

Analysis of the National Surgical Quality Improvement Program Database in 19,100 Patients Undergoing Implant-Based Breast Reconstruction: Complication Rates with Acellular Dermal Matrix

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Background: The use of acellular dermal matrices has become increasingly popular in immediate and delayed tissue expander/implant-based breast reconstruction. However, it is unclear whether their use is associated with increased postoperative complication rates. Using the American College of Surgeons National Surgical Quality Improvement Program database, the authors assessed baseline differences in demographics and comorbidities with and without acellular dermal matrix and determined whether postoperative complication rates varied.

Methods: Using the national surgical database (2005 to 2011), tissue expander/implant-based breast reconstruction cases were extracted using Current Procedural Terminology codes. Differences in preoperative demographics and comorbidities were assessed using chi-square and *t* test analysis using SPSS. The authors analyzed variations in complication rates and determined whether demographics and comorbidities affected outcomes using multivariate logistical analysis. A post hoc power study was calculated.

Results: Of 19,100 cases, 3301 involved acellular dermal matrix use. Overall complication rates were not statistically significant (acellular dermal matrix, 5.3 percent; non-acellular dermal matrix, 4.9 percent; $p = 0.396$). Several risk factors were statistically significant associated factors of complications. Higher body mass index was associated with wound complications in both cohorts. In the non-acellular dermal matrix group, body mass index, smoking, and diabetes were associated with major complications, and radiotherapy and steroid use with minor complications.

Conclusions: Acellular dermal matrix use did not appear to increase complication rates in tissue expander/implant-based breast reconstruction in this survey of a national surgical database. There was no significant difference in complication rates between the acellular dermal matrix and non-acellular dermal matrix groups. (*Plast. Reconstr. Surg.* 132: 1057, 2013.)

CLINICAL QUESTION/LEVEL OF EVIDENCE: Therapeutic, III.

Breast cancer is the most common form of cancer in women.¹ In 2011, over 230,000 new cases of breast cancer were diagnosed.² The American Society of Plastic Surgeons

reported 96,277 breast reconstruction procedures, of which 76,426 (79 percent) were immediate or delayed tissue expander/implant-based breast reconstructions in 2011.³ The use of acellular dermal matrices in tissue expander/implant-based breast reconstruction has become popular

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