Incidence and Risk Factors for Major Surgical Site Infections In Aesthetic Surgery: Analysis of 129,007 Patients

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INTRODUCTION: Surgical site infections (SSIs) represent one of the most common postoperative complications in patients undergoing aesthetic surgery. Current literature evaluating SSIs following aesthetic surgical procedures is usually limited to single procedures, single institution or surgeon experiences with small sample size. The purpose of this study was to determine the incidence of major SSIs amongst some of the most commonly performed cosmetic procedures and amongst different procedure combinations. Additional goals were to delineate significant risk factors for postoperative SSIs after aesthetic surgery.

METHODS: A prospectively enrolled cohort of patients who underwent aesthetic surgery between 2008 and 2013 was identified from the CosmetAssure national insurance database. Primary outcome was occurrence of a major SSI requiring emergency room visit, hospital admission, or reoperation within 30 days of the index operation. Univariate and multivariate analysis evaluated potential risk factors for SSIs including age, gender, body mass index (BMI), smoking, diabetes mellitus, type of surgical facility, procedure by body region, and combined procedures.

RESULTS: A total of 129,007 patients were captured in the database, of which 599 (0.46%) were diagnosed with a major SSI. Mean age (43.8±12.4 vs. 40.9±13.9, $p<0.01$) and BMI (27.3±5.5 vs. 24.3±4.6, $p<0.01$) were higher in patients with SSIs. Patients with a SSI were more likely to be smokers (10.5% vs. 8.2%, $p=0.04$) and diabetic (4.5% vs. 1.8%, $p<0.01$). Females suffered more SSI than males (0.5% vs. 0.3%, $p=0.02$). Trunk or extremity procedures had a higher incidence of SSI compared to breast or face procedures (0.9% vs. 0.2%, $p<0.01$). On multivariate analysis, independent predictors of SSI included age (Relative Risk (RR) 1.01), female gender (RR 1.86), BMI (RR 1.07), smoking (RR 1.61), diabetes mellitus (RR 1.58), hospital or ambulatory surgery center procedures (RR 1.39), trunk or extremity procedures (RR 2.42), and combined procedures (RR 1.88).

CONCLUSION: SSIs following cosmetic surgical procedures are associated with numerous independent predictors, which should be taken into consideration when counseling patients undergoing aesthetic surgery. Addressing some of the modifiable patient-related risk factors is important, and may decrease SSIs even further in this patient population.