

## 53 Comparison of Surgical Complications With Direct-to-Implant vs Tissue Expander Reconstruction After Wise Pattern Skin-Sparing Mastectomy

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### Background

Wise Pattern Mastectomy is a common incision utilized in patients with large, ptotic breasts undergoing skin-sparing mastectomy and immediate breast reconstruction (IBR). This incision pattern is associated with an increased risk of delayed wound healing and skin necrosis, which may be further influenced by the type of IBR performed. We compared surgical complications in patients undergoing IBR with Direct-to-Implant (DTI) vs Tissue Expander (TE) after Wise Pattern Skin-Sparing Mastectomy (WSSM).

### Materials and Methods

Patients who underwent WSSM and IBR from 2019 to 2023 were selected. Patient characteristics, clinical features, and surgical complications were compared between patients who underwent DTI vs TE IBR. Multivariable logistic regression analysis was performed to identify factors associated with major complications (surgical site infection [SSI], skin necrosis requiring reoperation, and reconstruction loss) and any 30-day complication controlling

for patient age, race, ethnicity, body mass index (BMI), presence of diabetes, tobacco use, neoadjuvant chemotherapy, reason for mastectomy, axillary surgery, mastectomy weight, and type of reconstruction.

### Status

A total of 144 patients who underwent 217 mastectomies were evaluated: 73 bilateral (51%) and 71 unilateral (49%); 117 DTI (54%) and 100 TE (46%). **(Table)** Most patients were ≥ 50 years old (64%), White (83%), Hispanic (64%), and had a BMI < 30 kg/m<sup>2</sup> (58%). Neoadjuvant chemotherapy was utilized in 35% of patients. The reason for mastectomy was cancer in 64%, and axillary surgery was performed in 66% of cases. The mastectomy weight was ≥ 1000 grams in 41% of cases. Major complications occurred in 21% of cases: SSI in 12% (DTI 15% vs TE 9%), skin necrosis requiring reoperation in 11% (DTI 12% vs TE 10%), and reconstruction loss in 13% (DTI 15% vs TE 10%). SSI and skin necrosis requiring reoperation were associated with reconstruction loss (SSI, *P* ≤ .001; skin necrosis, *P* ≤ .001). Multivariable analysis showed that breast weight ≥ 1000 grams was associated with major complications (OR, 2.82; 95% CI 1.27-6.26; *P* = .011) and Hispanic ethnicity, current smoking, and DTI reconstruction were associated with any 30-day complication (Hispanic ethnicity: OR, 3.33; 95% CI 1.62-6.87; *P* = .001; current smoking: OR, 5.57; 95% CI 1.05-29.02; *P* = .044; DTI, OR, 2.40; 95% CI 1.31-4.40; *P* = .005).

**Table.** Patient Characteristics, Clinical Features, and Surgical Outcomes

	Total	DTI	TE	P value
<b>Patients</b>	<b>144 (100%)</b>	<b>74 (51%)</b>	<b>70 (49%)</b>	
<b>Age</b>				.923
< 50 years	52 (36%)	27 (36%)	25 (36%)	
≥ 50 years	92 (64%)	47 (64%)	45 (64%)	
<b>Race</b>				.617
White	119 (83%)	61 (82%)	58 (82%)	
Black	24 (17%)	12 (16%)	12 (17%)	
Other	1 (0.7%)	1 (1%)	0 (0%)	
<b>Ethnicity</b>				.923
Hispanic	92 (64%)	47 (64%)	45 (64%)	
Non-Hispanic	52 (36%)	27 (36%)	25 (36%)	
<b>BMI</b>				.159
< 30 kg/m <sup>2</sup>	84 (58%)	39 (53%)	45 (64%)	
≥ 30 kg/m <sup>2</sup>	60 (42%)	35 (47%)	25 (36%)	

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<b>Diabetes</b>				.160
Yes	14 (10%)	10 (14%)	4 (6%)	
No	130 (90%)	64 (86%)	66 (94%)	
<b>Tobacco use</b>				.381
Current	7 (5%)	4 (5%)	3 (4%)	
Never	104 (72%)	56 (76%)	48 (69%)	
Former	33 (23%)	14 (19%)	19 (27%)	
<b>Neoadjuvant chemotherapy</b>				.915
Yes	50 (35%)	26 (35%)	24 (34%)	
No	94 (65%)	48 (65%)	46 (66%)	
<b>Mastectomy procedures</b>	<b>217 (100%)</b>	<b>117 (54%)</b>	<b>100 (46%)</b>	
<b>Reason for mastectomy</b>				.581
Risk reduction	78 (36%)	44 (38%)	34 (34%)	
Cancer	139 (64%)	73 (62%)	66 (66%)	
<b>Axillary surgery</b>				.618
None	73 (34%)	41 (35%)	32 (32%)	
SLNB	115 (53%)	62 (53%)	53 (53%)	
ALND	29 (13%)	14 (12%)	15 (15%)	
<b>Breast weight</b>				.052
<1000 grams	128 (59%)	62 (53%)	66 (66%)	
≥1000 grams	89 (41%)	55 (47%)	34 (34%)	
<b>Complications</b>				
SSI	26 (12%)	17 (15%)	9 (9%)	.211
Reoperation for skin necrosis	24 (11%)	14 (12%)	10 (10%)	.645
Reconstruction loss	28 (13%)	18 (15%)	10 (10%)	.238
Major complication	46 (21%)	26 (22%)	20 (20%)	.690
Any 30-day complication	93 (43%)	60 (51%)	33 (33%)	.007

ALND, axillary lymph node dissection; BMI, body mass index; DTI, direct to implant; SLNB, sentinel lymph node biopsy; SSI, surgical site infection; TE, tissue expander.

## 55 Do Genetic Counseling and Testing Affect Rates of Contralateral Prophylactic Mastectomy in Patients Without Clinically Actionable Mutations?

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### Background

Breast cancer is most commonly a unilateral disease. Among patients with unilateral breast cancer undergoing mastectomy who

are not at elevated genetic risk, rates of contralateral prophylactic mastectomy (CPM) have been increasing despite lack of evidence for improvement in outcomes. This study assesses factors influencing rates of CPM vs unilateral mastectomy (UM) in patients with unilateral primary breast cancer.

### Materials and Methods

369 women with unilateral breast cancer treated with mastectomy between January 2020 and December 2023 were identified from our tumor registry for retrospective chart review. Preoperative genetic counseling (pGC) and testing were assessed and those with deleterious genetic mutations were excluded. Negative genetic results, variants of unknown significance and pending tests prior to

surgery were included. Clinical and patient factors were compared using logistic regression between patients who underwent UM vs mastectomy with CPM.

## Results

Of 369 patients, 223 (60.4%) underwent UM, while 146 (39.6%) chose CPM. Overall, 288 (78.0%) of patients in our study group received pGC. Of those managed with CPM, 89.7% had pGC as compared with 70.4% of patients who had UM ( $P < .001$ ). Most counseled patients had genetic testing sent prior to surgery (94.4%). Patients who underwent CPM were also more likely to have had genetic testing than those managed with UM (87.0% vs 65.0%,  $P < .001$ ). Younger patients were more likely to elect CPM; of 109 patients aged  $< 50$ , 67 (61.5%) had CPM while of the 260 patients aged  $\geq 50$ , only 79 (30.4%) chose CPM ( $P < .001$ ). Self-reported positive family history of breast

cancer (FHx) was also associated with CPM, with 55.5% of those undergoing CPM reporting FHx compared with 42.2% for UM ( $P = .012$ ). Most patients in our study had reconstruction (72.4%). Patients managed with CPM were more likely to have reconstruction (91.8% vs 59.6%,  $P < .001$ ) (Table).

## Conclusion

pGC and genetic testing were associated with a higher rate of CPM, even though patients positive for deleterious mutations were excluded from this study. Patients undergoing reconstruction, younger patients, and patients who reported FHx were also more likely to have CPM. pGC and genetic testing groups may be enriched with younger patients and/or those with FHx. Patients often have a surgical plan in place prior to receiving their genetic testing results. Our study demonstrates that the decision for CPM is correlated with factors other than documented genetic risk.

**Table 1. Univariate Analysis of Factors Associated With CPM**

	CPM	UM	P value
<b>Genetic counseling, n (%)</b>			<.001
Yes	131 (89.7)	157 (70.4)	
No	15 (10.3)	66 (29.6)	
<b>Genetic testing, n (%)</b>			<.001
Yes	127 (87.0)	145 (65.0)	
No	19 (13.0)	78 (35.0)	
<b>Age, n (%)</b>			<.001
<50	67 (45.9)	42 (18.8)	
$\geq 50$	79 (54.1)	181 (81.2)	
<b>Family history of BC, n (%)</b>			.012
Yes	81 (55.5)	94 (42.2)	
No	65 (44.5)	129 (57.8)	
<b>Reconstruction, n (%)</b>			<.001
Yes	134 (91.8)	133 (59.6)	
No	12 (8.2)	90 (40.4)	

BC, breast cancer; CPM, contralateral prophylactic mastectomy; UM, unilateral mastectomy.

## 60 Nipple-Sparing Mastectomy in Patients With *BRCA* and Other Breast Cancer-Related Gene Mutations

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### Background

Nipple-sparing mastectomy (NSM) and genetic panel testing have become more common in breast care. Our study aims to evaluate the outcomes of patients with *BRCA* and other breast cancer-related gene mutations who have undergone NSM.

### Materials and Methods

We conducted an institutional review board–approved chart review of patients with breast cancer–related gene mutations identified in a database of patients with NSM performed from 2007 to 2017 in a community hospital. Clinical and pathological data were collected and analyzed.

### Results

Among the 271 patients in the NSM database, 226 (83%) underwent genetic testing, of which 102 (45%) had only *BRCA* testing and 124 (55%) had panel testing. Fifty-eight patients (26%) tested positive for a genetic mutation, of which 53 patients (24%) were identified with a breast cancer–related gene mutation. These mutations were *BRCA1* in 22 patients (42%), *BRCA2* in 22 patients (42%), *ATM* in 3 patients (6%), *PALB2* in 3 patients (6%), *CHEK2* in 3 patients (6%), and *CDH1* in 1 patient (2%). Among those patients, one had both *BRCA2* and *CHEK2* mutations.

The purpose of the NSM was for only risk reduction in 40 patients (76%), combined treatment and risk reduction in 12 patients (23%), and only treatment in 1 patient (2%). All patients underwent immediate reconstruction, with direct implant reconstruction being the most common in 29 patients (55%), followed by autologous tissue flaps in 13 patients (25%), and tissue expanders in 11 patients (21%). Nine patients (17%) had invasive ductal carcinoma (IDC) and 5 patients (9%) had ductal carcinoma in situ (DCIS). Three patients had chemotherapy only, 1 patient had endocrine therapy only, 3 patients had both chemotherapy and endocrine therapy, and 2 patients had chemotherapy, post-mastectomy radiation, and endocrine therapy. There were no incidental cancers identified in prophylactic NSM.

The median follow-up period was 116 months (range, 0-197). No breast cancers developed on the side of the prophylactic NSM. No local recurrence was observed. There was 1 regional and 1 distant recurrence. One patient with a *BRCA1* mutation had undergone neoadjuvant chemotherapy, a therapeutic NSM for a triple-negative IDC with a negative sentinel node biopsy and a complete pathologic response, and a contralateral risk-reducing NSM; she developed an axillary recurrence on the therapeutic side. One patient with a *BRCA2* mutation with a prior right-modified radical mastectomy for a triple-negative invasive cancer later underwent a prophylactic NSM; she developed bone metastasis. There were no mortalities in the follow-up period.

### Conclusion

Our study suggests that NSM is a safe surgical approach for patients with *BRCA* and other breast cancer–related gene mutations. Further studies are needed to support these findings.

## 64 A Prospective Study to Accurately Define the Nipple-Ward Margins in Patients Undergoing Lumpectomy for Breast Cancer

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### Background

Breast conserving therapy (BCS) followed by adjuvant radiotherapy has been shown to be as effective as mastectomy in terms of oncological outcomes. Ensuring negative resection margins is critical to minimizing recurrence, with studies supporting the benefit of shaving additional margins during BCS. However, there is limited

data on which specific margin contributes most to re-excision rates. A retrospective study at our institution investigated the role of the nipple-ward margin (margin of tissue oriented in the direction of the nipple in situ) and how it contributed to re-excision rates by correlating imaging findings with surgical pathology. The study found that 38.8% of re-excisions were due to positive nipple-ward margins, with nearly 50% of single-positive margins in this direction. This study aims to identify true nipple-ward margins immediately after surgical excision to determine their role in ductal carcinoma in situ (DCIS) and invasive breast cancer spread.

### Materials and Methods

This prospective study will recruit women aged  $\geq 18$  years with DCIS or invasive breast cancer undergoing lumpectomy. Exclusion criteria include re-excision surgery, central lumpectomy with nipple removal, and mastectomy. Once informed consent is obtained, patients will undergo standard lumpectomy. Once the specimen



is removed, an additional suture marking the nipple-ward margin will be placed (in addition to institution-specific standard suture orientation markings). Surgeons will also note distance from nipple-ward margin to nipple as well as distance from incision to lesion. Pathology will be reviewed with emphasis on the nipple-ward margin, looking for residual tumor cells on ink for invasive cancer and less than a 2-mm margin for DCIS. Patient factors, tumor characteristics, and treatment modalities (eg, age, race, body mass index, receptor status, stage, neoadjuvant chemotherapy, etc.)

will be retrospectively reviewed. Statistical analysis will assess the correlation between positive nipple-ward margins, re-excision rates, and other variables.

## Status

Patient enrollment began in November 2024 and will continue with the goal of recruiting at least 100 patients within a single institution. The anticipated completion date will be November 2025.

## 65 The Outcomes of Nipple Sparing Goldilocks Mastectomy in a Primarily Overweight and Obese Population

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### Background

Women with higher body mass index (BMI) face increased risks of complications and suboptimal aesthetic outcomes after breast reconstruction, especially with implants. Traditional methods often require multiple surgeries using tissue expanders or autologous reconstruction. The nipple sparing Goldilocks mastectomy (NSGM) offers a safe, effective, single-stage alternative with favorable cosmetic results and simpler recovery. This study evaluates the intermediate outcomes of NSGM, focusing on complications and comorbidities affecting reconstruction.

### Materials and Methods

This is a retrospective cohort study conducted at a single surgery practice. All subjects were screened and staged appropriately

and underwent bilateral NSGM. Patients were monitored post-operatively for wound- and non-wound-related complications, partial areolar loss, complete nipple-areolar complex (NAC) loss, reoperations, and patient satisfaction.

### Results

A total of 184 consecutive patients were included in this study, for a total of 368 individual breasts. Patients were followed for an average of  $22.7 \pm 12.0$  months, had an average age of  $56.7 \pm 14.0$  years, and an average BMI of  $30.7 \pm 6.5$  kg/m<sup>2</sup>. Overall patient satisfaction post procedure was  $9/10 \pm 0.9$ . There were a total of 43/368 (12%) breast complications and 39 of 184 (21%) subjects had reoperations (**Table 1**). Partial areolar loss occurred in 8 of 368 (2%) breasts and complete NAC loss occurred in 4 of 368 breasts (1%). Smoking was an independently associated with post operative breast complications (OR, 2.42; 1.11, 5.28).

### Conclusion

This retrospective study shows NSGM is a safe, effective option for women with overweight or obesity undergoing breast cancer treatment. With low complications and high nipple-areola complex preservation, it offers a promising alternative to traditional mastectomies, reducing surgeries and improving outcomes.

**Table 1.** Indications for Surgery, Complications, and NAC Loss

Indications for surgery (n = 184 patients)	
Cancer	126 (68%)
High Risk: family history or genetic mutation	50 (27%)
Mastodynia	8 (4%)
Complications (n = 368 breasts)	
Delayed wound healing, dehiscence, or ischemia	26 (7%)
Infections (total)	7 (2%)
Cellulitis	3 (1%)

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<b>Abscess</b>	4 (1%)
<b>Hematoma</b>	2 (<1%)
<b>Mondor disease</b>	1 (<1%)
<b>Other (remove drainage, keloid, pain, ischemia)</b>	7 (2%)
<b>Partial + total NAC loss (n = 368 breasts)</b>	
<b>Partial nipple loss</b>	8 (2%)
<b>Complete NAC loss</b>	3 (1%)

NAC, nipple-areolar complex.

## 67 Confocal Laser Scanning Microscopy (CLSM) for Intraoperative Histopathological Margin Assessment in Breast Conservation Surgery

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### Background/Significance

On average, 20%-30% of breast conservation surgery (BCS) procedures require re-operation due to close or involved margins, with adverse psychological, aesthetic, and financial impact. This study evaluates the diagnostic performance of the Histolog scanner, a confocal-laser-scanning microscope, for intraoperative margin assessments.

### Materials and Methods

Following ethical approval (IRAS-289272), women 18 years or older undergoing BCS for invasive cancer or ductal carcinoma in-situ (DCIS) were recruited. Routine surgery was performed with conventional specimen radiography. Specimen margins and shaves were stained with fluorescent dye and surface images of

margins were captured on the Histolog scanner. Confocal images were subcategorized as "positive" (defined as tumor-at-margins), within 1 mm (> 0 mm and < 1 mm), or "negative" (> 1 mm) based on histological ground truth. Evaluation of confocal images was retrospectively assessed by a consultant breast pathologist and compared with gold standard histopathology.

### Results

Fifty-one patients were recruited. Ten specimens had invasive ductal carcinoma (IDC), 12 were pure DCIS, 26 had IDC plus DCIS, 2 had invasive lobular carcinoma (ILC) and 1 had invasive tubular carcinoma (ITC). Twenty-one margins were positive and 36 had disease within 1 mm. Confocal laser scanning microscopy (CLSM) demonstrated 80.0% (95% CI, 56.3%-94.3%) sensitivity and 94.0% (95% CI, 89.2%-97.1%) specificity for positive margins with a diagnostic odds ratio of 62.4. Sensitivity was 81.3% for IDC and 75.0% for DCIS. The positive predictive value and negative predictive values were 61.5% and 97.5%. Sensitivity and specificity for margins within 1 mm were 34.9% and 94.0%.

### Conclusion

CLSM has high sensitivity and specificity for identifying disease at resection margins. Clinical translation of CLSM requires robust image feature nomenclature studies and randomized controlled trials to demonstrate effectiveness in reducing reoperative intervention.

## 68 Upper Extremity Disability Assessment Following Breast Cancer Surgery Using QuickDASH in an Ethnic Minority Population

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### Background/Significance

Breast cancer surgery increases risk of upper extremity disability. The Quick Disabilities of the Arm, Shoulder, and Hand (QuickDASH; QD) tool is validated to assess upper extremity functionality in patients undergoing surgery for breast cancer. Despite evidence of poorer outcomes among Black breast cancer survivors, studies lack ethnic minorities and analysis of contributing factors. This study explores postoperative upper extremity disability in ethnic minority breast cancer patients at a single Bronx institution.

## Materials and Methods

A retrospective review was conducted on surgical breast cancer patients (January 2022-July 2024) with pre- and postoperative QD assessments. Kruskal Wallis, Mann-Whitney, and Spearman's Rank Correlation analyses were performed.

## Results

Among 100 patients, the mean postoperative QD score was 8.9 ( $\pm 17.3$ ), with a mean increase of 2.3 ( $\pm 15.0$ ) over 161 ( $\pm 107$ ) days. Preexisting shoulder pathology significantly increased postoperative QD scores ( $P = .045$ ). While lymphedema ( $n = 11$ ) was not significant ( $P = .25$ ), adjuvant chemotherapy ( $P = .075$ )

and higher body mass index (BMI;  $P = .082$ ) showed potential associations. Neoadjuvant chemotherapy improved scores between pre- and postoperative ( $P = .039$ ). Surgery type, axillary surgery, radiation, and previous surgeries were not significant.

## Conclusion

Preexisting shoulder pathology increased postoperative QD scores, which may suggest a role for preoperative rehabilitation. Neoadjuvant chemotherapy improved outcomes. Adjuvant chemotherapy and higher BMI showed trends toward significance. Larger studies with greater power are needed to confirm these findings and tailor treatments to mitigate upper extremity disability.

## 70 Malignancy Upgrade Rates of Discordant Breast Lesions

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### Background/Significance

When a breast lesion with imaging characteristics suspicious for malignancy is benign on needle core biopsy (NCB), it is radiographically/pathologically discordant. Surgical excision of discordant breast lesions (DBLs) is recommended to rule out malignancy. Our objective was to evaluate the malignancy upgrade rate of DBLs and predictors of upgrade, and to identify a subset of patients who might be offered active surveillance.

### Materials and Methods

Patients diagnosed with DBLs who underwent excision between 2016 and 2023 were identified in an institutional breast surgery database. The upgrade rates to malignancy (ductal carcinoma in situ [DCIS], invasive ductal carcinoma [IDC], invasive lobular carcinoma [ILC]) and benign high-risk lesions (HRLs; atypical ductal hyperplasia [ADH], atypical lobular hyperplasia [ALH], and/or lobular carcinoma in situ [LCIS]) were assessed. T-tests and  $\chi^2$  tests were performed. A multivariable logistic regression model was used to identify predictors of malignancy upgrade.

### Results

There were 119 patients with DBLs. Median age was 50 years (IQR, 44-60). All DBLs were breast imaging reporting and data system score 4. Ipsilateral concurrent breast cancer (CBC) was present in 13%. Most (77%) DBLs were screen detected, and 24% presented with symptoms (mass or nipple discharge). On imaging, 22% had calcifications on mammography, 67% had a mass (median, 11.5 mm; IQR, 8-19), and 4% had lesions visible on MRI only. Excision revealed purely benign (no HRL) lesions in 76.5%, HRLs in 11.7%, 6.7% in DCIS, and 5.0% in IDC/ILC. The rate of upgrade to malignancy was higher among patients with an HRL on NCB vs a benign (non-HRL) NCB (42.9% [ $n = 3/7$ ] vs 9.8% [ $n = 11/112$ ];  $P = .009$ ). The rate of malignancy was higher among patients with CBC (37.5% [ $n = 6/16$ ] vs 7.8% [ $8/103$ ],  $P = .001$ ). In patients with no CBC and a purely benign (no HRL) NCB ( $n = 86$ ), upgrade to DCIS was 2.3% ( $n = 2$ ) and to IDC/ILC in 2.3% ( $n = 2$ ). Factors significantly associated with malignancy upgrade included older age  $\geq 50$  (OR, 5.8; 95% CI 1.0-30.0,  $P = .03$ ), ipsilateral CBC (OR, 41; 95% CI, 6-299;  $P = .01$ ), and HRL on NCB (OR, 17; 95% CI, 2-162;  $P = .01$ ).

### Conclusion

Overall, the majority of DBLs are found to be benign (88.3%). In women without CBC and a purely benign (non-HRL) on NCB, malignancy upgrade rates are low: 2.3% DCIS, 2.3% IDC/ILC. This is similar to malignancy upgrade rates of ALH/LCIS on NCB of 3% to 6%, for which active surveillance is offered. Active surveillance could perhaps be considered as an option to select low-risk patients.

## 71 Beyond the Surface: Suspicious Nipple Lesions

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### Background/Significance

Nipple lesions, often subtle and easily overlooked, can represent

early signs of malignancy, which should prompt pathologic evaluation. These reports highlight the importance of heightened visual interpretation for timely diagnosis and treatment.

## Materials and Methods

Cases from a breast surgery tertiary referral hospital illustrate suspicious nipple lesions in 1 male and 4 female individuals.

## Results

**Case 1:** A 46-year-old woman presented with 6 months of painful, spontaneous milky discharge in the left breast with an associated 5-mm yellow nipple scab. Breast mammogram and ultrasound were benign. Shave biopsy revealed breast primary adenocarcinoma. MRI showed diffuse enhancement with nipple-areola complex (NAC) retraction. Lumpectomy confirmed invasive ductal carcinoma (IDC).

**Case 2:** A 61-year-old woman with persistent right nipple itching, scaling, shape deviation, hyperpigmentation, and a palpable retroareolar mass. Breast imaging showed retroareolar intraductal mass. Final surgical pathology revealed ductal carcinoma in situ (DCIS) and Paget disease.

**Case 3:** A 70-year-old man with an enlarging verrucous, pruritic left nipple lesion with an associated palpable retroareolar mass. Breast mammogram revealed a 2.6-cm mass, which extended to the nipple, with enlarged ipsilateral axillary lymph nodes. Biopsy confirmed IDC.

**Case 4:** A 63-year-old woman with right nipple inversion, hyperpigmentation, crusting, and a palpable mass. History of papillary carcinoma resected with clear margins 10 years ago. Ultrasound showed central right breast mass. Ultrasound-guided biopsy revealed atypical ductal hyperplasia. Nipple punch biopsy revealed papillary carcinoma. Mastectomy with sentinel node evaluation confirmed IDC with negative nodes.

**Case 5:** A 36-year-old woman with a 3-year history of bilateral areolar skin thickening and hyperpigmentation. No scaling, discharge, or pruritus. Bleeding occurred when a lesion was scratched. Breast imaging was benign. Punch biopsy revealed hyperkeratosis of the NAC and possible correlation with T-cell lymphoma.

## Conclusion

Meticulous examination of nipple abnormalities is critical in early detection. Clinicians must maintain a high index of suspicion and consider tissue diagnosis for concerning nipple changes.

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## 73 Short- and Long-Term Outcomes in Use of Titanium-Coated Polypropylene Meshes in Immediate Breast Reconstruction: A Cost-Effective and Safe Option?

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## Background/Significance

Implant-based reconstruction (IBR) is a common method of reconstruction following mastectomy for invasive cancer or ductal carcinoma in situ (DCIS). Biological and synthetic meshes allow implant stabilization and improve cosmetic outcome. Biological meshes, such as acellular dermal matrices (ADM), are widely used but come with significantly higher costs (up to 6-fold vs synthetic

meshes), without clear evidence proving their superiority. TiLoop, a titanized synthetic mesh, may offer a more cost-effective option with promising outcomes. This study aimed to audit both short- and long-term outcomes of immediate IBR using TiLoop mesh in a UK unit and compare these results with UK national standards.

## Materials and Methods

A retrospective review of case notes was conducted of patients who underwent immediate IBR with TiLoop mesh between 2014 and 2017. Clinicopathological data, including age, body mass index (BMI), smoking status, and adjuvant treatments, were collected. Postoperative complications were documented and compared with UK national standards for immediate IBR, including those from the iBRA study and the Brighter study. Primary end points were early postoperative complications (within 90 days), with secondary end points focusing on long-term complications and implant loss.

## Results

Thirty-seven patients were identified, with a median follow-up of 95 months (range, 80-117). The median age was 47.5 years (range, 27-68) and the median BMI was 24 (range, 19-36). Eight patients (20%) were smokers and 12 (27%) received adjuvant radiotherapy. Mastectomy and IBR were performed for cancer



or DCIS in 30 patients (82%) and for risk reduction in 7 patients (18%). In the first 90 days, 1 patient (2%) developed an infection, 2 patients (4%) required a return to theatre, and 1 patient (1%) lost their implant. Long-term follow-up revealed that 9 patients (20%) required revisional surgery, mainly due to capsular contracture, and 3 patients (7%) permanently lost their implants. Five patients (11%) converted to autologous reconstruction.

## Conclusion

Our cohort demonstrated early complication and revision rates comparable to UK national standards for immediate implant-based reconstruction. Initial data from this audit suggest that TiLoop, a synthetic mesh, offers a cost-effective and safe alternative to biological meshes for prepectoral IBR. Ongoing data collection in this cohort will add to data confirming its long-term efficacy and cost-effectiveness.

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## 74 Lessons Learned From a Breast Surgery ERAS Program in an Oncologic Ambulatory Center

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### Background/Significance

Enhanced Recovery After Surgery (ERAS) protocols have revolutionized surgical care, aiming to optimize patient outcomes and reduce recovery time. In the realm of breast surgery, ERAS implementation in an ambulatory setting presents unique challenges and opportunities. Key components of the ERAS protocol included multimodal pain management, early mobilization, postoperative nausea and vomiting (PONV) prophylaxis, and optimized fluid management. Several elements were updated over the years. This study aims to share our experiences and lessons learned from implementing an ERAS program for breast surgery in a high-volume ambulatory center.

### Design and Methods

We retrospectively reviewed 8721 patients who underwent breast surgery between January 2016 and December 2023. The cases

were performed with an ERAS protocol. We collected data on surgical volume, intraoperative and postoperative opioids measured in morphine milligram equivalents (MME), length of stay, PONV, and postoperative complications, which included transfers to main hospital and 30-day urgent care center visits.

### Status

The volume increased 47% between 2016 and 2023. The implementation of the ERAS protocol resulted in significant reductions in intraoperative and postoperative opioid requirement (29% and 19%), PONV (41%), transfer (49%), 30-day urgent care center visits (43%), and 30-day readmissions (37%). There were no significant changes to length of stay.

The ERAS protocol implementation and improvement was associated with reduction in adverse outcomes despite substantial increase in the volume of cases. ERAS implementation in an ambulatory setting for breast surgery is feasible and can lead to substantial benefits for patients. However, challenges such as education, adherence to preoperative fasting guidelines, and managing unexpected complications remain. By addressing the unique challenges and tailoring the protocol to the ambulatory setting, optimal outcomes can be achieved. Future research should focus on further refining ERAS protocols and exploring innovative strategies to enhance patient outcomes.

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## 76 Electromagnetic Chip Bracketed vs Wire Bracketed Localization in Breast Conserving Surgery

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### Background/Significance

Surgical navigation and localization advancements seek to improve surgical time, total tissue excised, and the need for

re-excision in breast surgery. Bracketed localization is frequently used for procedures localizing wide or multifocal breast tumors. Electromagnetic chip (EMC) localization via Smart Clip (Elucent Medical, Madison WI) is a novel approach to clip localization. This prospective evaluation compares EMC bracketed localization to conventional wire localization in bracketed breast conserving surgery (BCS).

### Materials and Methods

A prospective, institutional review board–approved single-institution cohort of female patients with breast cancer undergoing EMC bracketed localization was compared with a contemporary cohort of patients with breast cancer undergoing

wire bracketed BCS. Key variables included number of localizers placed, complete retrieval of localizers, additional margins taken intraoperatively, positive malignant margins, reoperation for positive margins, time of incision to radiograph, and specimen length (mm) and volume (cm<sup>3</sup>). Statistics were performed using Kruskal-Wallis test for numerical covariates and  $\chi^2$  test or Fisher exact test, where applicable, for categorical covariates.

## Results

Seventy-four subjects were included, 31 with EMC localization vs 43 wire localization; of these, 10 EMC and 4 wire localized cases were oncoplastic reductions. All cases were performed by 8 fellowship-trained breast surgeons. The mean age was 66 years (range, 36-86). Mean tumor size was 41.2 mm for EMC vs 39.5 mm for wire cases (range, 12-90). Time from incision to specimen radiograph was shorter in EMC compared with wire cases, but not statistically

significant. Cases with EMC had a fewer number of positive/close (<2 mm) ductal carcinoma in situ margins (29%), compared with 50% of the wire localized cases ( $P < .072$ ). Specimen length and volume were also significantly lower with EMC vs wire localization ( $P = .029$  and  $P = .019$ , respectively). Also, 93.5% of patients who underwent EMC localization had complete retrieval of localization device in the initial specimen ( $P = .172$ ). Reoperation/reexcision of tumor margins was required for only 29% of the EMC localized patients ( $P = .185$ ). Use of the EMC localizer was also associated with a lower complication rate (6.5% vs. 9.3%;  $P = 1.00$ ).

## Conclusion

In this prospective, single-institution study, EMC localization was associated with fewer positive margins and smaller resection specimens in EMC bracketed BCS compared with wire bracketed procedures.

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## 77 A Radio Opaque Suture May Improve Radiation Target Delineation in Post Lumpectomy Patients With Breast Cancer: A Retrospective Analysis

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### Background/Significance

The identification of the tumor bed following lumpectomy is vital for successful radiation treatment, both for a breast radiation boost and more fundamentally in the partial breast setting. However, identification of the tumor cavity on a planning CT scan can be complicated as postsurgical seromas will inversely decrease with time and preoperative imaging may not anatomically correlate. In addition, the radiation target should correlate with the tumor pathology size. VeraForm is a radio-opaque continuous multiplane marker that is sutured into the operative bed during the lumpectomy. The aim of this study is to compare VeraForm markers (VF), surgical clip (SC) placement, and no clips (NC) on target delineation in relation to the tumor bed.

### Materials and Methods

Beginning in July 2023, a single breast surgeon placed VF in lumpectomy. We retrospectively reviewed 48 women, 19 women with VF and compared with 13 women with SC and 24 women with NC. The tumor volume was calculated by taking the surgical specimen 3-dimensional measurements and multiplying it by  $\pi/6$ . We created a ratio between the specimen and the CTV (radiation target volume of the tumor bed, which was created by a board certified radiation oncologist). We then used a 2 sample Welch t-test to compare 3 populations.

### Results

The population was mainly T0 (28%) and T1 (58%). The treatment was whole breast with a cavity boost in 57% and partial breast in 43%. The medium weight of the patients between VF, SC, and NC was similar (169 lbs, 174 lbs, 169 lbs, respectively), and the time from surgery to radiation mapping was similar (33 days, 40 days, 42 days, respectively). The tumor volume for VF, SC, and NC was 40 mL, 47 mL, and 54 mL, respectively ( $P =$  not specified). However, the VF ratio to tumor volume had less variance than NC ( $P = .0436$ ) but showed no improvement over the SC ( $P = .289$ ). SC did not show an improvement over NC ( $P = .239$ ).

### Conclusion

In this single-institution retrospective study, VF led to a target volume that was more consistent with the tumor specimen size than no markers. However, it did not yield an improvement over SC placement.

## 79 Case Series of Pathologic Upgrade After Reconstructive Breast Surgery

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### Background/Significance

Finding significant pathologic lesions after reduction mammoplasty is a rare occurrence, with a rate of around 3.5%. The incidence of these findings has been found to be higher in patients aged older than 40 years. These findings are also rare in gender affirming surgeries, most of which have been reported in case reports. One study found an incidence of 0.7% for incidentally found high-risk or malignant lesions, with higher rates in patients over 25 years old. Another noted that 67% of breast cancer found in transmen were identified after gender affirming mastectomies, with over half found incidentally. Most studies have focused on incidence rate and management after surgery. For this study, we planned to additionally review preoperative imaging, focusing on patients younger than 40 years who would not have started routine mammograms.

### Materials and Methods

A retrospective chart review was performed on female patients between the ages of 18 and 40 years old who underwent non-oncologic breast surgery between 2019 and 2024 and were found to have abnormal findings on pathology. Data collected included demographics, imaging, breast density, surgeries performed, tumor characteristics, stage at diagnosis, genetic testing, and follow-up recommendations.

### Results

A total of 14 patients were identified. All were female patients with ages ranging from 18 to 37 years. Four patients had

bilateral mastectomies for gender dysphoria, while the remaining patients had bilateral breast reductions. One patient had previous ultrasounds performed for an abscess. Four patients had a family history of breast or ovarian cancer. Two patients were found to have invasive ductal carcinoma (IDC), 2 had ductal carcinoma in situ (DCIS), 7 had atypical ductal hyperplasia (ADH), and 3 had atypical lobular hyperplasia (ALH). Of the patients who had bilateral mastectomies, 1 patient had DCIS. MRI and breast surgery follow-up was recommended, but there was no evidence of follow-up in the medical record. Ten patients were recommended to have additional imaging, of which, 6 patients had imaging performed. Six patients subsequently had genetic testing performed. Two patients underwent additional surgery for their diagnosis (1 with IDC and 1 with DCIS). The 3 patients who underwent bilateral mastectomies and were found to have ADH only had follow-up with plastic surgery. One patient with ALH found after bilateral reductions was recommended to follow up with their primary care physician. The remaining patients were referred to breast surgery.

### Conclusion

Our results over a 5-year period showed a small number of patients younger than 40 years old who had incidental high-risk or cancerous lesions found on pathology following breast reduction or gender affirmation surgery. Of these 14 patients, only 1 had any imaging performed prior to surgery but for unrelated reasons. All except 1 patient were appropriately referred to breast surgery postoperatively, though it could be argued that the 3 patients with ADH after gender affirming mastectomies should be followed for their high-risk lesions, as more breast tissue is typically left behind after mastectomies for gender affirmation compared with those performed for cancer. Our study does not provide sufficient evidence to recommend routine screening prior to breast plastic surgery for diagnoses unrelated to cancer. Though it is something plastic surgeons should keep in mind, especially for high-risk patients.

## 90 Contralateral Risk Reduction Mastectomy in Patients With Unilateral Breast Cancer: A Multinational and Multidisciplinary Survey—Physicians' Perspective

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### Background/Significance

Contralateral risk reduction mastectomy (RRM) is considered for patients with unilateral breast cancer to reduce the risk of cancer



developing in the opposite breast. This study aimed to evaluate various specialists' current practices, perspectives, and attitudes regarding RRM.

## Materials and Methods

A multinational and multidisciplinary survey was conducted among Senologic International Society members, focusing on their specialties, geographical distribution, experience, institutional affiliations, and specific practices related to RRM.

## Results

A total of 298 participants completed the survey. The majority of respondents were surgeons (79.2%, n = 236), followed by radiologists (7%, n = 21), radiation oncologists (7%, n = 21), and medical oncologists (6.4%, n = 19). Most participants practiced in Europe (46%, n = 137) and Asia (37.2%, n = 111), with contributions from other regions including Africa and North and South America. The majority of respondents had over 20 years of experience (44.3%, n = 132) and worked in academic hospitals (57.4%, n = 171). The most common indications among these were *BRCA1/2* positivity (92.92%, n = 276), strong family history (41.07%, n = 112), and previous high-risk lesions (24.57%, n = 73). Less common factors included cosmetic concerns (18.85%, n = 56), patient anxiety (14.14%, n = 42), and young age (11.44%, n = 34). MRI was the most frequently preferred tool (82.15%, n = 244) for evaluating the contralateral breast before RRM, followed by mammography (80.47%, n = 239) and ultrasound (68.35%, n = 203). Genetic testing was used by 64.30% (n = 191) of respondents, while PET scans were less commonly used (6.39%, n = 19). The majority of the respondents believed RRM is highly or mostly effective in preventing breast cancer (79.2%, n = 206). About half of the respondents (49.82%, n = 146) decision to RRM on a case-by-case basis, while 32.42% (n = 95) of them indicated that the stage of the disease was not a pivotal factor in RRM decisions. The primary challenges for the decision of RRM were patient expectations (24.58%, n = 73), psychological/sexual issues (20.88%, n = 62), and insurance coverage and costs (17.17%, n = 51), but also surgery/reconstruction complications were one of the major components of their decision making (46.19%, n = 137). Less than half of the respondents (42.3%, n = 126) indicated their practice mostly aligns with established guidelines. The survey identified the need for further research in areas such as long-term outcomes and quality of life (51.01%, n = 151), survival benefit (33.44%, n = 99), and patient selection criteria (31.08%, n = 92).

## Conclusion

The survey highlights diverse practices and perspectives on RRM across different specialties and countries. The findings emphasize the need for standardized guidelines and further research to improve patient outcomes such as survival and quality of life, and address challenges associated with managing RRM.

## CancerNetwork covered the latest in multidisciplinary care presented during the Miami Breast Cancer Conference.

### Article highlights include as follows:

- Preoperative Breast MRI Does Not Improve Surgical Plan/Local Control
- Sexual Health Considerations to Improve Survivorship in Breast Cancer
- The Rapid Evolution of Cardiotoxicity in Breast Cancer and Why More Data is Needed
- Active Monitoring May Be Safe Vs Surgery in Certain Low-Risk DCIS Populations



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