**Breast Abstracts**

Comparing Incision Choices in Immediate Microvascular Breast Reconstruction after Nipple-sparing Mastectomy: Unique Considerations to Optimize Outcomes

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**BACKGROUND:** Incision planning is a critical factor in nipple-sparing mastectomy (NSM) outcomes. Evidence on optimal incision patterns in patients undergoing NSM and immediate microvascular breast reconstruction is lacking in the literature.

**METHODS:** A single-institution retrospective review of consecutive patients undergoing NSM and immediate microvascular autologous reconstruction from 2007 to 2019 was performed. Outcomes, including major mastectomy flap necrosis, full nipple-areolar complex necrosis, and any major ischemic complication (MIC) of the skin envelope, were compared among incision types. Multivariable logistic regression identified factors associated with MIC.

**RESULTS:** In total, 279 reconstructions (163 patients) were identified, primarily using internal mammary recipient vessels (98.9%). Vertical incisions were utilized in 139 cases, infra-mammary in 53, lateral radial in 51, and inverted-T in 35. Thirty-two cases (11.5%) had major mastectomy flap necrosis, 11 (3.9%) full NAC necrosis, and 38 (13.6%) any MIC. Inframammary incisions had higher rates of MIC (25%) than vertical (5.8%, \( P < 0.001 \)) and lateral radial (7.8%, \( P = 0.032 \)) incisions. Inverted-T incisions also had higher rates of MIC (36.1%) than both vertical (\( P < 0.001 \)) and lateral radial (\( P = 0.002 \)) incisions. Inframammary incisions (OR 4.382, \( P = 0.002 \)), inverted-T incisions (OR 3.952, \( P = 0.011 \)) and mastectomy weight (OR 1.003, \( P < 0.001 \)) were independently associated with an increased risk of MIC. Inframammary incisions with MIC demonstrated a significantly higher BMI, mastectomy weight, and flap weight compared with those without.

**CONCLUSIONS:** This study is the first to compare incisions patterns in a large series of immediate autologous reconstructions after NSM. Inframammary and inverted-T incisions were found to be associated with a higher risk of major ischemic skin envelope complications after NSM and immediate microvascular breast reconstruction. While inverted-T incisions are known to disrupt perfusion to the skin envelope, IMF incisions have historically demonstrated low rates of ischemic complications. When using the IM vessels as recipients, and particularly in patients with larger breasts, IMF incisions may further compromise perfusion due to retraction for recipient vessel access. Radial incisions can be considered to optimize recipient vessel exposure without compromising perfusion.

Revision Incidence after Immediate Direct-to-Implant versus Two-stage Implant-based Breast Reconstruction in the Netherlands: Results from the Dutch Breast Implant Registry

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**BACKGROUND:** In immediate implant-based breast reconstruction (IBBR), there is no golden standard for the best strategy: a direct-to-implant or two-stage approach using a temporary tissue expander is followed during the first stage. There is an ongoing debate on the differences in complications and cosmetic outcomes between direct-to-implant and two-stage breast reconstruction, as direct comparisons in randomized controlled trials have not been performed. Therefore, the aim of this study was to compare revision incidence, revision indications, and the additional number of operations per breast between direct-to-implant and two-stage IBBR in a large nationwide, population-based cohort using the Dutch Breast Implant registry (DBIR).

**METHODS:** In this prospective, observational cohort study, all patients with immediate IBBR following mastectomy between 2015 and 2019 were selected from the nationwide DBIR. Short-term (within 60 days) and long-term (after 60 days) unplanned revision incidence was studied.
per immediate IBBR, including revision indications, and total number of additional operations. Confounding by indication was limited using propensity score matching.

EXPERIENCE: In 76 healthcare institutions with a mean volume per institution of 110 (range, 13–546) breast implant surgeries per year, 4938 breast implants were inserted in 4321 women, of which 2350 (48%) were done during a direct-to-implant IBBR and 2588 (52%) during a two-stage IBBR. Median follow-up was 30 months (IQR, 15–45) and 32 months (IQR 20–47), respectively.

RESULTS: Of the 2350 breast implants inserted during direct-to-implant IBBR, 4.2% underwent unplanned revision surgery within 60 days after completion of the reconstruction trajectory. Of the 2588 breasts that underwent two-stage IBBR, 11.7% had an unplanned revision within 60 days after completion of the entire reconstruction trajectory. However, the majority of these unplanned revisions occurred during the first stage of the two-stage reconstruction (n = 279). Revision surgery was more frequently observed after two-stage IBBR, in patients with higher age, ASA classification, and BMI, in patients who smoked, in middle-volume healthcare institutions (50–200 implant surgeries per year), and after non-nipple-sparing surgery. Compared with a two-stage procedure, implants inserted during a direct-to-implant procedure had a lower likelihood of short-term revision surgery [conditional OR, 0.32 (95%CI, 0.25–0.43)]. After direct-to-implant IBBR, the crude cumulative unplanned revision incidence within two years was 10.8% [95%CI, 9.4–12.1%]. Within the two-stage group, this was 16.3% [95%CI, 14.8–17.7%]. In the propensity score matched cohort, limiting confounding by indication, similar results for short-term and long-term revision incidence were found. Most frequently registered indications for short-term revision were mastectomy skin flap necrosis, deep wound infections, hematoma, and device rupture/deflation. Most frequent long-term indications for revision were asymmetry, capsular contracture, dissatisfaction with volume, and breast pain. Within the direct-to-implant group, 2099 breasts (89.3%) were reconstructed within one operation. In the two-stage group, 2155 breasts (83.3%) were reconstructed within two operations.

CONCLUSIONS: Unplanned revision surgery occurred less often after direct-to-implant IBBR, and more breasts were reconstructed within the planned number of operations compared with two-stage IBBR. These results, based on real-world data, are important for improving patient counseling and shared decision-making, and may help starting the discussion whether a direct-to-implant approach should not be considered more often.

Breast Implant Associated Anaplastic Large Cell Lymphoma: An Updated Systematic Review and Analysis of Treatment Strategies

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BACKGROUND: Although guidelines have been published on breast implant associated anaplastic large cell lymphoma (BIA-ALCL) treatment, there has been no comprehensive analysis of BIA-ALCL treatment variation to date based on the available literature. National and international efforts to create BIA-ALCL registries have resulted in more robust database studies, but many cases are missed by these registries and are instead published as case reports. In this study, the authors sought to systematically review the case literature on BIA-ALCL and compare treatment strategies of BIA-ALCL with National Cancer Center Network guidelines.

METHODS: Database searches were conducted in June 2020. Included articles were case reports and case series with patient-level data. Collected variables included clinicopathological features, implant characteristics, diagnostic tests, ALCL characteristics, treatment, and details of follow-up and outcome. Temporal trends in treatment were compared with National Cancer Center Network guidelines based on available tumor staging data. Fischer exact test was used to compare categorical variables, as appropriate.

RESULTS: An estimated 89 publications were included, and a total of 178 cases of BIA-ALCL were identified. Most patients presented with seroma (N = 114, 70.4%), followed by a mass (N = 14, 8.6%), or both (N = 23, 14.2%). Treatment details were available in 126 cases. Treatment included implant removal and en-bloc capsulectomy of the affected implant in 122 cases (96.8%). Chemotherapy was given in 71 cases (56.3%), and radiation therapy was given in 38 cases (30.2%). Staging data were available in 67 cases, which was stratified by local disease (TNM IA-IC; N = 49, 73.1%) or advanced disease (TNM II-IV; N = 18, 26.9%). For local