importance, and provides an additional rationale for performing screening mammography in this age group.

Abstract 2

“Degree of Estrogen Receptor Expression and Breast Cancer Subtype in Patients Treated with Accelerated Partial Breast Irradiation”

J. Ben Wilkinson, MD, Mitul B. Amin, MD, Chirag Shah, MD, Simona F. Shaitelman, MD, Laura Nadeau, MD, Peter Y. Chen, MD, Frank A. Vicini, MD

Purpose:

To determine whether degree of estrogen receptor expression (ERE) affects outcomes for patients treated with APBI based on breast cancer subtype (BCST).

Materials/Methods:

We studied 295 patients treated with interstitial brachytherapy (n=45), balloon-based brachytherapy (n=146), and 3D-CRT (n=104). Luminal A (LA), luminal B (LB), and basal (B) BCST were assigned using ER, PR, and HER-2/neu receptor status. Degree of ERE by IHC staining was also used to assign BCST (LA >70%, LB <70%). 184 patients had all three receptors tested [LA=135 (74%), LB=30 (16%), B=19 (10%)], which were submitted for analysis (IBTR, RNF, DM, OS, DFS, CSS).

Results:

Median follow-up was 4.9 years. Mean tumor sizes were 10.3mm (LA), 11.0mm (LB), and 11.4mm (B). Basal BCST had higher histologic grades ($p<0.001$) and were more often African American (22% B vs. 3% LA/LB, $p<0.001$). Margin/nodal status were similar among BCSTs. ERE reclassified 20 patients (11%) as LB, but this did not affect clinical outcomes. At five years, rates of IBTR and RNF were < 3.5% and not statistically different ($p=0.617$, $p=0.506$). The LB subtype had a higher, but non-significant, rate of DM (5.4% vs. 0%-1.0%, LA/LB, $p=0.118$). OS (93%, 90%, 100%), DFS (98%, 92%, 100%), and CSS (99%, 98%, 100%) were also not statistically different ($p=0.326$, $p=0.244$, $p=0.189$).

Conclusion:

Degree of ERE may be useful in further classifying BCST, but does not appear to affect clinical outcomes. In our patient population, local control rates five years after APBI are excellent for both luminal and triple-negative phenotypes of early-stage breast cancer.

Abstract 3

“Routine Cavity Shave Margins: Impact on Volume Excised and Cosmesis”

Julie Mook, MD, Rebecca Klein, MD, Sumeet Teotia, MD, David Euhus, MD,
A. Marilyn Leitch, MD, Amy Moldrem, MD, Roshni Rao, MD

Objective:

Cavity shave margin (CSM) removal is a surgical technique that reduces re-excision rates. One criticism of this technique has been that negative margins are obtained primarily due to higher volumes of tissue removed. This study evaluates the volume of tissue removed in a group that underwent CSM versus one that underwent standard partial mastectomy (SPM) and explores cosmetic outcomes.

Methods:

Single institution retrospective review identified 533 patients with a diagnosis of breast cancer who underwent PM. Matched pair analysis of 72 patients that had undergone PM with CSM versus 72 who had undergone SPM was performed. Volumes were calculated from dimensions in the pathology report. A subgroup was analyzed for cosmetic outcome using the Harvard Breast Cosmesis Grading Scale by a multidisciplinary panel.

Results:

Mean tumor size in the CSM group was 1.52 cm³ versus 1.51 cm³ in the SPM (p=0.8073). Mean total volume of tissue excised with CSM was lower than the SPM group. Mean volume of the CSM group was 80.66 cm³ and 165.1 cm³ in the SPM group (p=0.0005). Patients undergoing CSM required fewer (13) re-excisions (18.1%) versus 25 (34.6%) in the SPM group (p=0.0367). Mean score for cosmesis was 2.11 in the CSM group and 2.41 for SPM (p=0.5571).

Conclusions:

CSM decreases the need for re-excision. Total tissue volume excised is lower in patients who undergo CSM, and cosmetic results appear to be equivalent. This approach should be considered for all patients undergoing PM.

Abstract 4

“Immediate Single-Stage Reconstruction of the Breast Utilizing FlexHD and Implant Following Skin-Sparing Mastectomy”

Philip C. Bonanno, MD, Michael H. Rosenberg, MD, David A. Palaia, MD,
Anthony Cahan, MD, Sharon DeChiara, MD, Karen Arthur, MD,
Danielle DeLuca-Pytell, MD, Kathryn Spanknebel, MD, Rafael Magana, MD (Fellow)

Primary reconstruction of the breast is the standard of care for patients undergoing a mastectomy for breast cancer. Benefits of this include an improved self image and enhanced aesthetic outcome. As a modification of the current technique involving acellular dermal matrix (ADM), we propose a different approach involving a new form of ADM known as FlexHD. This method allows for primary reconstruction of the breast mound with implant after a skin-sparing mastectomy in a single procedure. This report involved a total of 50 patients (85 breast reconstructions) over a period of 20 months who underwent immediate reconstruction with this method using a silicone gel mammary implant. The results show a superior aesthetic outcome and patient satisfaction with few complications and decreased postoperative pain. Our experience suggests single-stage breast reconstruction with FlexHD is a preferred approach to the primary reconstruction of the breast after mastectomy.

Abstract 5

“The Impact of Pilates method on physical parameters and quality of life for breast cancer survivors after mastectomy”

Daniela Stan, MD, Sarah Rausch, PhD, Kathleen Sundt, RN, PMA-CPT,
Andrea Cheville, MD, Jim Youdas, PT, David Krause, PT, Sandhya Pruthi, MD

Purpose:

Pilates exercises are marketed extensively as successful rehabilitation intervention for breast cancer survivors, despite little scientific evidence. We examined the feasibility of using the Pilates method in postmastectomy breast cancer survivors and impact on psychological and physical parameters.

Methods:

Fifteen breast cancer survivors were recruited in a one-arm interventional study of 12 weeks of Pilates exercises. We measured recruitment, adherence to intervention and attrition. Changes in shoulder range of motion, neck flexibility, posture, height, lymphedema measurements and symptoms, quality of life, mood and body image from pre- to post-intervention were examined.

Results:

Of the 26 eligible patients, 15 (58%) enrolled and 13/15 (87%) completed the study. Seven (54%) were compliant and ten (85%) performed more than 50% of the recommended sessions (mean 31 sessions, range 17-42). Statistically significant improvements emerged for shoulder abduction ($p=0.002$) and internal rotation ($p=0.028$) on the affected side, neck rotation towards the unaffected side ($p<0.001$) and neck flexion ($p=0.046$). An increase in the volume of the affected side arm ($p=0.003$) and in the interlimb volume ($p=0.024$) was seen. Improvements were seen in quality of life (FACT-B Total score $p<0.001$), mood (POMS Total score $p=0.001$) and certain subscales of body image.

Conclusion:

This study suggests a high interest and adherence of breast cancer survivors postmastectomy to a program of Pilates exercises. The improvements in psychological and physical outcomes are promising and deserve further examination in randomized controlled studies. The increase in the affected arm volumes relative to the unaffected arm also warrants further investigation.

Abstract 6

“OCCUPATION AND BREAST CANCER: Results of a national population-based survey”

Kanika Kalra, MD, Anees B. Chagpar, MD

Introduction:

Data regarding which occupations are associated with breast cancer risk are inconsistent. The purpose of this study was to evaluate, in a nationally representative population-based survey, the correlation between current occupation and breast cancer history.

Methods:

The 2009 National Health Interview Survey (NHIS) were queried to determine the association between current occupation and history of breast cancer. Statistical analyses were performed using SAS and SUDAAN software.

Results:

27,731 American adults were surveyed representing 227,371,068 individuals in the civilian, non-institutionalized US population. Of these, 438 (1.45%) had a previous history of breast cancer; 4 of these breast cancer survivors (1.1%) were male, and 434 (98.9%) were female. Compared to individuals in management occupations, those in business and financial operations (OR: 3.34, 95% CI: 1.62-6.92, $p=0.0012$), education, training and library occupations (OR: 2.09, 95% CI: 1.13-3.87, $p=0.0192$), healthcare practitioners and technical operations (OR: 2.44, 95% CI=1.18-5.04, $p=0.0165$), healthcare support occupations (OR: 2.55, 95% CI: 1.16-5.61, $p=0.0197$), personal care and service occupations (OR: 2.56, 95% CI: 1.25-5.24, $p=0.0104$), and office and administrative support occupations (OR: 2.50; 95% CI: 1.48-4.22, $p=0.0006$) had a higher rate of breast cancer; while those in architecture and engineering (OR: 0.09, 95% CI: 0.01-0.68, $p=0.0196$), construction and extraction (OR=0.21; 95% CI: 0.07-0.64, $p=0.0063$) and installation, maintenance and repair occupations (OR: 0.06, 95% CI: 0.01-0.47, $p=0.0072$) had a lower rate. No occupational differences were noted between male and female breast cancer survivors ($p=0.9999$).

Conclusion:

Occupation is associated with breast cancer history; further research is warranted to investigate this relationship.

Abstract 7

“Screen detected breast cancers: The role of clinical examination addition to mammography in asymptomatic women, 50 years of age or older.”

Ralph George, MD, FRCS, Preeti Dhar, MD, Frank Goldberg MD, FRCP,
Derrick Muradali, MD, FRCP

Introduction:

Canadian breast screening guidelines recommend mammogram and clinical beginning at age fifty. This study evaluates the contribution clinical examination makes to screen detected cancer rates.

Methods:

5000 clinical breast examinations of asymptomatic women were reviewed. Each was prospectively recorded using standardized notation. Age, menstrual and childbearing history, family history of breast or ovarian cancer, use of hormonal therapy, and menopausal status were all recorded. Women with prior breast cancer were excluded. All women underwent clinical exam and 2 view mammography.

Results:

458 mammogram detected abnormalities required follow-up and led to a diagnosis of cancer in 12% (specificity 92%, sensitivity 100%). Clinical breast exam was abnormal in 98 of 5000 cases and correlated with invasive cancer on final diagnosis in 13% of abnormal exams (specificity 98%, sensitivity 24%). Every invasive cancer detected by clinical breast exam was also detected by mammogram. Clinical breast exam did not identify additional malignancy, and resulted in 85 unnecessary call backs in women with normal imaging.

Conclusion:

In an asymptomatic screening population without prior breast cancer, clinical breast exam had no impact on cancer detection, and led to unnecessary call backs.

Abstract 8

“Proximity of breast cancer to the skin increases risk of axillary lymph node metastasis”

Marilyn J. Morton, MD, Darcy L. Adamczyk, MD, Amy C. Degnim, MD, James W. Jakub, MD, Christine M. Lohse, MD, Judy C. Boughey, MD

Background:

This aim of this study was to examine whether breast cancers closer to the skin have a higher risk of axillary nodal metastases.

Methods:

A retrospective review was performed of consecutive T1 or T2 breast cancer patients who underwent breast ultrasound and axillary surgery at Mayo Clinic, Rochester. Variables including tumor size and distance from the skin were measured on ultrasound. Patients with multifocal, multicentric or recurrent breast cancer and those receiving neoadjuvant chemotherapy were excluded.

Results:

Out of 147 patients identified, 118 (80%) had undergone sentinel lymph node (SLN) biopsy, 10 (7%) axillary lymph node dissection (ALND) and 19 (13%) SLN and ALND. Thirty six (24%) patients were node positive, whereas 118 (76%) patients were node negative. On univariate analysis, factors associated with nodal positivity were tumor size ($p < 0.001$), tumor distance from the skin ($p = 0.006$), palpable presentation ($p = 0.016$) and presence of lymphovascular invasion ($p = 0.008$). Estrogen and progesterone receptor and Her2 status, histologic type and grade were not associated with node positivity. On multivariable analysis, nodal positivity was associated with tumor size (odds ratio 1.08; $p = 0.004$), lymphovascular invasion (odds ratio 4.50; $p = 0.037$), subareolar location (odds ratio 6.27; $p = 0.020$), and tumors within 10 mm of the skin (odds ratio 3.70; $p = 0.020$).

Conclusion:

T1 and T2 breast cancers located closer to skin have a higher incidence of metastases to axillary lymph nodes than tumors deeper in the breast tissue. Distance from skin should be evaluated when considering likelihood of nodal positivity.