Venous Thromboembolism in the Cosmetic Patient

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PURPOSE: Venous thromboembolism (VTE) is one of the most feared post-operative complications in cosmetic surgery. The true rate of VTE in this patient population remains largely unknown and current ASPS recommendations for prophylaxis are partially extrapolated from Orthopedic and General Surgery literature. Furthermore, although there are provider surveys suggesting a high incidence of deep venous thromboses in certain plastic surgeon communities in the United States, there still is a dearth of data establishing the number of these complications on a population level and quantifying concrete risk factors. This study analyzed the risk factors for VTE in cosmetic surgical procedures, alone and in combined procedures.

METHODS/MATERIALS: All patients who had a clinically significant VTE complication in cosmetic surgery procedures between May 2008 and May 2013 were identified from the CosmetAssure database. CosmetAssure is an insurance program that provides coverage for treatment of significant complications following aesthetic surgery. Univariate and multivariate analysis was performed on identified risk factors for venous thromboembolism, including *age, smoking, BMI, gender, diabetes, type of facility where performed, and if the procedure was combined or alone*.

RESULTS: A total of 129,007 patients were identified from 183,914 procedures in the database. An overall complication rate of 1.9% was established. A total of 116 confirmed VTE complications were encountered (0.09% incidence). Combined procedures had a significantly higher overall rate of VTE compared to solitary procedures (0.20% vs. 0.04%, $p<0.01$). On multivariate logistic regression significant risk factors ($p<0.05$) included body procedures (RR 12.9), combined procedures (RR 2.3), BMI ≥ 25 (RR 2.0) and age ≥ 40 (RR 1.8). Diabetes, smoking, gender and the facility in which the procedure was performed were not found to be significant risk factors (Table 1). Face procedures (0.01%) and breast procedures (0.01%) had the lowest VTE rates, followed by combined face/body (0.16%), body procedures (0.21%), and combined body/breast procedures (0.28%). The most common single procedures reporting confirmed VTE were thigh lift (0.25%), lower body lift (0.23%), abdominoplasty (0.20%), brachioplasty (0.13%), liposuction (0.06%), breast reduction (0.03%), and rhinoplasty (0.03%).

CONCLUSION: The complication rate for VTE in cosmetic procedures is relatively low. However, the risk increases with combined procedures as well as with particular body areas, most notably body. Equally, significant patient risk factors exist including BMI and age.

LEGEND:

Table 1. Risk Factor multivariate logistic regression.

	Relative Risk	p-value	95% Confidence Interval	
Multiple procedures	2.34	<0.01*	1.55	3.51
Body Procedures	12.89	<0.01*	6.14	27.03
BMI ≥ 25	1.97	<0.01*	1.32	2.95
Age ≥ 40	1.85	<0.01*	1.23	2.77
Smoking (Yes)	0.55	0.25	0.20	1.50
Hospital / (ASC-OBSS)	1.03	0.87	0.70	1.52
Diabetes (Yes)	0.29	0.21	0.04	2.05
Female Gender	2.14	0.14	0.79	5.85

BMI, body mass index.
ASC, accredited surgical center.
OBSS, office-based surgical suites.