

Tracking Complications and Unplanned Healthcare Utilization in Aesthetic Surgery: A Nationwide Analysis of 214,504 Patients using the TOPS Database



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BACKGROUND

- There is a growing population of aesthetic surgery patients nationally, with over eighteen million aesthetic procedures performed in 2019
- Despite a need for granular outcomes in aesthetic surgery, large national databases are limited
- Limited data on unplanned healthcare utilization (readmission) in aesthetic surgery
- The Tracking Operations and Outcomes for Plastic Surgeons (TOPS) database was introduced to meet this need: database of aesthetic operations from around the U.S.
- Objective:** to utilize the TOPS database to characterize rates and predictors of surgical complications and unplanned healthcare utilization including readmissions, emergency room visits, and returns to the operating room across common aesthetic plastic surgery procedures.

METHODS & PATIENTS



- TOPS database from 2008-2019 was queried
- Five most common aesthetic surgery procedures according to ASPS statistics: [1] **breast augmentation**, [2] **liposuction**, [3] **rhinoplasty**, [4] **blepharoplasty**, and [5] **abdominoplasty**.
- Unplanned healthcare utilization, including hospital readmissions, emergency room (ER) visits, and returns to the operating room <30 days after index procedure
- Demographic and surgical factors associated with unplanned healthcare utilization were identified

RESULTS

Study Population

- 214,504 patients undergoing aesthetic surgery in TOPS
 - 94,618 breast augmentations, 56,756 liposuction procedures, 29,797 blepharoplasties, 8,387 rhinoplasties, and 24,946 abdominoplasties
- Low overall complication incidence:**
 - Seroma (N=2,444): 1.1%
 - Hematoma (N=1,522): 1.7%
 - Superficial wound complication (N=665): 0.3%
 - Need for PO antibiotics (N=2,127): 1.0%
 - DVT/PE (N=258): 0.1%
- Low unplanned healthcare utilization:**
 - Readmission (N=728): 0.34%
 - Emergency room visits (N=544): 0.25%
 - Returns to the OR (N=1,725): 0.80%

Figure. Trends in per-year breast augmentation, liposuction, blepharoplasty, rhinoplasty, and abdominoplasty as reported in TOPS, 2008-2019.

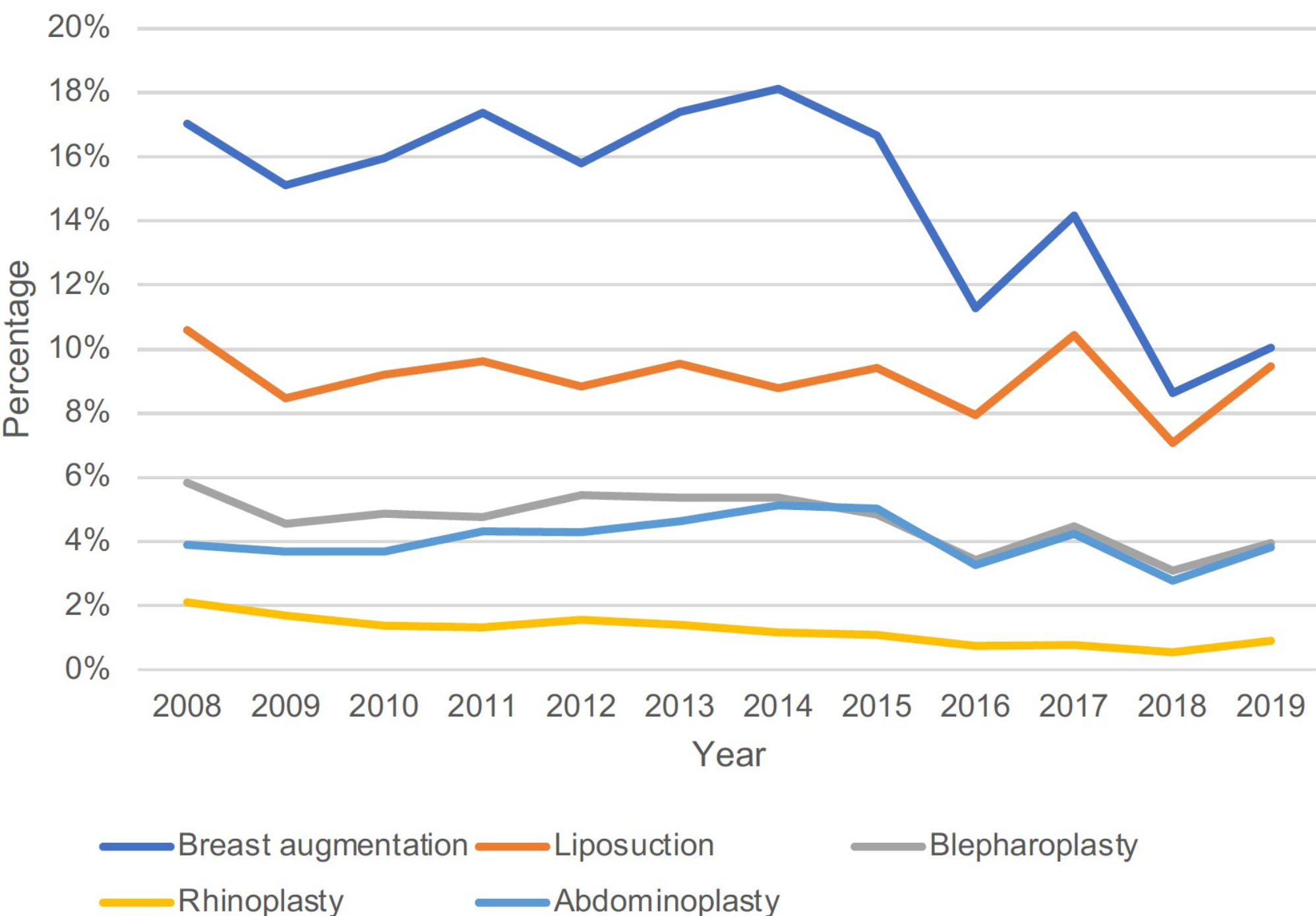


Table. Incidence of unplanned healthcare utilization across the cohort (N=214,504).

	Breast Augmentation (n=94,618)	Liposuction (n=56,756)	Blepharoplasty (n=29,797)	Rhinoplasty (n=8,387)	Abdominoplasty (n=24,946)
Unplanned hospital admission	147 (0.16%)	248 (0.44%)	33 (0.11%)	9 (0.11%)	291 (1.2%)
Unplanned ER visit	123 (0.13%)	191 (0.34%)	18 (0.06%)	4 (0.048%)	208 (0.83%)
Unplanned OR return	903 (0.95%)	275 (0.48%)	172 (0.58%)	21 (0.25%)	354 (1.42%)

Predictors of unplanned healthcare utilization (After multivariate adjustment) (all p<0.05)
1) Unplanned hospital admission: - Age [Odds Ratio (OR) 1.02] - BMI (OR 1.08) - Diabetes (OR 1.9) - Abdominoplasty (vs other procedures) (OR 2.45) - Combined aesthetic procedure (OR 1.3)
2) Unplanned emergency room visit: - BMI (OR 1.06) - Black/African American race (OR 1.52) - Abdominoplasty (vs other procedures) (OR 2.52) - Combined aesthetic procedure (OR 1.7)
3) Unplanned operating room return: - Age (OR 1.01) - BMI (OR 1.02) - ASA class 2 or 3 (OR 1.33, 1.54)

CONCLUSIONS

Obesity and diabetes are associated with risk of unplanned healthcare utilization in aesthetic surgery. Additionally, abdominoplasty is associated with a higher risk of unplanned utilization compared to other procedures, especially when performed as a combined procedure. This data identifies subgroups of aesthetic surgery patients at risk for unplanned healthcare utilization who may benefit from additional pre-operative planning and optimization.