There was no difference between patients with smooth and textured devices in time to local or distant recurrence ($P = 0.32$ and $P = 0.09$, respectively). Multivariate analysis associated ADM use with lower odds of distant recurrence (OR 0.46, $P = 0.003$). Kaplan-Meier analysis showed no difference in time to distant recurrence between all patients with and without ADM ($P = 0.39$). Sub-group analysis of Stage III cancers, however, showed a longer time to distant recurrence in patients reconstructed with ADM ($P = 0.01$).

**CONCLUSIONS:** Growing concerns around the cancer-causing potential of textured devices exist. In this cohort study, there was no difference in cancer causing potential between smooth and textured devices.

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**Resource Utilization and Outcomes among Patients Undergoing Immediate Autologous Postmastectomy Breast Reconstruction versus Immediate-delayed Breast Reconstruction**

**Presenter:** Pragna Shetty, MD, MPH

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**BACKGROUND:** Patient-reported satisfaction with immediate breast reconstruction (IBR) has been found to be similar to delayed autologous reconstruction. However, there is a variation in practice of delayed autologous reconstruction with surgeons who perform a first stage procedure with tissue expanders and acellular dermal matrix (ie, immediate-delayed reconstruction). This requires patients to undergo multiple procedures, potentially increasing resource use for breast reconstruction. In this study, we sought to examine the differences in resource use, complications, and outcomes between immediate and immediate-delayed breast reconstruction.

**METHODS:** We used the 2013–2017 IBM MarketScan Commercial Claims and Encounters database to identify female patients who underwent IBR or immediate-delayed breast reconstruction. Over a 2-year follow-up period, we calculated total costs of health care services associated with breast reconstruction. We also tallied secondary procedures, including fat grafting, mastopexy, breast augmentation, and breast reduction. We defined complications such as wound infection, donor site hernia, hematoma, and seroma, and also identified patients who experienced flap failure. Fisher exact test and quantile regression were used to determine differences between the immediate and immediate-delayed autologous reconstruction group. Linear and logistic regression models analyzed how timing of autologous breast reconstruction affected secondary procedures, complications, flap failures, and utilization costs.

**RESULTS:** There were 10,023 patients included in the study. Median age was 51 (IQR: 45–57) years. In total, 4596 (45.9%) of patients received an immediate autologous reconstruction and 5427 (54.1%) received immediate-delayed autologous reconstruction. The median cost for immediate and immediate-delayed autologous reconstructions were $42,432 and $50,929, respectively ($P < 0.001$). Patients undergoing immediate-delayed reconstruction were 41% less likely to undergo secondary procedures (OR: 0.59; 95% CI: 0.49, 0.72; $P < 0.001$). There was no difference in likelihood of complications between immediate and delayed autologous reconstruction (5.4% versus 5.6%; OR: 0.88; 95% CI: 0.75, 1.1; $P = 0.13$). Patients undergoing immediate-delayed reconstruction were 50% more likely to experience reconstruction failure than patients undergoing immediate reconstruction when controlling for patient comorbidity (OR: 1.5; 95% CI: 1.1, 2.0; $P = 0.01$).

**CONCLUSIONS:** More than half of patients undergoing autologous breast reconstruction after mastectomy receive a two-stage reconstruction. Although there was no difference in likelihood of having a complication between patients undergoing immediate versus immediate-delayed breast reconstruction, patients undergoing immediate-delayed reconstruction were more likely to experience flap failure and increased healthcare utilization costs. These results support performing immediate autologous breast reconstruction in the context of increased costs, similar risk of
complications, and increased risk of flap failure in immediate-delayed reconstruction patients.

**Risk Factors for Anteroposterior Implant Malposition in Postmastectomy Patients with Cohesive Round Implants**

**Presenter:** María Yan, MD

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**BACKGROUND:** Round cohesive implants are increasingly popular due to their ability to maintain shape, higher fill volume, and projection. However, they have also been associated with a higher risk of implant flipping. The current literature on risk factors of anteroposterior implant malposition in patients with two-stage implant-based reconstruction (IBR) is scarce. We identified predisposing factors of implant anteroposterior malposition in postmastectomy patients with prepectoral round, cohesive, smooth implants.

**METHODS:** A retrospective review of patients who underwent postmastectomy two-stage IBR with prepectoral Natrelle Inspira Cohesivity Level 3 implants, from 2013 to 2020 at our institution, was conducted. Inclusion criterion was patients 18 years or older who had a prepectoral tissue expander and prepectoral breast implant. Patients who had prior breast reconstruction or aesthetic surgeries were excluded.

**RESULTS:** A total of 214 implants (84.9% bilateral) in 106 patients were included. The mean age at surgery was 51.1 ± 11.4 years, and the mean body mass index was 27.0 ± 4.8 kg/m². In total, 22.35% had a history of radiation to the chest wall, and 46.3% had chemotherapy. Of all breasts, 79.4% had prior MX tissue expanders, the median implant volume was 485 cm³ (Q1-3: 385–580), and acellular dermal matrix was placed in 65.4% of breasts. Anteroposterior malposition was reported in 19 (8.9%) breasts, 50% of which underwent surgery to correct the flipping. The mean time to implant flipping was 6.1 months (Q1-3: 3.5–16.8), and the mean follow-up time was 12.2 months (5.0–17.5). On univariate analysis, SCX implants [OR= 3.4 (1.3–8.7), P = 0.01], implant volume > 400 cm³ [OR 8.9 (1.2–68.2), P = 0.011], older age at surgery (OR = 1.1 P = 0.022), and BMI (OR=1.1, P = 0.005) were correlated with a higher risk of anteroposterior malposition.

**CONCLUSIONS:** Use of SCX implants, implants with a volume > 400 cm³, older age at surgery, and high BMI increase the risk of anteroposterior malposition in Natrelle Inspira Cohesivity Level 3 implants. These results can be useful for patient counseling, better surgical planning, and improving clinical practice.

**A Standardized Perioperative Protocol Reduces Breast Reconstruction Implant Infections**

**Presenter:** Owen Brown, MD

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**BACKGROUND:** Implant-based breast reconstruction (IBBR) is a complex, multi-step process with significant variability amongst providers. Infections following IBBR are associated with higher rates of hospital readmission, reoperation, reconstructive failure, and increased cost of care. To reduce process variability and postoperative infections, we implemented a standardized protocol for implant-based breast reconstruction.

**METHODS:** As part of a department-sponsored quality improvement project, we designed an evidence-based, standardized protocol for IBBR inclusive of the preoperative, intraoperative, and postoperative phases of care. All patients undergoing IBBR with tissue expanders or implants by multiple surgeons at a single institution between December 2019 and February 2021 were included. Intraoperative protocol compliance (% completion of the 12 individual protocol steps) and infection events were recorded. Infection events were considered minor (managed with outpatient antibiotics) or major (managed with admission or reoperation). A historic control group of patients undergoing IBBR prior to protocol initiation was retrospectively analyzed for comparison.

**RESULTS:** There were 69 patients (119 total breasts) in the protocol cohort compared with 159 (269 total breasts) in our retrospective control group. There was no statistically