



RISK MANAGEMENT

in Cosmetic Surgery:

Lessons from CosmetAssure Database

By Varun Gupta, MD, MPH; R. Bruce Shack, MD, FACS;
James C Grotting, MD, FACS; & Kent “Kye” Higdon, MD, FACS

Every surgery carries the risk of a complication, and cosmetic plastic surgery is no different. Similarly, every patient is different, and an array of factors – which include the patient’s body mass index, age, whether she or he smokes, or the presence of comorbidities such as diabetes – can increase the risk of an adverse surgical event.

Experienced plastic surgeons will tell you that it is really not a question of whether a complication will occur – the skill comes in predicting with whom a complication will occur and minimizing that patient’s risk.

Understanding that complications will occur is an important step toward reducing their frequency and protecting your patients. A five-year statistical analysis of cosmetic procedural data from patients covered by CosmetAssure, an insurance program that covers the costs of complications arising from aesthetic surgery, has revealed five key risk-factor analyses for cosmetic surgery patients.

The following information on complications is based on proprietary data compiled by CosmetAssure’s parent company, Alabama-based Aesthetic Surgeons’ Financial Group (ASFG). The data is based on 183,914 cosmetic procedures performed on more than 129,000 patients in the ASFG database. Readers are advised that as they review each analysis, they should note that the majority of the costs associated with these complications are usually not covered by a patient’s major medical insurance – treatment of a complication is an additional expense to the patient that can lead to a financial loss for the surgeon.

ABDOMINOPLASTY: COMBINING RISK

A total of 25,478 abdominoplasties were identified in the ASFG database – nearly 2/3 of which were performed in combination with another procedure. Four (4) percent of all the abdominoplasty procedures in the database experienced a complication (compared to 1.4 percent for all other aesthetic surgery procedures). Of these abdominoplasty-only complications, 31.5 percent were hematomas, 27.2 percent were infections, 11.4 percent were possible DVT/PE, 8.8 percent were confirmed DVT/PE and 7.0 percent were pulmonary dysfunction.

On multivariate logistic regression, statistically significant risk factors include being a man (relative risk [RR] of 1.8), being over age 55 (RR 1.4), having a body-mass index (BMI) greater than 30 (RR 1.3) and having the procedure done in a hospital/surgical center rather than an office-based surgical suite (RR 1.6). Diabetes and smoking were not found to be significant risk factors.

Risk for patients undergoing abdominoplasty in combination with one or more additional procedures (RR 1.5) was found to statistically increase the risk of complication (complication rate for abdominoplasty alone was 3.1 percent, increasing to 3.8 percent when combined with liposuction, 4.3 percent with a breast procedure, 4.6 percent when combined with liposuction and a breast procedure, 6.8 percent when combined with a body-contouring procedure, and 10.4 percent when combined with liposuction and a body-contouring procedure).

Analysis of the database further showed that combining abdominoplasty and liposuction with abdominoplasty increased the risk of possible or confirmed DVT/PE from 0.5 percent to 1.1 percent.

FACELIFT RISK FACTORS

Of the 11,300 facelift procedures represented in the ASFG database, this cohort had a higher percentage of men (majority) (8.8 percent), diabetics (2.7 percent), elderly (mean age 59.2 years) and obese patients (38.5 percent), but fewer smokers (4.8 percent). In addition, slightly more than 57 percent of facelifts were combined with other procedures.

Overall, facelifts had a 1.8 percent complication rate, with hematoma (1.1 percent) and infection (0.3 percent) emerging as the most common. Combining a facelift with another procedure, however, resulted in a 3.7 percent complication rate compared to a 1.5 percent complication rate for facelifts alone. Independent predictors of hematoma were being male (RR 3.9) and having the procedure in a hospital/surgical center rather than office-based surgical suites (RR 2.6). Patients who combined procedures (RR 3.5) or had a BMI of 25 or more (RR 2.8) were at increased risk of infection.

LIPOSUCTION

There were more than 31,000 liposuction procedures in the data set, of which 37 percent were performed as a solitary procedure, which saw an incidence of significant complications of 0.7 percent. When combined with abdominoplasty, the rate of complication grew to 3.8 percent, and when combined with abdominoplasty, breast and another body contouring procedure, the rate of complication hit 12 percent.

The most common complications related to liposuction were infection (0.7 percent), hemorrhage (0.6 percent) and possible or confirmed DVT/PE (0.6 percent). Combining procedures (RR 4.75), having a BMI of 25 or more (RR 1.58), or undergoing the procedure in a hospital/surgical center rather than office-based surgical suites (RR 1.65) were independent predictors of complications.

AESTHETIC BREAST SURGERY

Fifty-seven (57) percent of all patients in the database underwent breast surgery. These patients were younger – the mean age is 36.7 vs. 46.3 years, more likely to be smokers (10 percent vs. 5.9 percent) and less likely to be diabetic (1.2 percent vs. 2.7 percent) or overweight (25 percent vs. 51 percent) compared to other patients.

The overall complication rate after breast surgery was 1.9 percent with hematoma (1.1 percent) being the most-common major complication, followed by infection (0.4 percent) and suspected or confirmed VTE (0.2 percent).

Breast procedures included augmentation, mastopexy, augmentation-mastopexy and reduction mammoplasty. Rates of complication after augmentation-mastopexy were higher (1.9 percent) compared to augmentation or mastopexy alone (1.4 and 1.2 percent, respectively). More complications occurred in older patients (0.7 percent in those under age

20 to 2 percent in those age 60 or more). Higher BMI was associated with increased risk of infection (0.1 percent in those patients with a BMI under 18.5 to 1.5 percent in those whose BMI is 40 or more). On multivariate analysis, patients over age 40 and the type of surgical facility in which the procedure was performed (hospital or ambulatory center vs. office suites) were risk factors of any complication (RR 1.26 and 1.32, respectively). Patients age 40 or older and those with a BMI of 30 or more were at higher risk for postoperative infection (RR 1.52 and 2.57, respectively).

Twenty-one (21) percent of cosmetic breast patients underwent combined procedures. Concomitant abdominoplasty was performed in 5.8 percent of these patients, which was associated with a greater rate of complications (7.1 percent). Smoking increased complications in combined breast-abdominoplasty cases, as well as for gynecomastia surgery.

AESTHETIC SURGERY IN THE OVERWEIGHT PATIENT

More than one-third of the patients in the database had a BMI of 25 or higher. These overweight patients were more likely to be male (12.5 percent), diabetic (3.3 percent), non-smokers (92.8 percent), have multiple procedures (41 percent) and be operated on in a hospital (31.3 percent).

Complication rates steadily increased with higher BMI: 1.4 percent for those with a BMI under 18.5; 1.6 percent for those with a BMI from 18.5-24.9; 2.3 percent for those with a BMI from 25-29.9; 3.1 percent for those with a BMI from 30-39.9, and 4.2 percent for those whose BMI was 40 or more. Infection (0.8 percent of these patients), suspected VTE (0.4 percent) and pulmonary dysfunction (0.2 percent) were twice as common among overweight patients.

Incidence of hematoma was similar in the two groups (0.9 percent). Incidence of any complications following abdominoplasty (3.5 percent), liposuction (0.9 percent), lower body lift (8.8 percent) or combined breast and body contouring procedures (4.2 percent) were significantly higher in overweight patients. This group also had significantly more infections after abdominoplasty (1.2 percent), breast augmentation (0.3 percent) and lower body lift (2.7 percent). On multivariate analysis, those with a BMI of 25 or more remained an independent predictor of infection (RR 2.0), VTE (RR 2.0) or any complication (RR1.3) following aesthetic surgery.

When providing elective surgery, it's important for patients to understand the risks, however remote they may be. As ASPS notes in its public outreach efforts, cosmetic surgery is real surgery that is best performed by a plastic surgeon certified by the American Board of Plastic Surgery. ♦

Dr. Shack is a professor and chair of the Department of Plastic Surgery at Vanderbilt University in Nashville, Tenn., where Dr. Higdon is an assistant professor and Dr. Gupta is a resident. Dr. Grotting is a clinical professor in the Division of Plastic Surgery at the University of Alabama at Birmingham.

This article was sponsored by CosmetAssure. A complete statistical report of this data can be obtained through the company's website at cosmetassure.com.