

## **Abdominoplasty: Risk Factors, Complication Rates and Safety of Combined Procedures**

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**Purpose:** Abdominoplasty is a body-contouring procedure for functional and aesthetic improvement, often performed in combination with other procedures. In the last 10 years, the number of Abdominoplasties performed in the US has increased by 70%. Among aesthetic surgery procedures, Abdominoplasty is associated with a higher complication rate (as high as 51.8% has been reported), but previous studies are limited by small sample sizes. This study analyzed the risk factors and significant complications after Abdominoplasty, alone and in combined procedures.

**Methods:** A cohort of patients who underwent Abdominoplasty between May 2008 and May 2013 was identified from the CosmetAssure database. CosmetAssure is an insurance program that provides coverage for treatment of significant complications following aesthetic surgery. Univariate analysis and multivariate logistic regression was performed looking at risk factors including age, smoking, BMI, gender, diabetes, type of facility where performed, and if the procedure was combined or alone.

**Results:** A total of 25,478 Abdominoplasties were identified from 183,914 procedures in the database. Of these, 8,975 patients (35.2%) had Abdominoplasty alone while 16,503 (64.8%) underwent additional procedures. A total of 1012 complications were recorded (4.0% overall rate compared to 1.4% in all other aesthetic surgery procedures). Of these, 31.5% were hematomas, 27.2% infections, 11.4% possible DVT / PE, 8.8% confirmed DVT / PE and 7.0% pulmonary dysfunction. On multivariate logistic regression significant risk factors ( $p < 0.05$ ) included male gender (RR 1.8), age  $\geq 55$  (RR 1.4), BMI  $\geq 30$  (RR 1.3), multiple procedures (RR 1.5) and the procedure being performed in a hospital / surgical center rather than office-based surgical suite (RR 1.6). Diabetes and smoking were not found to be significant risk factors. Combined procedures were found to statistically increase the risk of complication (Abdominoplasty alone 3.1%, combined with liposuction 3.8%, breast procedure 4.3%, liposuction and breast procedure 4.6%, body-contouring procedure 6.8%, liposuction and body-contouring procedure 10.4%). Combining liposuction with Abdominoplasty also increased the risk of possible or confirmed DVT/PE from 0.5% to 1.1% ( $p < 0.05$ ).

**Conclusion:** Abdominoplasty is associated with more complications compared to other aesthetic surgery procedures. Performing additional body-contouring procedures leads to a significant increase in the complication rate, which is important in the increasing popularity of the 'makeover' concept. Higher risk patients might be better suited for staged rather than combined procedures.

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