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# Poster Abstracts

## Poster 1

**"Pleomorphic Lobular Carcinoma in Situ (LCIS) associated with a Fibroadenoma"**

Mita Patel, MD

**Background:**
Fibroadenomas are benign tumors that can be observed or removed if growing or causing any discomfort. A core needle biopsy must be done in order to diagnose the mass as a fibroadenoma. Rarely, fibroadenomas may be associated or contain in situ or invasive cancer.

**Case:**
A 27 year-old Caucasian female presented to the Breast Health Center with a large mass that has been slowly growing over the last year. She denies any pain, skin changes, or nipple discharge. She saw her primary physician who called this mass "fibrocystic changes" and advised her that no further intervention was required. However, the large size of the mass concerned the patient and she presented to the Breast clinic for further evaluation. On exam, the patient had a large 7 cm mass in the left breast, mobile and quite hard. She was sent for an ultrasound that showed a large mass, likely a giant fibroadenoma. A core biopsy showed pleomorphic LCIS, and invasion cannot be ruled out. Another biopsy of the lesion showed the same thing. An MRI showed a 4 x 7 cm mass with rapid enhancement and a few small areas of washout. After extensive discussion with the patient, an excisional biopsy of the entire mass was performed. Despite removing the mass, pathology was perplexed by the diagnosis, as the entire mass appeared to contain pleomorphic LCIS. The slides were reviewed by Vanderbilt, who believed the mass was a fibroadenoma with atypical lobular hyperplasia. Both MD Anderson and Memorial Sloan Kettering felt this mass had extensive LCIS. The final diagnosis given was extensive pleomorphic LCIS with no evidence of invasion with clear margins. The patient had genetic testing performed which was negative for the BRCA genes. She is electing to have a bilateral mastectomy with reconstruction.

**Conclusion:**
Pleomorphic LCIS is a rare entity in fibroadenomas. It is important that larger masses should be considered for excision, as biopsies may miss a harboring malignancy. Smaller masses may be observed but a pathological diagnosis must be made first to prove the mass is a fibroadenoma.

## Poster 2

**"Male Breast Cancer: An Institution's 25 Year Experience"**

Jeffrey S. Scow, MD, Amy C. Degnim, MD, James W. Jakub, MD, Sejal S. Shah, MD, Rafael E. Jimenez, MD, Judy C. Boughey, MD

**Introduction:**
There are no prospective and few retrospective studies of male breast cancer (MBC). This study's aim was to describe our institutional MBC experience and evaluate the AJCC staging system stratification of MBC.

**Methods:**
All MBC cases were identified from our institution's cancer registry from 1984-2008. Data collected included tumor characteristics, lymph node status, treatment, age, and survival.

**Results:**
We identified 166 MBC cases. Median age was 62 years. Most common presentation was a palpable breast mass (77%). Stage at diagnosis was stage 0 (6%), stage I (27%), stage II (36%), stage III (17%), stage IV (5%), and unknown (9%). Mastectomy was performed in 148 patients (89%). Median tumor size was 2.0 cm. Most common histology was invasive ductal carcinoma (91%). Estrogen and progesterone receptor status was positive in 93% and 86% of cases tested respectively. Nodal staging was performed by axillary dissection (AD) (70%), sentinel node biopsy (SN) alone (11%), SN and AD (11%), and no axillary staging (8%); 43% were node positive, 47% node negative, and 10% unknown. After median follow-up of 5.5 years, 86 patients (52%) have died: 44 due to breast cancer. Patients diagnosed with stage II, III, and IV had median cancer-specific survival of 12.9, 7.2, and 0.8 years respectively. Median cancer-specific survival was significantly different for stages II vs. III ($p=0.03$) and III vs. IV ($p=0.0006$).

**Conclusion:**
MBC commonly presents as a mass, is hormone responsive, and is commonly treated with mastectomy. The TNM system appropriately stratifies men with MBC by duration of survival.

## Poster 3

**"Young Age is associated with Increased Risk of Local Recurrence following Breast Conservation Surgery"**

Randy Miles, MD, Christine M. Lohse, MS, Rachel E. Gullerud, BS, Amy C. Degnim MD, James W. Jakub, MD, Judy C. Boughey, MD

**Background:**
Local recurrence (LR) after breast conservation surgery (BCS) varies with clinical risk factors. This study's aim is to evaluate the impact of age on LR.

**Methods:**
All patients (excluding those receiving neoadjuvant chemotherapy) undergoing BCS from 1988-2001 at our institution were identified and evaluated for risk factors for LR and outcome.

**Results:**
3,075 patients underwent BCS. Mean age at surgery was 61 (range 21–98); 177 (5.6%) patients aged <40, 496 (15.8%) 40–49, 763 (24.3%) 50–59, 803 (25.6%) 60–69, and 904 (28.8%) age 70+. 214 patients (6.9%) developed LR at a median of 3.4 years following BCS (range 0.1–14.4). Median follow-up was 8.7 years (range 0.0–20.2). The 5-year LR-free survival rate was 95.0%. The frequency of LR by age group were: age <40 – 11.9%; age 40-49 – 5.9%; age 50-59 – 5.9%; age 60-69 – 7.6%; age 70 and older – 6.4%. The 5-year LR-free survival rates for these age groups were 90.0%, 95.4%, 95.6%, 95.4%, and 94.7%, respectively (p=0.041; log-rank test). On univariate analysis, patients <40 years old were nearly twice as likely to experience LR (HR 1.90; p=0.005). Multivariate analysis of patients with complete data (n=2126) demonstrated that age <40 and node positivity were associated with increased risk, while ER positivity, radiation and endocrine therapy were associated with decreased risk of LR.

**Conclusion:**
Risk factors for LR after BCS include age <40 years, node positivity, ER and PR negativity, and absence of adjuvant therapy. Patients under age 40 are at increased risk of LR following BCS.

## Poster 4

**"Should Axillary Ultrasound be used routinely in patients with a preoperative diagnosis of Ductal Carcinoma In Situ?"**

Bijan Ansari, MD, Judy C. Boughey, MD, Darcy L. Adamczyk, MD, Amy C. Degnim, MD, James W. Jakub, MD, Marilyn J. Morton, MD

**Purpose:**
To evaluate the utility of preoperative axillary ultrasound (AUS) in patients with core biopsy diagnosis of ductal carcinoma in situ (DCIS).

**Methods:**
Retrospective review of preoperative AUS and sentinel lymph node (SLN) data from women with a preoperative diagnosis of DCIS.

**Results:**
84 women with a preoperative diagnosis of DCIS who underwent AUS were identified. In 18 (21%), AUS was abnormal. Fine needle aspiration (FNA) was performed in all cases with abnormal AUS and was negative. Thus, the AUS and FNA findings did not change management in any case. 63 (75%) women underwent both AUS and SLN surgery. Only four women had findings in the SLN; 1 had macrometastasis, 1 had micrometastasis, and 2 cases had isolated tumor cells (ITC). Of these, only 1 patient had shown abnormal lymph nodes on AUS, with subsequent negative FNA and the SLN in this case had ITC only. Both the patient with micrometastasis and macrometastasis in their SLN had invasive disease on their final surgical pathology specimen. Classifying ITC as node negative, AUS was highly accurate in predicting negative axilla, with negative predictive value 95.9% and sensitivity 77.0%. Positive predictive value and specificity of AUS were 0% due to small number of patients with positive SLN and inability of AUS to detect these cases.

**Conclusion:**
In women with core biopsy diagnosis of DCIS, positive nodes are rare and are unlikely to be detected by AUS. Routine preoperative AUS is not recommended for DCIS diagnosed by core biopsy. Table - The sensitivity, specificity, negative and positive predictive values for axillary ultrasound and FNA in DCIS for those patients where nodal staging was performed. ITCs were classified node negative. Axillary pathology positive Axillary pathology negative Total NPV/PPV Abnormal axillary US 0 14 14 PPV = 0% Negative axillary US 2 47 49 NPV = 96% Total 2 61 63 Sensitivity = 0% Specificity = 77% Positive axillary FNA 0 0 0 PPV = 0% Negative axillary FNA 2 11 13 NPV = 85% Total 2 11 13 Sensitivity = 0% Specificity = 77%

## Poster 5

**"Estradiol Delivery for Menopausal Symptoms during Adjuvant Breast Cancer Therapy: Do you really know how much you are giving?"**

James A. Simon, MD, CCD, NCMP, FACOG, Amy Early, MD, Sandhya Pruthi, MD for the ASBD Consensus Committee

Adjuvant therapy for ER+ breast cancers and estrogen sensitive preinvasive proliferative disease utilizes estrogen depletion strategies as one of many therapeutic approaches. Tamoxifen, raloxifene, the aromatase inhibitors, and the gonadotropin releasing hormone (GnRH) agonists and antagonists fall into this category. The estrogen deficiency symptoms that accompany such approaches include vasomotor instability (hot flashes and night sweats) and urogenital atrophy (vaginal dryness, dyspareunia, etc.). Such symptoms negatively affect quality of life. Additionally, morbid complications of estrogen deficiency include: bone loss, osteoporosis, fracture, and hyperlipidemia, etc. While prohibited by current FDA-approved labeling, estrogen preparations (oral, transdermal and vaginal) each are documented effective in relieving these symptoms or reducing bone loss in menopausal women. Because of the variety of available treatments, dosage forms, and delivery systems, confusion is common as to how much actual estrogen is delivered into the systemic circulation, potentially antagonizing the benefits of the intended estrogen deprivation therapy. The long term safety of estrogen therapy on breast cancer recurrence risk has not been systematically studied and such studies may be logistically challenging, if not impossible, to implement. Here we present a representative sampling of the available FDA-approved estradiol preparations emphasizing: the route of delivery, the total administered dose and the mean concentration of estradiol resulting from chronic dosing (Table 1). We believe that with a better knowledge of the dosing information, the breast cancer specialist in collaboration with the oncologist will be better equipped to manage both the breast disease and the side effects of estrogen deprivation therapy.

## Table for Poster 5

| ESTRADIOL PREPARATIONS | | | | | |
|---|---|---|---|---|---|
| **Product Name** | **Route/type of Administration** | **Typical Regime** | **Norminal Daily Delivery Rate or Administerd lowest Approved Dose mg/day** | **Typical Serum Level (pg/ml)** | **Maximum Annual Delivered Dose@** |
| **Vaginal Estradiol** | | | | | |
| Vagifem® | vaginal tablet | 1 daily x 14 then 2 x weekly | 10 µg | 4.6 | 1.14 mg |
| Estring® | vaginal ring | 1 ring vaginally q 3 months | 7.5 µg | 8.0 | 2.74 mg |
| Estrace® | vaginal cream | 1 gm cream vaginally q week* | variable* | N/A | 7.1 mg |
| FemRing® | vaginal ring | 1 ring vaginally q 3 months | 0.05 mg | 40.6 | 18.25 mg |
| **Oral Estradiol** | | | | | |
| Estrace® tablets and generics | oral tablet | 1 pill p.o. qd | 0.5 mg | 55.4 | 182.5 mg |
| FemTrace® | oral tablet | 1 pill p.o. qd | 0.45 mg | N/A | 164.25 mg |
| **Transdermal Estradiol** | | | | | |
| Menostar® | transdermal patch | 1 patch weekly | 0.014 | 13.7 | 5.11 mg |
| Divigel®† | transdermal gel | 0.25 mg packet qd | 0.003 | 9.8 | 1.095 mg |
| Elestrin™† | transdermal gel | 0.52 mg/pump qd | 0.0125 | 15.4 | 4.56 mg |
| Evamist™† | transdermal spray | 1.53 mg spray qd | 0.021 | 19.6 | 7.67 mg |
| Climara®‡ | transdermal patch | 1 patch weekly | 0.025 | 22 | 9.13 mg |
| EstroGel® | transdermal gel | 0.75 mg/pump qd | 0.035 | 28.3 | 12.78 mg |
| Estraderm®\|\| | transdermal patch | 1 patch twice weekly | 0.050 | 32 | 18.25 mg |
| Vivelle-Dot®\|\| | transdermal patch | 1patch twice weekly | 0.0375 | 34 | 12.78 mg |
| Estrasorb®¶ | transdermal emulsion | 4.35 mg packet qd | 0.050 | 63 | 18.25 mg |

## Poster 5 Table Continued ….

*1gm cream equals 0.1 mg estradiol. Assumes 1 week of 0.2 mg/d; 1 week of 0.1 mg/d; then 0.1 mg weekly
Serum estradiol concentrations obtained from respective prescribing information and/or published clinical trials, not comparative clinical studies. Studies may have used different analytical methods to measure serum concentrations. Relative differences in efficacy and safety, if any, may not correlate with the serum estradiol concentrations measured in these studies.
†Unadjusted for baseline. Mean serum estradiol concentration on Day 14.
‡Mean serum estradiol concentration on Day 7.
§Time-averaged serum estradiol concentration on Day 14.
||Unadjusted for baseline. Mean serum estradiol concentration over the application period.
¶Mean trough serum estradiol concentration at Week 12.
@ Assumes perfect use (i.e. daily = 365 doses) and rounded to two (2) decimal places
Divigel® [Prescribing Information]. Upsher-Smith; Maple Grove, MN: June 2007.
Elestrin™ [Prescribing Information]. Kenwood; Fairfield, NJ: January 2007.
Climara® [Prescribing Information]. Bayer; Wayne, NJ: June 2007.EstroGel® [Prescribing Information]. Ascend; Herndon, VA: January 2007.
Estraderm® [Prescribing Information]. Novartis; East Hanover, NJ.Vivelle-Dot® [Prescribing Information]. Novartis; East Hanover, NJ: August 2004.
Estrasorb® [Prescribing Information]. Esprit Pharma; East Brunswick, NJ: January 2006.

## Poster 6

**“Internal mammary lymph nodes identification from isolated sternum of human cadaver”**

Luiz Gonzaga Porto Pinheiro, MD, Paulo Henrique Diógenes Vasquez, MD, Igor Moreira Veras, MD, Diego Alves Cruz, MD, João Ivo Xaxier Rocha, MD, Angelo Cunha de Figueiredo Filho, MD, Pedro Macedo Esmeraldo Barbosa, MD

**Purpose:**
To identify the lymph nodes positioned along the internal mammary vessels in isolated sternum of human cadaver and to standardize the surgical approach to those nodes, in order to establish anatomical landmarks to be used with the current techniques of mammary gland sentinel lymph node detection.

**Methods:**
Ten sternum plates removed from unclaimed cadavers were used in this study. Sternal plates were removed using bilateral incisions of the ribs at the midclavicular lines. The characterization of the internal mammary vessels and the anatomical integrity of the parietal pleura were indispensable requirements during the procedure.

**Results:**
A total of 29 lymph nodes were removed from the 2nd (13) and the 3rd (16) intercostals spaces. Almost 50% of all nodes collected were located medially to the vessels. Conclusion: The approach used is a reliable surgical technique for removing lymph node from sternal plates. The model is therefore valuable for breast surgeons training in sentinel node biopsy, an important procedure for breast cancer patients. Key words: Breast Neoplasms. Mammary Arteries. Lymph Nodes. Sentinel Lymph Node Biopsy.

## Poster 7

**“Estimation of the disseminated breast cancer treatment results after complex theray.”**

Miryusupova G.F., MD, Shysupov N.R., MD, Umarova Sh.A., MD

**Background:**
Estimation of efficiency of palliative polychemotherapy (PCT) in disseminated breast cancer (BC). 36 women, diagnosed with disseminated BC (pT2N2M1) after 2 years of complex treatment, in the period from 2007-2009, ages 30 to 57 years old received complex therapy including: 1. radical mastectomy by J.Madden; 2. adjuvant PCT with anthracyclines - 6 courses; 3. adjuvant radiotherapy; 12 patients received antiestrogen therapy with Tamoxifen 20 mg/day. In accordance with the results of immunohystochemical analysis, all patients were divided as following: ER(+), PR(+), Her2/neu(-) - 12 patients (33%), ER(-), PR (-), Her2/neu(-) - 23 patients (64%), ER(-). Her2/neu (+++) -1 patient (3%). All 36 patients revealed progressive BC with multiple lesions in skeleton bones and liver.

**Methods:**
Patients were divided in 2 groups. In the first group 17 patients received PCT at the following scheme: Docetaxel 75 mg/m2 in the 1st day, Capecitabine 1250 mg/m2 from 1st till 14th day – 6 courses, interval between courses was 3 weeks; in the 2nd group PCT was done as:Vinorelbine 25 mg/m2 in the 1st and 8th days, Capecitabine 1250 mg/m2 from 1st till 14th day – 6 courses, interval between courses was 1 week. In both groups after the 1st course PCT treatment was amplified with administration of Zometa® 4 mg each 28 days till new lesions were detected. RESULTS. During 24-month after therapy overall survival rate in the first group were 11 patients (64,7%), in the 2nd group-12 patients ( 63,2%). Despite the conducted therapy, further metastasis of BC resulted in lethal outcome:in the 1st group – 6 patients (35,3%), in the 2nd group – 7 patients ( 36,8%). For the period of 24 months there were 5 patients in each groups (29,4% and 26,3% accordingly) without signs of disease progression.

**Conclusion:**
Gained results as stabilization and regression of metastatic lesions in 10 patients (27,8%) with BC allows clinical oncologists to get control over disease despite some uncertainty of time period in each specific case.

## Poster 8

**"Correlation between aromatase, metalloproteinase 2, 9 and CD44 in breast cancer."**

Fábio Bagnoli, MD, Vilmar Marques de Oliveira, MD, Giuliana Cássia Morrone Taromaru, MD, Maria Antonieta Longo Galvão da Silva, MD, José Francisco Rinaldi, MD, Tsutomu Aoki, MD

**Objective:**
The objective of this study is to verify the expression levels and the correlation of aromatase, matrix metalloproteinase 2 (MMP-2), matrix metalloproteinase 9 (MMP-9) and CD44 in ductal carcinoma in situ (DCIS) and infiltrating ductal carcinoma (IDC) when both are found in the same breast.CASUISTIC AND

**Methods:**
110 cases were evaluated by tissue microarray (TMA) and immunohistochemically screened with anti-aromatase polyclonal antibodies, anti-MMP-2 monoclonal antibodies, anti-MMP-9 policlonal antibodies and anti-CD44 monoclonal antibodies.

**Results:**
Aromatase was expressed in IDC and DCIS in 63 (57.3%) and 60 (67%) cases respectively; MMP-2 was similarly expressed in IDC and DCIS in 15 (13.60%) cases; MMP-9 was positively expressed in IDC and DCIS in 83 (75.50%) and 82 (74.50%) cases, respectively; CD44 was positively expressed in IDC and DCIS in 49 (44.50%) and 48 (42.60%) cases, respectively; all of them were highly correlated ($p<0,001$). The correlation analysis found positive correlation statistically significant in IDC between aromatase and MMP-2 ($p<0,001$) and between aromatase and MMP-9 ($p=0,034$). In DCIS were found positive correlation between aromatase and MMP-2 ($p<0,001$) and between MMP-9 and CD44 ($p=0,030$).

**Conclusion:**
These results allow us to conclude that aromatase though local breast tissue etrogen synthesis has an important role in breast carcinogenesis mainly influencing MMP-2 and MMP-9 which are important players in tumor invasion and the dependence of their connection to CD44 to act.

## Poster 9

**"Autologous blood-derived marker. A new approach for sentinel lymph node identification."**

Luiz Gonzaga Porto Pinheiro, MD, João Ivo Xavier Rocha, MD, Diego Alves Cruz, MD,
Paulo Henrique Diógenes Vasques, MD, Angelo Cunha de Figueiredo Filho, MD,
Pedro Macedo Esmeraldo Barbosa, MD

**Purpose:**
To evaluate and present our initial results of a new marker (autologous blood-derived marker) for mammary sentinel lymph node identification in an experimental model.

**Methods:**
Skins mapped like a lymphatic duct draining to the axilla in patients submitted to breast biopsy, in our mastology service, stimulated us to try it in an animal model (female dogs). Our theory was that some blood derivate was captured by macrophages and accessed the lymphatic ducts in direction to the axilla. Nineteen female dogs of no defined race were studied. We injected 0,2 ml of technetium on both superior mammary glands. After ten minutes, a 2,5 ml solution of hemolized blood from the own animal was injected in the subareolar lymphatic plexus on the left superior mammary gland and 2,5 ml of patent blue concomitantly and equally on the contralateral gland. Ten minutes after, incisions on both axilas were made to search, through the lymphatic mapping and a gamma probe, the sentinel lymph nodes.

**Results:**
Nineteen brown sentinel lymph nodes were indentified and also radiomarked on the left axilla. Sixteen blue sentinel lymph nodes were identified and also radiomarked on the right axilla.

**Conclusion:**
Preliminary studies of a potential new dye for sentinel lymph node identification are presented. It may be the change of the current use of the blue dyes and their severe side-effects on patients submitted to sentinel lymph node biopsies.

## Poster 10

**"Pathologic Complete Response (pCR) of HER-2 neu Positive Invasive Ductal Carcinoma and Ductal Carcinoma In Situ (DCIS) Following Neoadjuvant Chemotherapy (NC) Plus Trastuzumab (T)"**

Mita Patel, MD, Sommer Gunia, MD, Eleftherios Mamounas, MD

**Background:**
NC is standard of care for pts with locally advanced BC and a reasonable alternative to adjuvant chemotherapy in pts with large operable disease. pCR after NC has been consistently associated with improved outcomes. Most common definition of pCR includes absence of invasive carcinoma in the breast and axillary nodes. Residual DCIS after NC does not portray worse prognosis compared to complete eradication of all disease. To our knowledge, pCR of DCIS after NC has not been reported. We report a case of pCR of DCIS associated with invasive carcinoma in a HER-2 + tumor after NC plus T.

**Case Presentation:**
A 41 year old Caucasian female presented with palpable masses in the right breast and axilla. On exam there was a 4x4 cm mass in the upper right breast and a 2.5 cm right axillary node. Mammogram showed a 2.5 cm irregular, solid mass at 12 o'clock and a 12 cm area of linear pleomorphic, suspicious calcifications in most of the upper part of the right breast. Core biopsy of the breast mass revealed invasive ductal carcinoma and DCIS associated with the calcifications (ER 85%, PR 6%, Her2neu 3+ by IHC). FNA of the axillary node was positive for malignancy. The patient underwent NC with AC àpaclitaxel plus T with complete clinical response. Before surgery, diagnostic mammogram showed no significant change in the calcifications but the breast and axillary masses were no longer present. MRI showed complete radiologic response. Because of persistence of the calcifications, total mastectomy, SLNB + axillary dissection was performed along with prophylactic left mastectomy (because of significant family history). Final pathology showed no residual invasive carcinoma or DCIS despite the presence of numerous ducts with residual microcalcifications.

**Discussion:**
To our knowledge, this is the first report of complete eradication of DCIS with NC plus T. Since eradication of DCIS has not been reported following NC, we hypothesize that T had an effect in eradicating DCIS in this case. This observation may have significant clinical implications on the choice of surgery in HER-2 neu + pts who present with extensive intraductal component but achieve clinical complete response to NC but have remaining suspicious microcalcifications.

## Poster 11

**“Breast Cancer : Methodology to determine a cause”**

Elizabeth Z. Naftalis, MD

Although breast cancer has many risk factors and causes, a skilled practitioner can perform bundled ruling in and ruling out processes to help determine causes. This methodology is a form of differential diagnosis used by the clinician and is useful to determine not only cause but how to proceed with treatment. For example, if a gene is ruled in as a cause , the patient may proceed with genetic testing prior to surgical therapy in order to determine which therapy they would choose. Another example would be radiation exposure, making breast conservation a nonviable option for the patient and determining a cause for the patient. This methodology is important for therapeutic as well as diagnostic purposes. A chart outlining this methodology will be provided.

## Poster 12

**"Breast cancer in young Hispanic women in the US-Mexican border."**

Juan Herrada, MD, Patricio Gonzalez, MD, Matthew Richards, MD, Kim H. Le, MD, Gary Shabacker, MD, Edward Saltztein, MD

Although breast cancer in young women (40 years or under) is not unusual, the young Hispanic female population is underrepresented in the medical literature. Medical records of women aged 40 and under treated at our institution between February 2002 and March 2008 were reviewed. Of 77 patients identified, 74 were Hispanic, and that is the focus of the present analysis. They represented 12% of the total 640 breast cancer patients treated during this period of time. Average weight was 166 pounds. Average age of menarche was 12.5 years. 69 patients were multiparous, 32 had taken birth control pills for at least six months, and 12 were smokers. The mother of 7 patients had history of breast cancer. No family history of breast cancer was documented in sisters, daughters, or first degree male relatives. No genetic testing was performed in this group of patients. 56 (75%) pts presented with breast mass, measuring 3.5 cm on average. Presenting symptoms were present for more than three months in 31 patients. Pathological examination included 5 patients with ductal carcinoma in situ, 1 with lobular carcinoma in situ, 2 with invasive lobular carcinoma, 58 with invasive ductal carcinoma, 4 with colloidal carcinoma, 1 with medullary carcinoma, and 1 with malignant phyllodes tumor. 32 patients had positive tumor involvement in the axillary lymph nodes. Immunostains revealed that 21 were ER positive, 16 were PR positive, and Her-2-neu was amplified in 17 cases. 7 patients died during the study period. Our findings were similar to national trends.

## Poster 13

**"Screening Mammography in Men with BRCA Mutations: Is There a Role?"**

Beth Freedman MD, Sharon M Rosenbaum Smith, MD, Jessica Keto, MD

**Introduction:**
Clear screening guidelines do not exist for men with BRCA mutations. We report a case of a second primary breast cancer in a man with BRCA2 mutation, detected on screening mammography. We also review the literature regarding screening mammography in men.

**Case Report:**
A 57 year old man with the BRCA2 mutation presented for ongoing surveillance. He had a history of breast cancer, which presented as a palpable mass. He had undergone a right modified radical mastectomy and adjuvant chemotherapy. One year later, he had no evidence of recurrent disease or new contra-lateral findings. His initial left screening mammogram revealed benign punctate calcifications. The second annual mammogram revealed new suspicious micro-calcifications. He had no clinical findings, and a biopsy was recommended. However, he elected to proceed with a total mastectomy, given his personal history of carcinoma. Pathology revealed multifocal 0.9cm DCIS, ER/PR positive.

**Discussion:**
Only three cases of male breast cancer diagnosed by screening mammography have been reported. Two patients had non-palpable nodules and one had micro-calcifications. All had a history of breast cancer, and their contra-lateral cancers were detected by annual mammography, 2 to 7 years after their initial mammogram (1). The BRCA2 mutation carries a 7% lifetime incidence of breast cancer. Men with a personal history of breast cancer have greater than 10% risk of developing contra-lateral disease (2). Annual screening mammography in these groups of men at increased risk of breast cancer will allow for earlier detection of cancer, less invasive therapies, and improved survival.

## Poster 14

**"Breast Conservation Therapy for Invasive Lobular Carcinoma Often Requires Multiple Surgeries to Obtain Negative Margins"**

Rachel E. Factor, MD

**Background:**
Breast conservation therapy (BCT) is offered to patients regardless of the subtype of carcinoma detected by core biopsy. Previous studies have shown the importance of achieving negative margins prior to radiation therapy, and this predominantly drives surgical decision-making.

**Aim:**
Our objective was to evaluate the frequency of positive margins after BCT for invasive lobular carcinoma.

**Methods:**
Lumpectomies for invasive lobular carcinoma (2004-2010) were identified by computer search. Medical charts were reviewed and detailed information was collected. Slides were reviewed by the author to determine the extent of margin involvement. Results: Over a 6 year period, 38 patients (ages 33-84) with invasive lobular carcinoma were treated by BCT. Margins from 26 (68%) of the initial excisions were positive. 24 (63%) of these patients underwent a second surgical procedure, of which 15 (63%) had residual invasive carcinoma and 10 (42%) had positive margins. 6 patients underwent a third surgical procedure to obtain clear margins. 5 (83%) had residual carcinoma and 2 (33%) had positive margins. One patient had a fourth procedure to obtain clear margins. 15 patients (39%) ultimately underwent mastectomy.

**Conclusions:**
In concordance with other reports, patients undergoing BCT for invasive lobular carcinoma at our institution frequently had positive margins on the initial lumpectomy. Our data further demonstrate that multiple surgical procedures are necessary in a majority of patients to achieve negative margins and many patients undergo mastectomy in spite of previous excisions. A method to detect invasive lobular carcinoma in vivo would aid surgical decision-making for this tumor type.

## Poster 15

**"The Effects of Pre-operative Large Needle Core Breast Biopsy (LCNB) on Resected Tissue Volume, Margin Status, and Cosmetic Outcome in Breast Conserving Surgery (BCS)"**

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The aim of this study was to evaluate the relationship between pre-operative LNCB histopathology results and surgical resection volumes in women undergoing BCS, with attention to both margin status and cosmetic outcome. 265 breast excisions (89%underwent LNCB prior to operative intervention) were performed. The results of both LNCB and final surgical pathology diagnoses were classified as benign, high risk lesion (HRL), DCIS, or invasive cancer. Cosmetic results were graded as excellent, good, fair, or poor. The resected tissue volume of patients who underwent LNCB was higher than the patients who did not (p=0.001). The LNCB results were 36 benign (15%), 45 HRL (19%), 46 DCIS (19.5%), and 110 invasive cancer (46.5%). LNCB and surgical excision results were concordant in 96% of the cases. Re-excision for positive and close margins was necessary in 19.5% DCIS and 21.8% invasive cancer patients. Cosmetic outcome was excellent in 98% to 100% of patients with lower resection volumes. The outcome was less than excellent in 15%-26% of patients if the final resection volume was more than 100 cm3. Preoperative LNCB establishes the benign nature of a lesion, allowing more limited resection with excellent cosmetic outcome. The diagnosis of cancer by LNCB leads to the planning of wider resection volumes, but the need for re-excision for positive and close margin is not different than that of patients with lower resection volumes. HRLs are best approached with diagnostic excision, as there is no strong evidence that larger resections reduce the incidence of involved resection margins.

## Poster 16

**“Timing of Chemotherapy for Incompletely Excised Stage II and Stage III Breast Cancer”**

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Leon A. Isaac, MD

If a breast cancer patient requires systemic chemotherapy, but her initial lumpectomy margins are involved by cancer, is it safe to delay definitive margin-control surgery until after systemic treatment has been administered? Preoperative chemotherapy as part of a clinical trial is our preferred approach. However, there are certain patients thought to be amenable to initial lumpectomy, in which the first trip to the operating room yields inadequate margins due to the disease being more extensive locally than originally anticipated. In this situation, we have chosen not to delay critically important systemic chemotherapy and defer on additional surgery until after chemotherapy is completed. Radiation is administered after clear margins have been achieved. We retrospectively reviewed over 1000 operable breast cancer patients treated by a single surgeon over 22 years at a community hospital approved by both the Commission on Cancer and the National Accreditation Program of Breast Centers. Margins were deemed inadequate if either invasive cancer or DCIS was present microscopically at or within 1 mm of the resection. Only those cases with Stage II or III disease requiring chemotherapy were selected. 16 patients treated in this manner were identified. They ranged in age from 35 to 81 years. At a median follow-up of 9 years, ranging from 2 to 14 years, all patients are alive and disease-free. The breast was conserved in 56%, and pathologic complete responses were seen in 62%. We conclude this approach to be safe and effective.

## Poster 17

### "Auditing Data of Screening and Diagnostic Mammography, in a One Stop Shop Clinic Private Breast Imaging clinic, Cairo, Egypt"

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**Objective:**
The purpose of this study was to describe the pattern of the studied group , evaluate medical audit and benchmark in a private one stop shop breast Imaging clinic, Al Nada hospital based, Screening and Diagnostic mammography practices, Cairo, Arab Republic of Egypt.

**Materials and Methods:**
A retrospective study was conducted among 5009 medical electronic database collected over a three year period April 2007 till March 2010; with 3044 (60.8%) screening and follow up and 1965 (39.2%) diagnostic breast imaging examinations. Mammography cases were performed after medical audit database was set up in a private based hospital mammography and fetal imaging clinic Women And Fetal Imaging (WAFI) mainly for measuring benchmark performance accuracy. This data designed according to American College of Radiology (ACS) including ACR breast density and BIRAD's mammography results. Surgical pathology served as the reference standard for malignant lesions and follow-up of at least 12 months served as the reference for benign lesions. Follow up obtain complete pathology and operative result for all PROBABLY BENIGN (ACR 3), PROBABLY MALIGNANT (BIRADS 4) and MALIGNANT (BIRADS 5) cases, to allow accuracy for performance over three year's time. Sensitivity, specificity, positive predictive value, women age and stage of disease, Breast Cancer (BC) were determined for each Screening and Diagnostic group. Here, it should be noted that all additional views and ultrasound were obtained in the same visit; one stop shop clinic "WAFI," therefore no recall rate. "WAFI" Clinic BC screening results should not be considered as applicable to the general population or compared with population-based BC screening programs. The data were extracted; analyzed and statistical analysis was performed with a chi-square test and two-tailed calculation of p values using SPSS program.

**Results:**
The study involved 5009 examinations. Only 1084 (21.6%) had ultrasound examination, where 3925 (78.4%) have done both Mammography and Ultrasound in same sitting. The mean age at diagnostic mammography for 1892 cases was 42.7, SD 12.6 years and mean age at screening mammogram and follow up for 2985, 48.9, SD 10.5 years; $F = 169.3$, $p < 0.001$. Among patients who underwent diagnostic examinations, 533, 27.1% had a strong or very strong family history of breast cancer (1052, 34.6% among screening and follow up, Chi2 30.5, $p < 0.000{,}001$. Examination findings were interpreted as BIRAD 4,5 in Diagnostic 230 , 4.6% and among screening and follow up BIRAD were 4,5, 71, 1.4% . Biopsy was performed in 282 cases, screening and follow up, 71, 25.2 % among diagnostic cases, 211, 74.8%, $p < 0.000{,}001$). True positive and true negative rate were 74.8% and 32.9% respectively among diagnostic groups, Chi2 203.49, p 0.000,001. False positive and false negative rates were highest in the diagnostic group, being 53.6% and 80.0% respectively.

**Conclusion:**
Medical auditing of diagnostic mammography examinations yields substantially different results compared with those of screening examinations, including different patient demographics; higher number of positive biopsies; higher cancer detection rates; and larger, more advanced-stage cancers. Diagnostic and screening data should be segregated during auditing, and analysis of results should be based on known differences between diagnostic and screening outcomes. To our knowledge this is first of its kind medical audit for mammography in private based imaging clinic in Egypt.

## Poster 18

**"Nipple Sparing Mastectomy with Tissue Expanders and Dermal Matrix: Multi-institutional Analysis of Patient Selection and Oncologic Safety"**

Pat Whitworth, MD, G. Patrick Maxwell, MD, Allen Gabriel, MD,
Toni Storm-Dickerson, MD, Christopher Rubano, MD

**Background:**
Nipple sparing mastectomy (NSM) has been controversial but with an expanding body of published experience, this approach is gaining acceptance and wider application. The purpose of this multi-institutional report is to confirm oncologically safe principles for patient selection and operative technique.

**Methods:**
From 2007-2009, 98 consecutive patients (186 breasts) had NSM with TE and DM. Exclusion criteria included: tumors larger than 3 cm, clinical invasion of the NAC, tumors within 2 cm of the nipple, multicentric disease, positive nipple margin or extensive nodal disease. Patients had nipple sparing mastectomy with thick flaps which elevated the skin and subcutaneous tissue off of the anterior mammary fascia. Flaps were thinned at the areola to separate the dermis from the underlying breast and ductal tissue. Ducts were transected inside the nipple.

**Results:**
Risk reducing mastectomies were preformed on 45 patients and therapeutic mastectomies were performed for 53 patients. The average age was 43 years (range: 28-65), with an average BMI of 28.9 (range: 19-43). Average follow up was 24.7 months (16-49 months). No expander implant reconstruction failed. No patient had local or regional recurrence. Capsular contracture at follow up was 167 breasts with Baker 1, 19 breasts with Baker 2, and 0 breasts with Baker 3.

**Conclusion:**
NSM with thick skin and thin areolar flaps, plus immediate TE and ADM placement is a safe and effective option for patients requiring therapeutic or prophylactic mastectomy.

## Poster 19

**“Breast Reduction Nipple Sparing Mastectomy”**

Joel Aronowitz, MD, Jim Watson, MD, Jerrold Steiner, MD, Lindi Vanderwalde, MD,
David Feldmar, MD

The evolution of oncoplastic techniques in breast cancer surgery has rapidly advanced in recent years. The body of evidence supporting the safety of nipple sparing mastectomy has broadened the indications and demand for this alternative for treatment of breast cancer and prophylaxis. Application of skin sparing mastectomy to larger ptotic breasts has been limited due to the lack of surgical techniques which allow management the excess skin envelope in these patients. This paper will illustrate a reliable technique to accomplish a skin sparing mastectomy in large and ptotic breast using a modified Wise patten breast reduction method. The indications, surgical technique and results of a series of cases will be presented.