

38 Influence of Race on Attainment of Textbook Oncologic Outcome Following Modified Radical Mastectomy for Breast Cancer

Lucia Castro Hernandez,¹ Natalie Ceballos,¹ Alejandra Ergle,¹ Shenea Samuels,¹ Zanieb Shatawi,¹ Omar H. Llaguna¹

¹Memorial Healthcare System, Hollywood, FL.

Background

Textbook oncologic outcome (TOO) is an outcome measure attained when all desired short-term quality metrics are met following an oncologic operation. The aim of this study was to determine if race/ethnicity is associated with the attainment of TOO among patients with breast cancer who underwent modified radical mastectomy (MRM) or MRM with contralateral prophylactic mastectomy (CPM).

Methods

A retrospective study was performed using data from the National Cancer Database from 2004 to 2017, where it was queried for patients with breast cancer who underwent MRM or MRM with CPM. Patients who achieved TOO were those who met 4 individual oncologic criteria: resection with negative microscopic margins, American Joint Committee on Cancer (AJCC)–compliant

lymph node evaluation, no extended length of stay (LOS), and no 30-day readmission. Multivariate logistic regression models were used to determine if race/ethnicity groups were associated with the likelihood of achieving TOO.

Results

Significant socioeconomic differences were observed among the racial and ethnic groups, with patients who were Black having lower median household incomes and those who were Hispanic having a higher proportion of uninsured patients. Patients who were Black were less likely to meet TOO criteria for R0 resection (95%) and no prolonged LOS (61.9%). Patients who were Hispanic were more likely to achieve adequate lymphadenectomy (72.4%) and no 30-day readmission (92.8%) but less likely to have no prolonged LOS (69.6%). Patients who were Hispanic had an increased likelihood of achieving TOO (adjusted objective response [aOR], 1.09; $P = .009$), while patients who were Black had a decreased likelihood (aOR, 0.87; $P < .001$) compared with patients who were White.

Conclusions

In conclusion, this study suggests that racial/ethnic disparities do exist in the attainment of TOO following MRM for breast cancer. Physicians should be knowledgeable of these disparities when involved in the management of breast cancer patients in the hopes of optimizing treatment.

39 The Influence of Reconstruction Type on Outcomes in Women Undergoing Mastectomy With Immediate Reconstruction: A Nationwide Study

Lucia Castro Hernandez,¹ Zaine Shatawi,¹ Joshua P. Parreco,¹ Lucy De La Cruz²

¹Memorial Healthcare System, Hollywood, FL;

²MedStar Georgetown University Hospital, Washington, DC.

Background

The study aimed to compare the most common reconstruction techniques used in mastectomy with immediate reconstruction in a large national cohort of women, due to limited and inconsistent evidence on the outcomes associated with different reconstruction types.

Methods

The study analyzed the Nationwide Readmissions Database from 2016 to 2020 to examine women over 18 undergoing mastectomies with immediate reconstruction. The outcomes

assessed were prolonged length of stay (LOS; 7 days or more), readmission within 30 days, and readmission to a different hospital. Reconstruction types and relevant variables were compared using chi-squared tests and multivariable logistic regression, controlling for significant confounders.

Results

During the study period, 35,430 patients were identified as undergoing mastectomy for breast cancer with immediate reconstruction. The rate of prolonged LOS was 2.4% ($n = 840$) and the readmission rate was 5.4% ($n = 1919$). From the readmitted patients, the rate of readmission to a different hospital was 14.2% ($n = 273$). Controlling for confounders with multivariable logistic regression revealed the strongest risk factors for prolonged LOS were latissimus dorsi flap (OR, 5.4; 95% CI, 4.0-7.4; $P < .001$) and an investor-owned hospital (OR, 4.3; 95% CI, 3.5-5.2; $P < .001$). The highest risk of readmission was a transverse rectus abdominis flap (OR, 1.3; 95% CI, 1.1-1.6; $P < .001$), and the highest risk of readmission to a different hospital was a small hospital (OR, 2.2; 95% CI, 1.6-3.1; $P < .001$).

Conclusions

Reconstruction type impacts mastectomy outcomes, with

implications for surgical decision-making and care fragmentation. More research is needed to improve patient satisfaction and reduce adverse outcomes.

40 Ethnic Disparities in Complication Rates and Outcomes of Nipple-Sparing Mastectomy: A Comprehensive Analysis

Arianna Cavalli,¹ Fardeen Bhimani,¹ Lesley G. Coe,² Liane N. Obaid,² Anjali Gupta,¹ Jessica Pastoriza,¹ Sheldon Feldman,² Maureen McEvoy¹

¹Montefiore Medical Center, Bronx, NY, USA;

²Albert Einstein College of Medicine, Bronx, NY, USA

Background

Nipple-sparing mastectomy (NSM) has become popular for treating breast cancer, primarily due to its minimal impact on recurrence rates; however, prior literature shows increased complication risk associated with NSM. Our study aims to analyze the outcomes of NSM in an ethnically diverse population to investigate potential disparities and optimize its use.

Methods

A retrospective chart review with Institutional Review Board approval was conducted on patients who underwent NSM between 2016 and 2022.

Results

Of the total 98 breast cancer cases in our study, 68 patients experienced complications post NSM, of which 48 patients required surgical intervention (Table). Race was strongly associated with overall complication ($P = .042$), of which Hispanic individuals had the highest number of complications ($P = .021$). Overall, incisions were strongly associated with infection ($P = .027$). Tissue expander (TE) had the highest rates of infection ($P = .047$) compared with flap or implant. Additionally, 8.2% of patients experienced recurrences.

Conclusion

Race emerged as a significant determinant of complications post NSM, with Hispanic patients having the highest rates. Additionally, incisions were linked to an increased infection, with inframammary fold particularly notable. Patients opting for TE exhibited a higher susceptibility to infections in comparison to flap or implant procedures. Further studies are warranted to strengthen our findings.

Table.

Patient Characteristics of Those Who Received Nipple-Sparing Surgery	
Total patients	98
Age, median	47
BMI, median	26.2
Diabetes	8 (8.2%)
Smoking	29 (29.6%)
Race/ethnicity	2 (2.0%)
Asian	27 (27.6%)
African American	15 (15.3%)
White	45 (45.9%)
Hispanic	2 (2.0%)
Other/unknown	7 (7.1%)
Stages (Path)	27 (27.6%)
0	40 (40.8%)
1	21 (21.4%)
2	6 (6.1%)
3	2 (2.0%)
4	2 (2.0%)
Unknown	
Pathology	60 (61.2%)
IDC ILC DCIS	8 (8.2%)
Other	25 (25.5%)
	5 (5.1%)
Incision	71 (72.5%)
IMF	27 (27.6%)
Other	
Reconstruction	56 (57.1%)
TE	30 (30.6%)
Flap procedure implant	11 (11.2%)
Postoperative complications	68 (69.4%)
Necrosis	52 (53.1%)
Infection	29 (29.6%)
Hematoma	8 (8.2%)
Seroma	15 (15.3%)
Erythema	38 (38.8%)
Implant flip	6 (6.1%)
Complications requiring surgery	48 (49.0%)
1. surgery	48 (49.0%)
2. surgeries	12 (12.2%)
3. surgeries	2 (2.0%)
4. surgeries	1 (1.0%)
Recurrence	
Recurrence total	8 (8.2%)
Local recurrence	4 (4.1%)
Paget disease	1 (1.0%)
Distant recurrence	3 (3.1%)

41 A Case Series of Sarcomas

Chu-Yu Cheng,¹ Chris Alving-Trinh,¹ Ibronke Adelaja,¹ Deborah Gumina¹

¹University of California San Francisco Fresno, Fresno, CA.

Background

Breast sarcomas are malignancies of mesenchymal cell lineages. They are rare and generally more aggressive than breast adenocarcinomas. The primary form arises de novo, and the secondary form is often treatment-related. Management remains highly variable. Experiences from retrospective studies and case reports can help identify patterns.

Methods

We discuss 5 cases (**Table**): (1) 86F with a secondary angiosarcoma 6 years after lumpectomy/radiation to treat left breast mucinous carcinoma; (2) 44F with a 2-year history of an enlarging, biopsy-proven left breast angiosarcoma; (3) 39F with a 2-month history of an enlarging, biopsy-proven right breast angiosarcoma; (4) 60F with enlarging left breast mass on mammograms over 2 years with biopsies showing focal bone metaplasia; and (5) 59F with recurrent left breast phyllodes tumor.

Results

Patients 1 to 3 underwent mastectomy. With negative margins, patient 1 had a latissimus flap to cover the large wound. Three

months later, she underwent excision of recurrent skin lesions and radiation. She declined palliative chemotherapy. Her cancer was upstaged from IIIB to IV after biopsy-confirmed liver metastasis at 1 year. Patient 2 completed gemcitabine/docetaxel and doxorubicin treatment but progressed from stage IIIA to IV with osseous and liver metastases at 1 year and died. Patient 3 was staged IIIA with medical and radiation oncology referrals. Patient 4 underwent an excisional biopsy, which returned spindle cell neoplasm with bone and cartilage differentiation. Despite margin clearance after re-excision and 2 cycles of gemcitabine/docetaxel to treat malignant phyllodes (initial diagnosis slightly favored over metaplastic carcinoma), she had a mastectomy for recurrence 6 months later. Immunohistochemistry showed keratin expression more characteristic of metaplastic carcinoma. The patient will initiate pembrolizumab. Patient 5 had lumpectomy. Her phyllodes tumor showed marked stromal atypia but was classified borderline given no overgrowth relative to epithelium and its liposarcoma differentiation, which has low malignant potential. A 1-cm margin was assured after re-excision. She will continue mammogram surveillance.

Conclusions

Large, high-grade histology such as angiosarcoma or spindle cell confer guarded prognosis. Their presence often warrants mastectomy +/- chemotherapy or radiation. Lumpectomy is considered for smaller tumors with favorable histology such as liposarcoma and benign/borderline phyllodes. Negative margin status is essential for disease control.

Table.

Summary of the 5 Patients' Breast Sarcoma Histology, Size, Grade, Staging, and Margins					
Patient	Histology	Size, cm	Grade/variant	Closest margin, cm	Staging*
1	Angiosarcoma	18.5	High	0.7	IV (M1)
2	Angiosarcoma	8.3	Intermediate	1.3	IV (M1)
3	Angiosarcoma	9.3	High	0.025	IIIA (pT2G3)
4	Spindle cell neoplasm with bone and cartilage differentiation favoring malignant phyllodes tumor vs metastatic carcinoma	6.5	High	0.1 (mastectomy)	IIIA (pT2G3)
5	Phyllodes tumor with liposarcoma differentiation	3	Borderline	0.1 (lumpectomy) Negative (re-excision)	N/A**

*Staging is described per AJCC 8th edition guidelines.

**Not applicable for nonmalignant phyllodes tumors.

42 Transitional Lymphedema: Understanding the Temporal Dynamics Post-Axillary Surgery

Anshumi Desai,¹ Victoria Dahl,¹ Carolina Padilla,¹ Seraphina Choi,¹ Eli Avisar¹

¹University of Miami Health System, Miami, FL

Background

Lymphedema poses a significant challenge for patients with breast cancer who have undergone axillary lymph node dissection (ALND). Traditional techniques for lymphedema assessment, such as arm circumference measurement and bioimpedance spectroscopy (Lymphedema Index [L-Dex]), have been useful but limited in scope. One underexamined facet of this condition is its temporal characteristics—specifically, the period between surgery and the onset of lymphedema symptoms. Our study aims to elucidate the concept of *transitional lymphedema*, a term we propose to describe lymphedema occurring between 3 to 6 months after axillary surgery that would be resolved with longer follow-up.

Methods

A retrospective cohort study included patients with breast cancer undergoing ALND with Simplified Lymphatic Microsurgical Preventing Healing Approach (SLYMPHA) between January 2019 and June 2022 at a single institution. Patient demographics and treatment characteristics were collected. An L-Dex score outside the normal range (± 10 L-Dex unit) or an increase of at least 10 L-Dex units above the patient's baseline was considered abnormal.

Results

A total of 51 patients met the inclusion criteria, with a mean (SD) age of 56.8 (12.6) years and a mean (SD) body mass index (BMI) of 29.5 (7.2) kg/m². A total of

41 patients (80.4%) received adjuvant radiation, and 41 patients (80.4%) received neoadjuvant chemotherapy. Of the 18 patients with abnormal L-Dex scores, an abnormal L-Dex developed in 5 patients (27.7%) at 3 months, 6 patients (33.3%) at 6 months, 3 patients (16.6%) at 9 months, and 4 patients (22.2%) at 12 months. There was a decrease in the mean absolute L-Dex score at each postoperative visit (Table). When comparing the L-Dex difference from the baseline, it was lower at 12 months (4.67) compared with the 3-month (10.12) postoperative visit (CI, 0.1086-9.968; $P = .0432$). Additionally, 88.2% of patients who developed an abnormal L-Dex score at some time had adjuvant radiation compared with 76.4% of patients who never had an abnormal L-Dex reading; however, it was not significant. Of note, 52.17% of patients with BMI of at least 30 kg/m² developed abnormal L-Dex scores compared with 22.2% of patients with a BMI below 30 kg/m² ($P = .02$). From patients with at least 20 axillary lymph nodes removed, 45% developed abnormal L-Dex, whereas it was 28.5% when fewer than 20 lymph nodes were removed ($P = .04$).

Conclusions

Most increases in L-Dex scores seen in the first 6 postoperative months showed resolution after a follow-up of more than 12 months. Higher BMI (≥ 30 kg/m²) and removal of at least 20 axillary lymph nodes were associated with higher L-Dex measurements during postoperative follow-up visits.

Table.

L-Dex Score at Each Postoperative Visit	
Time of postoperative visit	Absolute L-Dex score
3 months	9.10
6 months	7.08
9 months	7.77
12 months	7.10
>12 months	7.08

L-Dex, Lymphedema Index.

43 Impact of Lymphatic Microsurgical Preventing Healing Approach (LYMPHA) on Postoperative Complication Rates in Mastectomy With Immediate Prosthetic-Based Breast Reconstruction

Anshumi Desai,¹ Emily Finklestein,¹ Meaghan Clark,¹ Rohan Mangal,¹ Iago De Castro Silva,¹ Susan Kesmodel,¹ Kristin Rojas,¹ Devinder Singh,¹ Kyle Xu,¹ Juan Catinchi-Mella¹

¹University of Miami Health System, Miami, FL

Background

The Lymphatic Microsurgical Preventing Healing Approach (LYMPHA) is a prophylactic microsurgical technique performed at the time of axillary lymph node dissection (ALND) that reduces the rate of developing lymphedema (LE). It is often performed together with immediate implant-based breast reconstruction (IBBR) in patients undergoing mastectomy with ALND. This study aimed to determine whether the

additional LYMPHA procedure impacts the surgical outcomes of mastectomy with IBBR.

Methods

A retrospective cohort study included patients with breast cancer undergoing mastectomy with IBBR (tissue expander [TE] or implant) with and without ALND with LYMPHA between April 2021 and August 2023 at a single institution. Patient demographics, treatment characteristics, and complication rates were collected. The complications evaluated included hematoma, seroma, minor infection (resolved with oral antibiotics), major infection (need for intravenous antibiotics), wound dehiscence, mastectomy flap necrosis, implant/AlloDerm exposure, and readmission within 90 days of surgery. The primary outcome was a comparison of the rate of complications within 90 days of surgery in patients with and without ALND and LYMPHA.

Results

Of 94 patients with mastectomy followed by IBBR, 54.3% (n=51) had no ALND and LYMPHA, and 45.7% (n=43) had an ALND and LYMPHA. All baseline demographic features were evenly distributed between both cohorts. Patients with a higher-stage breast cancer requiring neoadjuvant chemotherapy were more likely to be present in the ALND with LYMPHA cohort ($P < .001$). Mastectomy types, implant types, and laterality of surgery were evenly distributed. ALND with LYMPHA had a longer anesthesia

time (417.5 vs 513.9 minutes; $P < .001$). There was no hematoma in either cohort. Seroma occurred in 7.84% of patients of the non-LYMPHA cohort and 16.28% of those who underwent IBBR with LYMPHA ($P = .205$). Major infection rates were 5.88% in patients without LYMPHA and 6.98% in those with LYMPHA ($P = .829$). Minor infections were seen in none without LYMPHA and 6.98% of patients with LYMPHA ($P = .05$). Wound dehiscence occurred in 1.96% without LYMPHA and 2.33% with LYMPHA ($P = .9$). Mastectomy flap edge necrosis occurred in no patients without LYMPHA and 6.98% with LYMPHA ($P = .05$). One patient had implant removal because of AlloDerm exposure in the LYMPHA cohort. In all, 5.88% and 6.98% had complication-related hospital readmission within 90 days of surgery in the non-LYMPHA and LYMPHA cohorts, respectively ($P = .829$). There were no statistically significant differences in the individual complication rates with multivariate analysis, as well as on controlling for body mass index, cancer stage, chemotherapy, and anesthesia time. Overall complication rates had no statistically significant difference (13.73% vs 27.91%; $P = .09$).

Conclusions

ALND with LYMPHA had no statistically significant differences in complication rates as compared to no ALND and LYMPHA. LYMPHA should be performed with ALND to reduce LE, as it does not increase the risk of postoperative complications.

Table. (continued on page 51)

Patient Characteristics Across Various Subgroups				
	IBBR without ALND and LYMPHA n = 51 (54.3%)	IBBR and ALND and LYMPHA n = 43 (45.7%)	Univariate analysis, P value	Multivariate Analysis, P value
Age (years)	Mean, 48.3 (SD, 107) Median, 46	Mean, 49.2 (SD, 11.7) Median, 49	.683	N/A
BMI	Mean, 27.4 Median, 26.8 Range, 18.4-38.1	Mean 27.5 Median, 28.4 Range, 19.9-38.4	.913	N/A
Race, n (%)				
White	43 (84.3%)	36 (83.7%)	.182	N/A
African American	8 (15.6%)	5 (11.6%)		
Asian	0 (0%)	2 (4.6%)		
Ethnicity, n (%)				
Non-Hispanic	20 (39.2%)	17 (39.6%)	.975	N/A
Hispanic	31 (60.8%)	26 (60.4%)		

Table. (continued from page 50)

Cancer stage, n (%)				
Stage 0	7 (13.7%)	0 (0%)		
Stage I	21 (41.2%)	1 (2.3%)	<.001	N/A
Stage II	12 (23.5%)	12 (27.9%)		
Stage III	10 (19.6%)	30 (69.8%)		
Stage IV	1 (2.0%)	0 (%)		
Unilateral vs bilateral, n (%)				
Unilateral	25 (49.0%)	34 (79.1%)	.116	N/A
Bilateral	26 (51.0%)	9 (20.9%)		
Neoadjuvant chemotherapy, n (%)				
Yes	18 (35.3%)	34 (79.1%)	<.001	N/A
No	33 (64.7%)	9 (20.9%)		
Type of mastectomy, n (%)				
Simple mastectomy	0 (0%)	1 (2.3%)	.491	N/A
Skin-sparing mastectomy	42 (82.4%)	35 (81.4%)		
Peri-areolar incision	38 (74.5%)	32 (74.4%)		
Wise pattern	4 (7.8%)	3 (7.0%)		
Nipple sparing mastectomy	9 (17.6%)	7 (16.3%)		
Radical incision	6 (11.8%)	2 (4.7%)		
Inframammary incision	3 (5.9%)	5 (11.6%)		
Type of implant, n (%)				
TE	7 (13.7%)	13 (30.2%)	.052	N/A
DTI	44 (86.3%)	30 (69.8%)		
Anesthesia time, minutes	Mean, 417.5 (SD, 112.9)	Mean, 513.9 (SD, 100.7)	<.001	N/A
Total complications, n (%)	7 (13.73%)	12 (27.91%)	.088	.2
Hematoma, n (%)	0 (0%)	0 (0%)	N/A	N/A
Seroma, n (%)	4 (7.84%)	7 (16.28%)	.205	.194
Major infection, n (%)	3 (5.88%)	3 (6.98%)	.829	.785
Minor infection, n (%)	0 (0%)	3 (6.98%)	.055	N/A
Wound dehiscence, n (%)	1 (1.96%)	1 (2.33%)	.903	N/A
Flap edge necrosis, n (%)	0 (0%)	3 (6.98%)	.055	N/A
Hospital readmission, n (%)	3 (5.88%)	3 (6.98%)	.829	.785

ALND, axillary lymph node dissection; BMI, body mass index; DTI, direct-to-impact; IBBR, immediate implant-based breast reconstruction; LYMPHA, Lymphatic Microsurgical Preventing Healing Approach; TE, tissue expander.

44 Variant of Uncertain Significance (VUS) Genetic Testing Results and Mastectomy Choice in Lumpectomy-Eligible Patients

Osvaldo Nunez,¹ Vasanth Govind,¹ Tizita Wolde,¹ Rainya Heath,² Talia R. Donenberg,³ Rachel Silva-Smith,³ Marie B. Jeanjean,³ Jessica Moore,⁴ Jessica Crystal,^{5,6} Susan B. Kesmodel,^{5,6} Kristin E. Rojas^{5,6}

¹Leonard M. Miller School of Medicine, University of Miami

²Department of General Surgery, Memorial Healthcare System

³Department of Human Genetics, Leonard M. Miller School of Medicine, University of Miami

⁴Department of Obstetrics, Gynecologic, and Reproductive Sciences, University of Miami

⁵DeWitt Daughtry Family Department of Surgery, University of Miami

⁶Sylvester Comprehensive Cancer Center, University of Miami

Background

Taken alone, germline genetic variants of uncertain significance (VUS) should not change surgical decision-making in patients with breast cancer (BC) based on current guidelines. We sought to evaluate whether VUS may be a driver of surgical choice in patients with BC who are lumpectomy eligible.

Methods

A single-institution retrospective analysis included patients with nonmetastatic BC who underwent lumpectomy or mastectomy from April 2020 to November 2021. We defined “lumpectomy eligible” as unilateral clinical T0-2 nonrecurrent disease in patients able to receive radiation. Patients with known pathogenic mutations were excluded. Descriptive analyses employed

chi-square tests to compare patients undergoing lumpectomy or bilateral mastectomy (BLMast) for unilateral early-stage breast cancer, accounting for genetic testing receipt and results among all patients who were lumpectomy-eligible. Multivariate analysis to predict the likelihood of the primary outcome, mastectomy receipt, was limited to tested patients without pathogenic mutations using binomial logistic regression.

Results

Of 741 patients with BC who had surgical intervention, 549 (74.1%) were lumpectomy eligible and 326 received genetic testing (235 negative, 91 VUS). Overall, the median age was 55.0 (26-84). Of those tested, 206 underwent lumpectomy, and 58 underwent BLMast. Insurance type, race, ethnicity, language, income, tobacco use, marital status, and axillary management did not significantly differ between those who underwent lumpectomy or BLMast. Compared with patients who underwent a lumpectomy, a higher proportion of patients with a VUS result (39.7% vs 24.8%, $P = .026$), American Joint Committee on Cancer stage II disease (41.4% vs 31.1%, $P = .023$) and those with 2 or more MRI-recommended preoperative biopsies (31.3% vs 13.8%, $P = .021$) underwent BLMast (**Table**). In addition, a significantly higher proportion of patients who underwent BLMast were younger than 50 years (63.8% vs 32.0%, $P < .001$).

Conclusions

VUS genetic testing results are more prevalent in lumpectomy-eligible patients choosing bilateral mastectomy, along with younger age, higher stage, and MRI biopsy receipt. The present analysis informs the implementation of robust but accessible genetic counseling education initiatives in breast surgical oncology to decrease unnecessary mastectomies in patients with VUS.

Table. (continued on page 53)

Patient and Clinical Characteristics by Surgical Choice					
	All lumpectomy eligible n=326	Lumpectomy n=206	Unilateral mastectomy n=62	Bilateral mastectomy n=58	P value
Age					
Median (range)	55 (26-84)	56.5 (30-84)	51.5 (31-82)	45 (26-68)	<.001
<50	128	66 (32.0%)	25 (40.3%)	37 (63.8%)	
>/=50	198	140 (68.0%)	37 (59.7%)	21 (36.2%)	
Race					NS
White	258	164 (79.6%)	48 (77.4%)	46 (79.3%)	
Black	43	27 (13.1%)	8 (12.9%)	8 (12.8%)	
Other	25	15 (7.3%)	6 (9.7%)	4 (6.9%)	

Table. (continued from page 52)

Ethnicity					
Non-Hispanic	140	93 (45.1%)	23 (37.1%)	24 (41.4%)	NS
Hispanic	179	107 (51.9%)	38 (61.3%)	34 (58.6%)	
Comorbidities					
0	135	81 (39.3%)	29 (46.8%)	25 (43.1%)	NS
1	90	51 (24.8%)	20 (32.3%)	19 (32.8%)	
2	101	74 (35.9%)	13 (21.0%)	14 (24.1%)	
BMI					
<18.5	6	2 (1.0%)	2 (3.2%)	2 (3.4%)	NS
18.5-24	102	58 (28.6%)	25 (40.3%)	19 (32.8%)	
25-29	124	81 (39.9%)	20 (32.3%)	23 (39.7%)	
>/=30	91	62 (30.5%)	15 (24.2%)	14 (24.1%)	
AJCC					
DCIS	48	32 (15.5%)	10 (16.1%)	6 (10.3%)	0.023
Stage I	151	106 (51.5%)	22 (35.5%)	23 (39.7%)	
Stage II	116	64 (31.1%)	28 (45.2%)	24 (41.4%)	
Stage III	11	4 (1.9%)	2 (3.2%)	5 (8.6%)	
MRI biopsies recommended	n = 243	n = 145	n = 50	n = 48	
0	121	83 (57.2%)	18 (36.0%)	20 (41.7%)	0.021
1	71	42 (29.0%)	16 (32.0%)	13 (27.1%)	
>/=2	51	20 (13.8%)	16 (32.0%)	15 (31.3%)	
Genetic testing results					
Negative	235	155 (75.2%)	45 (72.6%)	35 (60.3%)	0.026
VUS	91	51 (24.8%)	17 (27.4%)	23 (39.7%)	

AJCC, American Joint Committee on Cancer; BMI, body mass index; VUS, variants of uncertain significance.

45 Application of the 7-Gene Biosignature in Palpable Versus Nonpalpable Ductal Carcinoma In Situ in a Black Patient Population: Does Palpability Suggest a More Aggressive Genomic Risk?

Amy Jeng¹

¹SUNY Downstate Health Sciences University

Background

Palpable ductal carcinoma in situ (p-DCIS) is a rare entity—only 10% of patients present with a clinical mass. We have noticed high rates of palpability among our African American patient population.

Previous studies have suggested that p-DCIS may be

associated with more aggressive clinicohistologic features such as higher nuclear grade, comedonecrosis, HER2-neu positivity, and being hormone receptor-negative. DCISionRT (DRT) is a 7-gene biosignature that predicts recurrence risk, defined as either a low (0-3) or elevated (3.1-10) score. We hypothesized that p-DCIS cases in our African American patient population would have higher DRT scores when compared with nonpalpable cases (n-DCIS).

Methods

An institutional review board (IRB)-approved retrospective chart review was performed on all cases of DCIS identified at a single institution from 2021 to 2023. All cases had the results of the DRT scores (**Figure**). We analyzed clinical, histologic, and demographic features and used descriptive statistics to compare groups.

Results

Thirty-four patients were identified in the cohort and all

self-identified as African American. Fourteen patients (41%) presented with a clinically palpable mass, while 20 (59%) were detected on imaging. Overall, 25/34 (74%) had an elevated DRT score. Nine of the 14 patients (64%) of p-DCIS cases had an elevated DRT score while 5 (36%) had low scores. Out of n-DCIS cases, 16 (80%) had elevated DRT scores while 4 (20%) had low scores (Pearson chi: 1.0448; $P = .307$).

Figure.

DRT Scores		
	Nonpalpable	Palpable
DRT low risk	4 (20%)	5 (36%)
DRT elevated risk	16 (80%)	9 (64%)
	$\chi^2: 1.0448; P = .307$	

Conclusion

While invasive breast cancer is known to be more aggressive among African American women, studies have failed to identify a more aggressive in situ histology in this population. Here we report a higher-than-average rate of palpability at 41%. While most of the patients in our cohort had an elevated DRT score overall, there was no significant difference when comparing both groups. Further studies are warranted to identify factors that may predict in situ or invasive recurrence in this population.

46 Comparative Analysis of Breast Conserving Therapy vs Mastectomy in Multifocal and Multicentric Breast Cancer: A Review of the Literature

Kelly Kapp,¹ Lucy De La Cruz,¹ Carmen de Carvajal,² Nathan Wong,³ Ashwini Paranjpe¹

¹Georgetown University Medstar, Washington DC;

²University of Navarra, Pamplona;

³Conemaugh Memorial Medical Center, Johnstown, PA.

Background

Multifocal (MF) and multicentric (MC) breast cancers are known for their multiple tumor foci, posing distinct challenges in treatment and prognosis. The advent of advanced imaging techniques and treatment strategies calls for a reassessment of therapeutic approaches, specifically breast conserving therapy (BCT) vs mastectomy.

Objective

This study aims to consolidate and analyze recent data comparing the efficacy of BCT and mastectomy in the treatment of patients with MF/MC breast cancer, focusing on disease-free survival, local recurrence rates, and overall patient outcomes.

Methods

A thorough review of literature published from 2009 to October 2023 was conducted. The focus was on retrospective

studies comparing outcomes of BCT vs mastectomy in patients with MF/MC breast cancer. A search was conducted using the PubMed database. The search strategy included the terms *breast conserving surgery* or *breast conservation surgery*, or *breast conservation therapy* and *mastectomy* and *breast cancer*, or *breast neoplasm* or *multifocality*, or *multifocal* or *multicentric* or *multicentricity*. The search included full-text studies published from 1976 to October 2023. A search of bibliographies of relevant publications was also conducted.

Inclusion and Exclusion Criteria

Inclusion:

- Available in English or Spanish
- Includes BCT and mastectomy as surgical interventions.

Exclusion:

- Case reports
- Case series
- Review articles
- Articles reporting on BCS or mastectomy that do not involve MF/MC breast cancer

Results

Local relapse rates: Studies, including those by Oh et al (2006) and Lim et al (2009), showed no significant difference in local relapse rates between BCT and mastectomy. For instance, Lim et al reported local relapse rates of 2% for BCT and 0.9% for mastectomy.

Survival rates: Kadioğlu et al (2014) found a 20% higher overall survival rate in patients undergoing BCS (92%) compared with mastectomy (72%). However, this was attributed to varying tumor characteristics.

Disease-free survival: Yerushalmi et al (2012) observed no statistically significant difference in 10-year disease-free survival between BCT and mastectomy, despite a slightly higher local relapse rate in the mastectomy group (5.8% vs 4.6% for BCT).

Comprehensive analysis

A 2023 study by Yu et al, utilizing the Surveillance, Epidemiology,

and End Results database, indicated that specific patient groups might benefit more from mastectomy over BCT, based on factors such as age and tumor stage.

Conclusions

The current evidence supports the effectiveness of BCT, especially when complemented with radiotherapy and systemic therapy, for MF/MC breast cancer. Nevertheless, treatment choice should be tailored according to individual patient characteristics. These findings advocate for a more nuanced approach to MF/MC breast cancer treatment, moving beyond the historical bias toward mastectomy.

47 Can We Identify Factors That Predict DCIS Upgrade to Invasive Cancer at Mastectomy?

Kelly Mackessy,¹ Christopher Verdone,¹ Karisa Beebe,¹ Valerie L. Staradub,¹ Candice Ford,¹ Kristen Skonieczny,¹ Alexandra Haraczy,¹ Alexandra Ford,¹ Hyeon Jeong,¹ Esha Parikh,¹ Dawn Johnson Leonard¹

¹Christiana Care, Newark, DE.

Background

Ductal carcinoma in situ (DCIS) identified on core needle biopsy is upgraded to invasive breast carcinoma (IBC) on definitive surgical excision at a rate of 15% to 50%. Current guidelines recommend ipsilateral sentinel lymph node biopsy at the time of mastectomy performed for DCIS for preemptive axillary staging in the event of upstaging on final pathology. The goal of this study was to identify preoperative risk factors associated with upstaging to IBC on final pathology as an indication of which patients would most likely benefit from sentinel lymph node biopsy at the time of mastectomy.

Table.

Preoperative Factors and DCIS upgrade			
	Upgrade to invasive	Not upgrade	P value
Calcifications			
Yes	11 (84.62%)	54 (79.41%)	.2861
No	2 (15.38%)	14 (20.5%)	
Grade			
1	3 (25%)	7 (9.72%)	.1174
2-3	9 (75%)	65 (90.28%)	
Preop MRI			
Yes	9 (69.23%)	36 (48.65%)	.0969
No	4 (30.77%)	38 (51.35%)	

Methods

This is a single-institution, 20-year retrospective review of women 50 years and older undergoing mastectomy as definitive surgical therapy for a preoperative diagnosis of pure DCIS who had clinically negative lymph nodes. Multiple preoperative data points were examined including imaging appearance of the lesion, multifocal vs single lesion, histologic subtype of DCIS, grade, presence or absence of necrosis, prior history of high-risk lesions, and whether a preoperative MRI was obtained. LOGISTIC procedure (SAS) was used for statistical analysis.

Results

The upgrade rate from pure DCIS to invasive carcinoma on final pathology at our institution was 15%. Of the factors examined, none were statistically significant. Calcifications on imaging, intermediate-/high-grade DCIS, and preoperative MRI use were associated with trends toward upgrade to IBC on final surgical pathology (Table).

Conclusions

As management of breast malignancy moves toward de-escalation of axillary surgery, preoperative identification of those patients who would benefit from a more aggressive approach would help with optimal surgical treatment planning. Our study, while not showing a prevailing predictive factor for upgrade on final pathology, does show promising trends that should prompt further investigation. It is particularly notable that preoperative MRI use was not associated with a lower upgrade rate on final pathology, which is consistent with multiple studies showing that the routine use of breast MRI in preoperative evaluation does not improve cancer outcomes with invasive carcinoma.

48 The Era ‘or Error’ of Second Localization Procedures

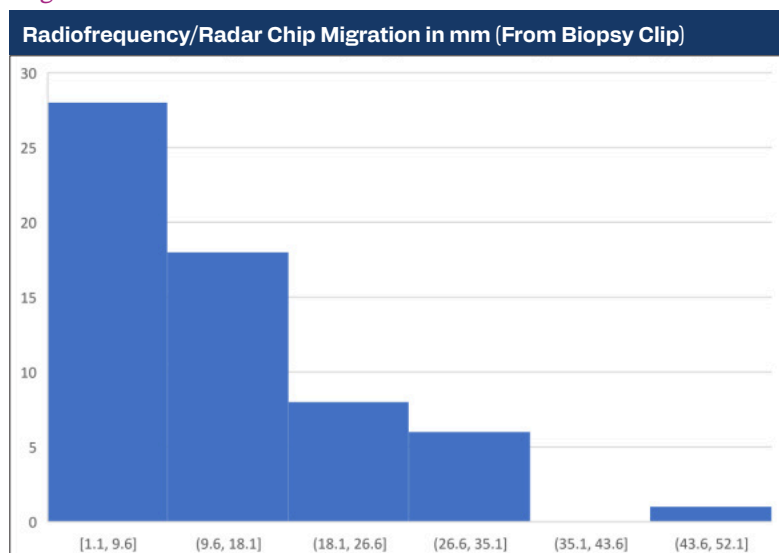
Nicole Nelson,¹ Jennifer Den,¹ H. Colleen Silva,¹ Biai Digbeu,¹ Flavia Pselman,¹ Angelica Robinson,¹ V. Suzanne Klimberg¹

¹University of Texas Medical Branch

Background

Clip migration is known to occur after a core needle breast biopsy. Radiofrequency and radar (R) breast localization involves a second localization procedure based on the prior clip placement potentially compounding the migration from the original biopsy site. Fluoroscopic intraoperative neoplasm detection (FIND) obviates the need for a second localization by using intraoperative fluoroscopy to localize the original biopsy clip using direct visualization to choose margins. We hypothesize that intraoperative localization based on the original clip vs a second localization would result in fewer positive margins due to second clip migration.

Figure.



Methods

A retrospective review was performed of patients with a diagnosis of nonpalpable malignancy between the ages of 18 to 99 years who were admitted to the breast surgery service from September 1, 2016, through August 21, 2023, with the following *Current Procedural Terminology* codes: 19281-19288, 19301, 19302, 19120, 19125, 19290, 19291, 76000, 76098, 76942, 77001, 77002, 77021, 77031, and 77032. Results were compared between the patients who underwent R localization vs FIND including age, body mass index, imaging, pathology, margins, operative reports, fluoroscopy radiation dose, and cost of each procedure. The Pythagorean theorem was used to calculate the distance in space between the initial biopsy clip and the R localization device. χ^2 was used to calculate the 2-tailed *P* value between the 2 groups.

Results

We identified 169 patients: 119 patients localized with FIND and 50 localized with R. Five percent ($n=6$) of the patients with FIND and 14% ($n=7$) of the patients with R had positive margins ($P=.04$). The average distance between the R device and biopsy clip in patients with positive margins was 20.1 mm and in those with negative margins was 11.8 mm ($P=.04$). The **Figure** demonstrates the variation in RF clip migration.

Conclusions

Although the positive margin rate with R localization is equivalent to needle-localized breast biopsies, this was still significantly greater than the positive margin rate with FIND. The positive margin rate was associated with the distance from the localization device to the initial biopsy clip. Eliminating the second localization decreases preoperative procedures and their associated discomfort, cost, and error involved in localizing the tumor and may result in improved margin positivity rates.

49 The Influence of Race on Complications in Breast Conservation Surgery: A Single Institution Study

Liane N. Obaid,¹ Janice S. Zhang,¹ Grace Y. Lee,¹ Fardeen Bhimani,² Lesley G. Coe,¹ Arianna Cavalli,² Anjuli Gupta,² Jessica Pastoriza,² Sheldon Feldman,² Maureen McEvoy²

¹Albert Einstein College of Medicine, Bronx, NY, USA;

²Montefiore Medical Center, Bronx, NY, USA.

Background

Breast conservation surgery (BCS) is a low-morbidity procedure, yet its complications can impact the patient's quality of life. Due to a paucity of literature on the social factors affecting BCS outcomes, our study aimed to assess the impact of racial factors on postoperative complications.

Methods

A retrospective chart review was conducted between 2015 and 2019 on patients undergoing BCS.

Results

A total of 332 patients fit the criteria. Fifty-five (16.7%) had complications, of which 11 (3.6%) had hematoma, 27 (8.2%) had wound infection, 6 (1.8%) had wound dehiscence, and 17 (5.13%) had persistent pain. A total of 68 patients (20.6%) had seroma. Adjuvant therapy was delayed for 25 (7.8%) patients. Patients with normal body mass index (BMI) developed more hematomas ($P=.042$).

In African American (AA) patients, those with normal BMI had more complications ($P=.003$), hematomas ($P < .001$), and

persistent pain ($P=.011$) than those with higher BMI. Additionally, AA patients with hyperlipidemia had more wound infections ($P=.018$) (Table).

Hispanic patients undergoing standard lumpectomy developed more infections than localized lumpectomy ($P=.009$). Standard lumpectomy had a higher wound infection risk than localized lumpectomy for patients 50 years or older, but this was not statistically significant ($P=.054$).

Conclusion

BCS is generally safe, but complications may delay adjuvant therapy. In our study, there were strong associations within race, but we did not find strong correlations between races. Nonetheless, future studies with larger sample sizes are warranted.

Table.

Total patients	332
Age, median (SD)	63 (11.4)
Size on pathology, median (SD)	13 (11.8)
Race/ethnicity	
African American	138 (41.7%)
White	20 (6%)
Hispanic	140 (42.2%)
Other race	33 (9.9%)
BMI, median (SD)	29.26 (6.3)
Smoking	
Current	25 (7.6%)
Former	94 (28.5%)
Pathology	
DCIS	85 (25.9%)
IDC	201 (61.28%)
ILC	17 (5.2%)
LCIS, IMC	25 (7.6%)
Stages	
0	109 (32.8%)
I	168 (50.6%)
II	46 (13.9%)
III	4 (1.2%)

Receptor Status	
ER+	253 (76.2%)
PR+	186 (56%)
HER2+	20 (6%)
Procedure	
SLNB	213 (64.2%)
Lumpectomy	54 (16.3%)
Localized lumpectomy	276 (83.6%)
Neoadjuvant therapy	
Chemotherapy	32 (10.9%)
Endocrine	9 (3.1%)
Adjuvant therapy	
Chemotherapy	59 (20.8%)
Endocrine	238 (72.5%)
Radiation (median dose = 42.4 Gy)	238 (72.5)
Comorbidities	
Diabetes	111 (33.5%)
Hypertension	236 (71.3%)
Hyperlipidemia	187 (56.5%)
Complications	
Total	55 (16.7%)
Hematoma	11 (3.6%)
Wound dehiscence	6 (1.81%)
Persistent pain	17 (5.1%)

50 Nipple Sparing Mastectomy With Immediate Lift Using Vertical Technique: Our Initial Experience

Ashwini Paranjpe,¹ Monika K. Masanam,² Kelly Kapp,¹ David H. Song,³ Lucy M. De La Cruz¹

¹Department of Surgery, MedStar Georgetown University Hospital, Washington, DC, USA

²Department of Surgery, Division of Breast Surgery, MedStar Georgetown University Hospital, Washington, DC, USA

³Department of Plastic and Reconstructive Surgery, MedStar Georgetown University Hospital, Washington, DC, USA

Background

Nipple-sparing mastectomy (NSM) is a surgical approach that allows for preservation of the nipple areolar complex (NAC). Patients who have large breasts with moderate to severe ptosis are typically not eligible for NSM secondary to increased risk of complications. We describe a novel technique of NSM using a vertical lift pattern to create a reduced skin envelope for implant- or flap-based reconstruction. Our aim is to study patient characteristics, operating room duration, outcomes, and complications to determine patient selection criteria for this approach.

Methods

We reviewed cases of bilateral vertical lift pattern nipple-sparing mastectomy performed by a single surgeon with immediate implant-based or autologous reconstruction at our institution between June 2022 and April 2023. All patients had greater than size C-cup breasts and/or moderate to severe breast ptosis. In each case, postmastectomy vertical pattern skin reductions were performed, and the NAC was transposed superiorly through a keyhole in the deepithelialized skin flap.

Results

A total of 24 breasts in 12 patients with primary breast cancer underwent bilateral vertical pattern lift NSM with immediate reconstruction. The average age was 49.1 years and average BMI was 33.7 kg/m². All 12 patients had large, ptotic breasts. Seven patients underwent axillary sentinel lymph node biopsies and 2 patients underwent targeted axillary lymph node dissection. Seven patients underwent direct-to-implant (DTI) reconstruction and 5 patients underwent autologous reconstruction with deep inferior epigastric perforator (DIEP) flaps. For the patients who underwent DTI reconstruction, mean operative time was 3.4 hours and length of stay was 9.8 hours. With autologous reconstruction, mean operative time was 9.9 hours and length of stay was 2.5 days. One patient with BMI 44.3 kg/m² experienced bilateral mastectomy flap and NAC necrosis requiring revision surgery. Only 2 other patients experienced unilateral partial nipple necrosis, which healed by secondary intention.

Conclusions

At our institution, vertical lift pattern NSM is a relatively safe surgical option for women with larger, ptotic breasts. Skin reduction with deepithelialization and tissue infolding maintains perfusion to promote NAC and skin flap survival with immediate implant- or flap-based reconstruction. Careful selection criteria including BMI, breast size, and degree of breast ptosis should be used when offering this approach to patients to reduce complication risk.

51 Ductal Carcinoma In Situ With Microinvasion on Biopsy—What Are the Predictors of Upstaging?

Priyanka Parmar,¹ Jessica Pastorzia,² Cien Huang¹

¹Albert Einstein College of Medicine, Bronx, NY

²Montefiore Medical Center, Bronx, NY

Background

Ductal carcinoma in situ with microinvasion (DCISM) follows the same management as used for DCIS. Breast-conserving surgery without sentinel lymph node biopsy is indicated, as the risk of upstaging to invasive carcinoma (> 1 mm) is low. Interestingly, it is reported that approximately 30% of patients with DCISM on biopsy will upstage to invasive cancer, creating a challenge in balancing the risk of overtreatment to undertreatment. The aim of this study is

to identify risk factors for upstaging of DCISM to invasive disease (> 1 mm).

Methods

A retrospective chart review of women over the age of 18 years who had a DCISM on initial breast biopsy from 2013 to 2019 at a large single-center institution was performed. Demographic, clinical, histologic, and radiographic data were collected.

Descriptive statistics were used to report means and standard deviations. Fisher exact test was used for categorical variables, and the Student *t* test was used for numerical variables to identify variables that may be associated with final pathologic upstaging.

Results

A total of 46 women were identified in the age range of 41 to

76 years. Sixteen patients (35%) with DCISM on biopsy were upstaged to invasive carcinoma (> 1 mm) (**Table**). Upstaging to invasive disease was correlated with palpable mass (OR, 9.33; CI, 1.23-117.3; *P* = .0468), hormone receptor negativity on biopsy (OR, 4.22; CI, 1.19-13.5; *P* = .049), and size on diagnostic mammogram of at least 3.5 cm (OR, 5.00; CI, 1.095-17.56; *P* = .0367).

Conclusions

We report a similar rate of upstaging as previous studies; however, to our knowledge, we are the first to report associated risk factors with upstaging to invasive carcinoma (> 1 mm) from DCISM on biopsy. This can guide surgeons to identify which patients may require a sentinel lymph node biopsy at the time of breast-conserving surgery.

Table.

Patient Characteristics			
	Upstaged (n = 16)	Not upstaged (n = 30)	OR (95% CI); <i>P</i> < .05
Demographics			
Age range, years			
40-50, No. (%)	5 (31.3%)	9 (30.0%)	
51-60, No. (%)	5 (31.3%)	9 (30.0%)	
61-70, No. (%)	6 (37.5%)	7 (23.3%)	
71-80, No. (%)	0	5 (16.7%)	
Race			
White, non-Hispanic, No. (%)	3 (18.8%)	7 (23.3%)	
White, Hispanic, No. (%)	6 (37.5%)	7 (23.3%)	
Black or African American, No. (%)	7 (43.8%)	10 (33.3%)	
Asian, No. (%)	0	2 (6.7%)	
Other, No. (%)	0	4 (13.3%)	
Insurance status			
Medicaid/Medicare, No. (%)	10 (62.5%)	14 (46.7%)	OR, 1.91 (CI, 0.600-0.08); <i>P</i> = .364
Private, No. (%)	6 (37.5%)	16 (53.3%)	
Clinical findings			
Palpable mass, No. (%)	4 (25%)	1 (3.3%)	OR, 9.33 (CI, 1.23-117.3); <i>P</i> = .0468
Biopsy pathology			
Hormone receptor-negative, No. (%)	9 (56.3%)	7 (23.3%)	OR, 4.22 (CI, 1.19-13.5); <i>P</i> = .049

Radiographic findings			
MG performed, No. (%)	16 (100%)	27 (90.0%)	
Size on MG, cm	4.5 ± 4.0 cm	2.1 ± 1.6 cm	<i>P</i> =.0121
Size ≥ 3.5 cm, No. (%)	8 (50%)	4 (13%)	OR, 5.00 (CI, 1.095-17.56); <i>P</i> =.0367
Size < 3.5 cm, No. (%)	8 (50%)	20 (66.7%)	
Time from biopsy to surgery, days	164.2 ± 335.4	50.1 ± 24.61	<i>P</i> =.0725

MG, mammogram.

53 The Utility of Sentinel Lymph Node Biopsy in High-Grade Ductal Carcinoma In Situ

Lauren Westcott,¹ Caroline Breit,¹ Ellen Wilson,¹ Darby Dwyer,¹ Holly Hodge,² Lucy Wallace,¹ Michael Grant¹

¹Baylor University Medical Center, Dallas, TX;

²Texas A&M University, College Station, TX

Background

The upstage rate of ductal carcinoma in situ (DCIS) to invasive carcinoma on final pathology is variable, with rates up to 43.6%. Current guidelines recommend sentinel lymph node biopsy (SLNB) in patients with DCIS with factors for infiltration and in patients undergoing mastectomy. This study aims to assess the utility of SLNB in high-grade DCIS by examining the rate of tumor upstaging, SLNB, and positive lymph nodes.

Methods

A retrospective review was performed of patients at our institution who were diagnosed with high-grade DCIS between 2001 and 2023 and who underwent surgical intervention. Data collected for each patient included demographic factors, clinical factors, biopsy pathology, clinical stage, surgical operation, surgical pathology, pathologic stage, and complications including recurrence and lymphedema. Primary end points were the rate of upstaging to invasive carcinoma, rate of performing SLNB, and rate of sentinel lymph node positivity. Patient characteristics were summarized by mean and standard deviation for continuous variables and by frequency and percentages for categorical variables. Differences between characteristics were assessed by Student *t* test for continuous variables and Fisher exact tests for categorical variables. Statistical tests were 2-sided with a significance level set at *P*<.05.

Results

Two hundred and seventeen patients were analyzed. Thirty patients (13.8%) upstaged on final pathologic assessment. Twenty-seven patients upstaged to pathologic stage IA and 3 patients to stage IIA. Factors associated with upstaging included imaging size greater than 4 cm (*P*=.003) and surgical pathology indicating HER2 positivity (*P*<.001). Comedonecrosis on needle biopsy, as a predictor of upstaging, approached but did not meet statistical significance (*P*=.057). Fifty-five patients (25.3%) underwent SLNB (Table). Notable factors associated with undergoing SLNB included comedonecrosis on needle biopsy (*P*=.022), palpable mass (*P*<.001), imaging size greater than 4 cm (*P*=.006), surgical pathology indicating HER2 positivity (*P*<.001), and mastectomy as the surgical operation (*P*<.001). Two patients (3.6%) who underwent SLNB had a positive lymph node. Both of these patients' core needle biopsies demonstrated estrogen and progesterone receptor-positive DCIS, clinical stage 0, with a mean imaging size of 3.25 cm. Neither had a palpable mass. Both patients underwent mastectomy with final pathology showing hormone receptor-positive, HER2-negative invasive ductal carcinoma along with DCIS. Of the 24 patients with core needle biopsies demonstrating microinvasive disease, none had positive sentinel lymph nodes. No axillary recurrences or lymphedema were observed.

Conclusions

The overall rate of upstaging in this study was relatively low at 13.8%. Of the 55 patients who underwent SLNB, 2 patients (3.6%) had a positive lymph node. In both patients with a positive node, the SLNB was performed in the setting of mastectomy. While the vast majority of lumpectomy patients completed a radiation therapy protocol, no axillary recurrences were observed. Given these findings, surgeons should consider the value of the SLNB in patients with high-grade DCIS undergoing lumpectomy and counsel patients as to the risks vs benefits. Assessing clinicopathologic factors may assist surgeons in counseling patients regarding the risk of upstaging and the necessity of up-front SLNB.

Table.

Upstaging, SLNB, and Positive Lymph Node in Patients With High-Grade DCIS (n=217)	
Factors associated with upstaging (n = 30)	P value
Imaging size > 4 cm	.003
HER2 positivity on surgical pathology	< .001
Comedonecrosis on needle biopsy	.057
Factors associated with undergoing SLNB (n=55)	P value
Imaging size > 4cm	.006
HER2 positivity on surgical pathology	<.001
Comedonecrosis on needle biopsy	.022
Mastectomy as surgical operation	<.001
Palpable mass	<.001
Characteristics of patients with positive node (N2)	
Hormone receptor-positive DCIS on needle biopsy	
Clinical stage, 0	
Mean imaging size, 3.25 cm	
Mastectomy as surgical operation	
Hormone receptor-positive, HER2-negative IDC plus DCIS on surgical pathology	

DCIS, ductal carcinoma in situ; IDC, invasive ductal carcinoma; SLNB, sentinel lymph node biopsy.

59 Acceptability of Microbiome Sampling-Based Surgical Oncology Research in Minority Breast Cancer Patients

Daniel A. Gomez,¹ Tizita Wolde,¹ Tulay Koru-Sengul,¹ Kristin Rojas²

¹Leonard M. Miller School of Medicine, University of Miami

²DeWitt Daughtry Family Department of Surgery, University of Miami

Background

Clinical research participants are too often not representative of populations most affected by cancer or those with the highest burden of disease. Women of color are underrepresented in surgical

oncology research. Miami offers a unique population as a majority-minority city, which allows greater sampling of underrepresented groups. Through a feasibility analysis of an ongoing study, we sought to challenge the historical dogma that non-White or non-English-speaking patients are less likely to agree to participate in surgical research.

Methods

Women undergoing breast surgery were approached to participate in a prospective study. Our primary outcome was “consent to participate” and secondary outcome was willingness to participate in future microbiome research. Data description and analysis were performed (SAS vs 27.0.1.0).

Results

Univariate models showed that non-White (OR, 1.318; 95% CI, 0.378-4.588) or Hispanic (OR, 1.978; 95% CI, 0.784-4.989) patients were not more likely to decline to participate than their White counterparts (**Table**). The combined minority (non-White, non-Hispanic) model showed an increased likelihood of participating (OR, 95%). Multivariate analysis showed similar

results while controlling for age and language. Univariate analysis for our second outcome showed that patients who are a minority are less likely to participate in future microbiome clinical research compared with their White counterparts (OR, 95%), but Hispanic patients are more likely to participate in future microbiome clinical research compared to their White counterparts (OR, 95%).

Table.

Select Characteristics as Proportions of the Race/Ethnicity/Language Group.			
	All (n)	% Agreed	% Did not agree
Age	60.84	59.80	62.41
Race	3	1 (33)	2 (66)
Asian	9	7 (77)	2 (22)
Black	55	32 (58)	23 (41)
White	1	1 (100)	0
Ethnicity	36	20 (55)	16 (44)
Non-Hispanic	32	21 (65)	11 (34)
Hispanic			
Language	47	28 (59)	19 (40)
English	21	13 (61)	8 (38)
Spanish			

Conclusion

Non-White, non-Hispanic patients are more likely to participate in surgical research, and most patients in our diverse cohort would continue to participate in microbiome research. By ensuring they are actively included in clinical trials, we can continue to elucidate differences in presentation and lessen discrepancies in treatment. All eligible patients should be approached to be included in clinical trials regardless of race, ethnicity, or primary language and without the assumption that they will decline to participate.

68 Magnetic Tracer Increases Surgical Productivity and Reduces Time to Surgery When Compared With Standard Lymph Node Mapping Modalities

Rhiana Menen,¹ Sytoria Zigmund²

¹Mountain State Breast and General Surgery, Boise, ID

Background

Delayed cancer surgery is a core challenge faced by large-volume hospitals. This is influenced by long workups, operating room (OR) access, scheduling across multiple service lines, and continuing institutional cost pressures. The Commission on Cancer recommends that breast surgery be performed within 60 days of diagnosis. Standard tracers contribute to delays due to scarcity of products and appointments and increase in efficiency and cost due to multiple patient visits. A nonradioactive magnetic tracer (Magtrace) can replace a standard tracer, resulting in reduced cost and increased OR utilization. The aim of this study was to investigate the impact of the magnetic tracer (MT) on hospital workflows in a high-volume nonacademic medical center.

Methods

A retrospective analysis of 3 surgeons (A, B, C) over 3 years (March to August of 2021, 2022, and 2023) performing breast surgery. Surgeon A adopted the MT in March 2023 while B and C continued with Tc99 and blue dye. Outcomes collected included the number of surgeries performed, the number of days between referral and surgery, and the supply costs of the tracers.

Results

A total of 1665 patient records were analyzed (**Table**). Post MT adoption, surgeon A saw an increase in monthly breast surgical volume by 8 additional surgeries (47.5 in 2023 vs 39.5 in 2021-22, $P = .0882$). Surgeons B and C observed a decrease in volumes (surgeon B, 25.3 patients vs 32.23, $P = .0133$; surgeon C, 18.2 vs 21.4, $P = .2468$). Surgeon A experienced a reduction in the average time from referral to surgery by 11 days (from 80 to 69 days). The cost analysis revealed that MT was \$656.65 per patient whereas the average Tc99 cost was \$854.66 and isosulfan blue (BD) was \$979.73. Per-patient cost savings were \$198.01 when compared with Tc99 alone and \$1177.74 when compared with Tc99 and BD.

Conclusions

Although there are many factors contributing to OR access and surgeon volume, the use of MT in a high-volume, nonacademic United States center may increase surgical volumes and reduce the time from referral to surgery. This approach not only improves hospital efficiency but also offers potential cost savings and scheduling benefits. These findings suggest that the MT may contribute to broader efficiencies in cancer care and may facilitate COC compliance. Further data collection is underway to monitor trends over time with wider adoption of the MT platform across surgeons.

Table.

Monthly Breast Surgeries Performed		2021-2022	2023
Surgeon A	Monthly avg	39.5	47.5
	% change		20%
Surgeon B	Monthly avg	32.3	25.3
	% change		-22%
Surgeon C	Monthly avg	21.4	18.2
	% change		-15%

avg, average

69 The Importance of Tri-Modality Therapy for De Novo Stage IV Invasive Lobular Carcinoma (ILC) Presenting With Bone-Only Metastases

Atilla Soran,¹ Berk Goktepe,¹ Berkay Demirors,² Serdar Ozbas,² E. Sezgin, Jamila Al-Azhri,³ Shruti Zaveri,⁴ S. Meas, Anthony Lucci,⁵ Priscilla F. McAuliffe¹

¹University of Pittsburgh, Pittsburgh, PA, USA;

²Bursa Yüksek İhtisas Training and Research Hospital, Bursa, Turkey;

³Department of Surgery, King Fahad Specialist Hospital, Dammam, Saudi Arabia;

⁴UT Southwestern Medical Center, Dallas, TX, USA;

⁵The University of Texas MD Anderson Cancer Center, Houston, TX, USA

Background

Locoregional therapy (LRT) of the primary breast carcinoma (BC) in the setting of de novo oligometastatic stage IV disease is strongly debated, despite both retrospective data and prospective trials supporting it. This study aims to determine the overall survival (OS) benefit of LRT combined with systemic therapy (ST) vs ST only in the management of invasive lobular carcinoma (ILC) presenting with de novo stage IV bone-only metastases.

Methods

Patients who presented from 2014 to 2022 with bone-only metastases were retrospectively identified from a prospectively maintained multi-institutional cohort of patients with oligometastases. Univariable and multivariable Cox proportional hazards models were used to identify factors associated with OS. The Kaplan-Meier method was used to estimate time-to-

event outcomes. Groups were compared using the log-rank test. Variables included demographics, tumor size, histology, receptor status, use of endocrine therapy, chemotherapy, bisphosphonates, and ovarian suppression.

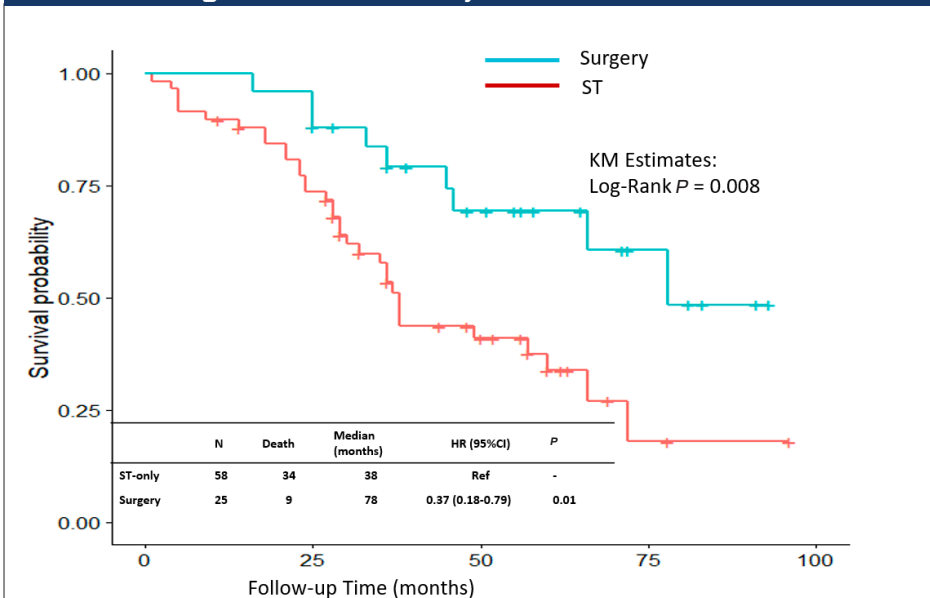
Results

Of 744 patients identified, 83 (11%) had ILC. Patients with ILC were older (58.9 years vs 52.6 years; $P < .05$), had a higher number of multiple tumors (81% vs 61%; $P < .05$), and had lower HER2-positive frequency (12% vs 29%; $P < .05$) than those with IDC. Hazard of death was 63% higher in ILC vs IDC (HR, 1.63; 95% CI, 1.1-2.24; $P = .003$). Median OS was 69 months and 49 months in IDC and ILC, respectively. For patients with ILC, baseline characteristics of age, body mass index, T stage, hormone receptor status, ST, and intervention to metastatic sites did not differ between those who had LRT plus ST ($n = 25$; 30%) vs ST only ($P > .05$). At a median follow-up of 36 months (IQR, 26-57), 48% ($n = 40$) of patients with ILC had died. In the ILC group, Kaplan-Meier OS estimates demonstrated longer OS among patients who underwent LRT+ST (median 78 months) vs 38 months with ST only, log-rank $P = .008$; **Figure**). Hazard of death was 63% lower with LRT+ST vs ST only (HR, 0.37; 95% CI, 0.18-0.79; $P = .01$). LRT plus ST was the only factor contributing to OS at 36 months (OR, 3.64; 95% CI, 1.33-11.20; $P = .02$).

Conclusion

Patients with ILC and de novo bone-only metastases have a worse prognosis compared to those with IDC, but those who have LRT plus ST have a better OS than those who receive ST only. While there may be selection biases in our multi-institutional retrospective cohort, patients with ILC should be considered for LRT for the primary tumor combined with ST.

Systemic Therapy Only vs Locoregional Therapy With Systemic Therapy in Patients With Stage IV ILC With Bone-Only Metastases



73 Limitations in the Application of Clinicopathologic Factors Alone in Predicting Radiation Benefit for Women With Low-Risk DCIS After Breast Conserving Surgery: The Impact of a 7-Gene Biosignature Based on 10-year Ipsilateral Breast Recurrence (IBR) Rates

Frank A. Vicini,¹ Chirag S. Shah,² Julie Margenthaler,³ David Dabbs,⁴ Fredrik Wärnberg,⁵ Sheila Weinmann,⁶ Pat W. Whitworth,⁷ Brian Czerniecki,⁸ G. Bruce Mann,⁹ Steven C. Shivers,⁴ Karuna Mittal,⁴ Troy Bremer⁴

- ¹Michigan Healthcare Professionals, Farmington Hills, MI;
- ²Department of Radiation Oncology, Taussig Cancer Institute, Cleveland Clinic, Cleveland OH;
- ³Siteman Cancer Center, Washington University, St Louis, MO;
- ⁴PreludeDx, Laguna Hills, CA;
- ⁵University of Gothenburg, Gothenburg, Sweden;
- ⁶Kaiser Permanente Center for Health Research, Portland, OR;
- ⁷University of Tennessee, Nashville, TN;
- ⁸H. Lee Moffitt Cancer Center and Research Institute, Department of Breast Oncology, Tampa, FL;
- ⁹University of Melbourne, Melbourne, Australia.

Background

Most women diagnosed with ductal carcinoma in situ (DCIS) receive radiotherapy (RT) after breast-conserving surgery (BCS); however, clinical trials show that over 70% of women with BCS alone will not have a recurrence and therefore not benefit from RT. Traditionally, clinicopathologic (CP) factors have been used to select for whom to de-escalate treatment, but prospective trials have failed to identify a low-risk CP group that did not benefit from RT with respect to local control. This study assessed the reclassification of patients with low-risk CP into risk groups defined by the 7-gene biosignature and compared with 10-year ipsilateral breast recurrence (IBR) rates.

Methods

Women (n = 926) from 4 international DCIS cohorts treated with BCS had formalin-fixed paraffin-embedded tissue samples analyzed at a CLIA lab (Laguna Hills, CA). CP patients who were low risk were identified using a) RTOG-9804-like criteria (Nuclear grade 1 or 2, size 2.5 cm or less, nonpalpable, screen-detected, and margin negative [no ink on tumor]) and b) Memorial Sloan Kettering Cancer Center (MSKCC)-like criteria (low-risk score of less than 220, determined using nomogram weighted factors [excluding: number of re-excisions and RT treatment], and using no ink on tumor instead of close margin). The 7-gene DCIS biosignature combined biomarkers with CP factors (age, size, palpability, and margin status) using an algorithm reporting a decision score (DS) and residual risk

subtype (RRt). Women with low-risk CP were classified into biosignature low-risk (DS of 2.8 or less, no RRt) or high-risk (DS or more than 2.8 +/- RRt) groups. The 10-IBR rates with and without RT were assessed by Kaplan-Meier rates and Cox proportional hazard analyses.

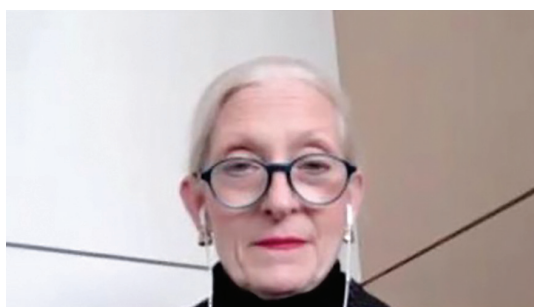
Results

Overall, 37% of all women were classified into the biosignature low-risk group, while 51% and 34% were classified into CP low-risk groups (RTOG-9804-like, MSKCC-like, respectively). The biosignature low-risk group (n = 338) had a 10-year IBR risk of 5.6% after BCS and no significant RT benefit (absolute RT benefit = .8%, $P = .70$), 99% negative predictive value (NPV) for RT benefit. CP low-risk groups had 10-year IBR rates of 12% and 8% after BCS without RT with an absolute

6% ($P = .04$) and 4% ($P = .1$) IBR rate reductions with RT. The biosignature reclassified 51% and 63% of CP low-risk patients into the biosignature high-risk group. Importantly, these patients had higher IBR rates without RT (20% and 12%) and significant 13% ($P = .005$) and 8% ($P = .01$) absolute IBR rate reductions from RT. CP low-risk patients with concordant biosignature low risk demonstrated no significant RT benefit.

Conclusion

The 7-gene predictive biosignature more reliably identified patients with low 10-year IBR rates and no significant RT benefit than the traditional CP low-risk criteria (RTOG-9804-like, MSKCC-like). Importantly, those CP patients who were low-risk and were reclassified as biosignature high risk had increased 10-year IBR rates and significant RT benefits.



Imaging Agent May Help Detect Breast Cancer Tumors During Surgery

During the Society of Surgical Oncology 2024 Annual Meeting, Barbara Smith, MD, PhD, spoke with CancerNetwork about the potential utility of fluorescence-guided breast cancer surgery with pegulicanine in the context of findings from the phase 3 INSITE trial (NCT03686215). Data from this study highlighted that a portion of patients with breast cancer avoided a second surgery following the use of a pegulicanine-guided operation.

To watch full video, visit Cancernetwork.com/INSITE_MBCC