Distances from the cornea to the lateral orbital rim, anteroposterior depth of the lateral orbit, and overhang of the lesser sphenoid wing over the middle cranial fossa were not significant between groups.

**CONCLUSION:** Sphenoid shape and the zone of the fronto-orbital-sphenoid junction differs between types of craniosynostosis. Bicoronal craniosynostosis has the most unfavorable anatomy in this area, with minimal distance between the orbit and the anterior portion of the temporal lobe, a vertically deep middle cranial fossa, and thin bone at the fronto-orbital sphenoid junction, all of which make retraction and protection of the temporal lobe more challenging. Careful understanding of the patient’s specific anatomy is necessary to perform this osteotomy safely.

**TRACK: BREAST**

**Complication and Failure Rates of Human, Porcine, and Bovine Acellular Dermal Matrix in Prepectoral Breast Reconstruction: A Scoping Review**

**Presenter:** Giovanna Rodosli Pires

**Co-Authors:** Rayaad Hosein, MD, Jayant Agarwal, MD, Whitney Moss, MD, Alvin C. Kwok, MD, MPH, Tallie Casucci, Mary McFarland, David Magno-Padron, MD

**PURPOSE:** To determine the rates of overall complications and failure of prepectoral breast reconstruction between various types of human (hADM), bovine (bADM), and porcine (pADM) acellular dermal matrices (ADM).

**METHODS:** Studies examining complications following the use of ADM for prepectoral breast reconstruction were identified using MEDLINE, Embase, the Cochrane Library, LILACS, and the Web of Science from January 2010 to August 2021. Titles and abstracts of 1838 studies were screened, followed by full-text screening of 355 articles. 33 studies were found to meet inclusion criteria.

**RESULTS:** From the thirty-three studies, 6046 prepectoral reconstructions were examined. Implant loss was comparable across the different types of ADM (pADM 4.6%; hADM 4.6%; bADM 4.5%). bADM had the highest rate of capsular contracture (6.1%), infection (9.0%), skin flap necrosis (8.3%), dehiscence (5.4%), and hematoma (6.1%) when compared to both hADM and pADM. hADM had the highest rate of postoperative seroma (5.3%), followed by pADM (4.6%) and bADM (4.5%).

**CONCLUSION:** Among the prepectoral breast reconstruction studies utilizing hADM, pADM, or bADM included in our analysis, complication profiles were similar. bADM had the highest proportion of breast complications in the following categories: capsular contracture, infection rate, skin flap necrosis, dehiscence, and hematoma. Implant loss was comparable across the cohorts. Overall, prepectoral breast reconstruction utilizing ADM leads to relatively low complication rates with the highest rates within the bADM cohort.

**TRACK: BREAST**

**Trend Reversal in U.S. Lumpectomy Rates: An Analysis from 2005-2017 Using Three Nationwide Datasets**

**Presenter:** Robyn Rubenstein, MD

**Co-Authors:** Jonas Nelson, MD, Kathryn Haglich, Jacqueline Chu, Shen Yin, Carrie S. Stern, MD, Babak J. Mehrara, MD, Evan Matros, MD

**Affiliation:** Memorial Sloan Kettering Cancer Center, New York, NY

**BACKGROUND:** Despite equivalent oncologic outcomes and survivorship, U.S. lumpectomy rates previously declined in favor of more aggressive surgical options such as mastectomy, often performed in conjunction with a contralateral prophylactic mastectomy (CPM). Using three national datasets (the National Surgical Quality Improvement Program [NSQIP], Surveillance, Epidemiology, and End Results program [SEER], and the National Cancer Database [NCDB]), this study aims to evaluate longitudinal trends in lumpectomy, mastectomy, and CPM rates and to determine characteristics associated with current surgical practice.

**METHODS:** An examination of the NSQIP, SEER, and NCDB databases was performed to evaluate trends in lumpectomy and mastectomy rates from 2005-2017. Longitudinal trends were analyzed using Cochran-Armitage Trend tests. We further examined mastectomy rates by assessing annual rates of unilateral mastectomy and CPM per 1000 mastectomies using Poisson regression. Upon determining a notable reversal in lumpectomy rates in 2013, we compared NCDB lumpectomy patients before (2011) and after (2017) this change. Multivariable logistic regression models
were performed on the NCDB dataset to identify predictors of lumpectomy and contralateral prophylactic mastectomy.

RESULTS: We analyzed a study sample of 3,467,152 female surgical breast cancer patients (1,912,771 lumpectomy patients; 1,554,381 mastectomy patients). Surgical trends were found to be similar in all three databases. Lumpectomy rates reached a nadir between 2010-2013, with a significant increase thereafter (all p<0.001). Conversely, mastectomy rates declined significantly beginning in 2013. Unilateral and contralateral prophylactic (bilateral) mastectomy rates increased significantly from 2005-2013 (all p<0.001) and subsequently stabilized after 2013, with unilateral mastectomy rates remaining higher than CPM throughout the entire time period. Age distribution of lumpectomy patients from 2011 to 2017 demonstrated an increase in patients 60-79 years of age (2011: 35.3%, 2017: 55.9%, p < 0.001) with a concurrent increase in the proportion of patients with Medicare (2011: 39.6%, 2017: 44.7%, p < 0.001). On multivariable logistic regression analysis, the strongest predictors of lumpectomy were older age, black race, treatment at a community center, and clinical N0 disease. The strongest predictors of CPM were younger age, white race, treatment at an integrated network cancer program, and residence in a zip code with a higher median income.

CONCLUSION: This is the first study to document a reversal of trend in lumpectomy rates since 2013 with an associated decline in mastectomies. The steady increase in rates of CPM from 2005-2013 has since stabilized. While the databases differ in size and population, the trends are consistent among all three databases. The etiology of the recent reversal in trends is likely multifactorial; however, an increase in age of the breast cancer population is likely related to this change in the trends. Further qualitative and quantitative research is required to understand factors driving these recent practice changes and associated impact on patient reported outcomes.

**Track: Reconstructive Complications in Prepectoral Tissue Expander Placement: A Single Institution Study**

**Presenter: Robyn Rubenstein, MD**

**Co-Authors:** Evan Matros, MD, Ethan Plotsker, Kathryn Haglich, Jacqueline Chu, Cayla McKernan, Tajah Bell, Richard Poulton, De’Von McGriff, Carrie S. Stern, MD, Michelle R. Coriddi, MD, Joseph Disa, MD, Babak J. Mehrara, MD, Jonas Nelson, MD

**Affiliation: Memorial Sloan Kettering Cancer Center, New York, NY**

**BACKGROUND:** Prepectoral two-stage post-mastectomy breast reconstruction has increased in the recent time period. Benefits of prepectoral reconstruction may include lack of animation deformities and reduced post-operative pain, but its complication profile is currently unclear. The aim of this study is to examine the complication profile of prepectoral tissue expanders (TEs) at our institution to guide surgical decision making in patients who may be candidates for prepectoral reconstruction.

**METHODS:** We performed a retrospective review of patients who underwent immediate reconstruction with a prepectoral TE from January 2018 to June 2021 at Memorial Sloan Kettering Cancer Center. Patient demographics, comorbidities, and operative details were evaluated. Outcomes of interest included seroma, hematoma, infection/cellulitis, mastectomy skin flap necrosis (MSFN) requiring revision, TE exposure, capsular contracture, and TE loss. Multivariate logistic regression assessed factors associated with increased odds of TE loss.

**RESULTS:** A total of 741 patients and 1,225 TEs (34.7% unilateral cases; 65.3% bilateral cases) were included. Within the cohort, the mean age was 46.6 years (SD 10.6). The majority of patients were non-Hispanic (81.1%), white (69.8%), and never smokers (76.8%), and the average BMI was 26.8 (SD 6.0). The most common comorbidities included hypertension (19.8%), cardiovascular disease (16.2%), and autoimmune disease (16.9%). Regarding nonsurgical therapies, 33.1% of patients received neoadjuvant chemotherapy, 41.2% received adjuvant chemotherapy, 1.5% experienced prior radiation, and 20.6% received adjuvant radiation therapy. Overall, 79.4% of mastectomies were skin-sparing, 9.8% of mastectomies were associated with an axillary lymph node dissection (ALND), 72.4% of TEs were smooth, 86.5% used acellular dermal matrix (ADM), 50.8% used SPY angiography, and mean mastectomy weight was 569.6 g (SD 352.9 g). The most frequent complications were seroma (8.7%, n=106), infection/cellulitis (8.3%, n=101), and TE loss (4.2%, n=51). Hematoma, TE exposure, and MSFN each had complication rates of 2%, and fewer than 1% of patients experienced early capsular contracture. When comparing TEs that experienced loss versus TEs that did not experience loss, a higher proportion of TEs in the loss group