Immediate Breast Reconstruction Following Mastectomy Using Sterilized Acellular Dermal Matrix: Initial Experience Outcomes Study

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Abstract

BACKGROUND: Acellular dermal matrices (ADMs) used in two-stage breast reconstructions continue to evolve to meet the needs of patients and plastic surgeons. The purpose of this series is to evaluate the early safety, efficacy, morbidity, and incorporation of a new ready to use, sterilized ADM.

METHODS: All patients underwent tissue expander reconstruction with AlloDerm® Ready-To-Use (RTU) (LifeCell Corporation, Branchburg, NJ). Data collection was conducted between March 2011 (introduction of product) and January 2012. All patients underwent immediate dual plane reconstruction with 8x16 cm ADM and low- or moderate-height tissue expanders. Patient demographics, risk factors, surgical technique, early complications, and outcomes were evaluated.

RESULTS: Eighty-four consecutive patients were included, with a total of 160 breasts. The average age was 47 years (range: 28-70), with an average body mass index (BMI) of 29.2 (range: 19-49). Therapeutic mastectomy was performed on 72 patients. Risk factors included hypertension (n=5), smoking (n=5), diabetes (n=5), BMI >30 (n=31), pre-operative radiation therapy (n=13), postoperative radiation therapy (n=9), neo-adjuvant chemotherapy (n= 15), and adjuvant chemotherapy (n=15). Total complications included 5 seromas (5.9%), 3 wound dehiscences (3.5%), 3 cases of skin necrosis (3.5%) leading to an additional procedure, 2 infections (2.3%), and 1 hematoma (1.1%). Histological analysis of ADM was obtained during the second stage reconstruction with cellular evidence of incorporation. To further delineate efficacy, data were stratified into 4 groups: 1) BMI <30; 2) BMI 30.1-35; 3) BMI 35.1-40.0; 4) BMI >40.1. There was a statistically significant difference in complications occurring between Group 4 vs Groups 2 and 1. Eighty percent of seromas occurred in patients with BMI >40. No loss of prosthesis was observed in this series.

CONCLUSIONS: Breast reconstruction with sterilized ADM offers a safe and effective alternative in the setting of both oncological and physiological predisposing factors, especially in patients with BMI <40.