70%, respectively. At this cutoff point, 70% of cases were correctly classified as a major complication (n = 12,764).

CONCLUSIONS: Despite low morbidity rates, we were able to develop an acceptable risk prediction score with a cutoff value of ≥2 correctly classifying approximately 70% of major morbidity in adult patients undergoing face and neck aesthetic surgery.

Outcomes for Cosmetic and Reconstructive Surgeries of the Periorbital Complex from the “Tracking Operations and Outcomes for Plastic Surgeons” Database

**Presenter:** Jose Cataneo, MD

**Co-Authors:** Victor Martinez-Zavala, MD, Sydney Mathis, BS, Diana Del Valle, MD, Parit Patel, MD, MBA

**Affiliation:** University of Illinois at Chicago/Metropolitan Group Hospitals, Chicago, IL

**GOALS/PURPOSE:** Eyelid surgery for both aesthetic and reconstructive purposes are common plastic surgery procedures. However, there is a paucity of data from multi-institutional studies with large sample sizes. The purpose of this study was to utilize a national database and perform a comprehensive analysis of surgical outcomes for blepharoplasty.

**METHODS/MATERIALS:** This is a retrospective cohort review from 2003 to 2018 using the Tracking Operations and Outcomes for Plastic Surgeons database. The dataset was evaluated using Current Procedural Terminology codes for blepharoplasties and its related procedures (15820, 15821, 15822, 15823). These codes correspond to lower eyelid blepharoplasty, lower with extensive herniated fat pad, upper eyelid blepharoplasty, and upper with excessive skin weighing down. The core groups analyzed are those with upper, lower, or combined blepharoplasties. Categorical variables are described as frequencies and compared with Fisher exact or Pearson chi-squared test. Continuous variables, based on normality, are described as means (SD) or medians (IQR) and compared with Student T or Wilcoxon Rank-sum test, respectively. A stepwise backward multivariate logistic regression analysis was performed to assess the effect size of risk factors for adverse events with a P value set at 0.05 for significance.

**RESULTS/COMPLICATIONS:** A total of 20,275 eyelid procedures were included. Mean age was 54.7 years (SD 12.26), female rate was 86.2% (17,466), and mean BMI was 24.77 (SD 5.65). In demographics and comorbidities, 68.4% were Whites, followed by Asians (8.7%), diabetes rate was 2.9%, and 5.9% were smokers. We analyzed 15,720 (77.5%) upper and 13,359 (65.9%) lower eyelids; of those, 8804 (43.4%) were combined. The complication rate was 2.47% for upper, 3.97% for lower eyelid, and 4.68% for combined. Comparing combined blepharoplasties to single eyelid, there was a statistically significant higher rate of hematoma (P < 0.001) eyelid malposition/asymmetry (P = 0.004) and chemosis (P < 0.001) in the combined group. For lower eyelid blepharoplasty, ectropion was more common compared with combined (P < 0.001). On the multivariate regression analysis, combined blepharoplasty (OR 1.49 95%CI 1.08–2.08; P = 0.01), performing over three procedures at the same case (OR 1.80 95%CI 1.34–2.41; P < 0.001), and Hispanic ethnicity (OR 3.1 95%CI 1.17–8.21; P = 0.02) were associated with a higher likelihood to have complications. However, being a non-tobacco smoker (OR 0.56 95%CI 0.36–0.86; P = 0.009) lowers that probability by 44%.

**CONCLUSIONS:** The results from this study provide insight into the national complication rate for blepharoplasty to be up to 4%, with hematoma and return to the OR as the most common. Risk factors identified for developing complications are performing a combined upper and lower blepharoplasty, having over three procedures at the same time and being of Hispanic ethnicity, while no history of smoking was associated with a decreased probability for morbidity.

Three-dimensional Topographical Analysis of Edema Management following Rhinoplasty: A Randomized Prospective Study Comparing 3D-printed Custom Nasal Splints and Taping

**Presenter:** Anmol Patel, BA, BS

**Co-Authors:** Alexandra Gordon, MS, Jillian Schreiber, MD, Donald Salisbury, BA, BS, John Layke, DO, Oren Tepper, MD

**Affiliation:** Montefiore Medical Center

**INTRODUCTION:** Postoperative edema is a common sequela following rhinoplasty, which delays visualization of the final result and causes distress to both the patient and surgeon. Despite various modalities to control edema
in the postoperative period, there is currently no standard of care for management. Our group developed 3D-printed nasal splints to limit postoperative edema after rhinoplasty. 3D-printed splints aim to improve edema by applying gentle compression to the nasal contour while bypassing the variability of taping. This study was designed to quantify the difference in post-rhinoplasty edema for 3D-printed nasal splints versus traditional nasal taping.

METHODS: A prospective randomized analysis was conducted on patients who underwent primary rhinoplasty from 2019 to 2020. Inclusion criteria was 3D photos taken at 7 days postoperative (baseline) and at least two additional time points at 2–6 weeks, 3–6 months, and 1-year postoperative. Patients were randomized to receive 3D-printed splints or taping for postoperative management of edema. Each protocol was implemented at 1-week follow-up after removal of the thermoplastic splint placed in the operating room, and patients were instructed to apply their respective protocol for 3 months. 3D-printed splints were based on simulated 3D rhinoplasty results created using Vectra software (Canfield). They were downsized to smaller 3D-printed splints at further follow-up appointments. Taping was done daily by applying steri-strips over the dorsum and wrapping around the tip. 3D computer analysis of the nose was performed on all follow-up images and compared with the baseline image. This included subdividing the nose into superior 2/3 (dorsum) and inferior 1/3 (nasal tip). 3D metrics of percent change in volume (cm³) from the baseline were calculated for the total nose, dorsum, and tip. These volume changes were compared between 3D-printed splints and taping. Pearson chi-square test and t-test were used to determine statistical significance.

RESULTS: Sixty-eight patients met inclusion criteria, and analysis was conducted on two randomized groups: taping (n = 34) and 3D-printed splints (n = 34). There was a 14% decrease in volume for 3D-printed splint versus 10% decrease for taping at 6 months (P = 0.04). At 1 year, there was a 15% decrease in volume for 3D-printed splints versus 11% for taping (P = 0.03). For 3D-printed splints, both the nasal tip and dorsum demonstrated significant and consistent reductions in edema over the 1-year period: P < 0.01, P = 0.01 for tip and dorsum, respectively. For taping, both the nasal tip and dorsum exhibited variable and statistically insignificant reductions in edema: P = 0.4 and P = 0.1 for tip and dorsum respectively.

CONCLUSIONS: 3D analysis reveals that postoperative management of edema using 3D-printed splint resulted in a larger reduction of volume over time. The data were significant at 6 months and 1-year postoperative, indicating that 3D-printed splints will provide greater long-term steady reduction in edema compared with taping. 3D-printed splints are potentially easier for patients to place, compared with taping, as they require less materials. Our study does suggest that taping is better than no postoperative edema management, particularly for the dorsum, relative to previously published data. Future studies will include multicenter trials comparing these techniques with no postoperative treatment.

Improving Nasal Symmetry with the Alar Composite Graft: Technique and Outcome Assessments in Cleft Patients

Presenter: Sarah Phillips, BS

Co-Authors: Martin Carney, MD, Alvaro Reategui, BA, Yassmin Parsaei, DMD, Christopher Kalmar, MD, MBA, Joseph Lopez, MD, MBA, Derek Steinbacher, MD, DMD

Affiliation: Yale School of Medicine, New Haven, CT

INTRODUCTION: Residual cleft lip-associated nasal deformities (CLND) after initial cleft repair can have long-term cosmetic and psychological impacts on patients. The authors describe and assess a technique utilizing alar composite grafts for patients with CLND.

METHODS: This was a retrospective study of patients with a CLND who underwent rhinoplasty with alar composite graft placement by the senior author. Patients with high-quality preoperative and postoperative three-dimensional imaging were included. Demographic, surgical history, and operative details were recorded. The primary operative technique includes the following: (1) Weir and sill excision at the donor side, (2) Composite graft harvest, (3) Weir and sill incision at the recipient side, (4) Graft placement, and (5) Closure of the incision sites. Three-dimensional imaging was obtained preoperatively and postoperatively using Vectra M3 3D Imaging (Canfield Imaging System, Fairfield, N.J.). Linear and surface area measurements were made on donor and recipient sides. The difference in measurements was calculated to analyze the degree of similarity across sides, and this difference was compared preoperatively with postoperatively. Symmetry of the patient’s nostrils and overall nasal symmetry was compared preoperatively and postoperatively using root-mean-square deviation, with smaller values indicating more symmetry.