Outcomes of Abdominal Wall Reconstruction with Acellular Dermal Matrix Are Not Affected by Wound Contamination

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Abstract

Background: The optimal type of mesh for complex abdominal wall reconstruction (AWR) has not been elucidated.[1-3] We hypothesized that AWRs using acellular dermal matrix (ADM) experience low rates of surgical site occurrence (SSO) and surgical site infection (SSI), despite increasing degrees of wound contamination.

Methods: We retrospectively reviewed prospectively collected data from consecutive AWR reconstructions with ADM over a 9-year period. Outcomes of abdominal wall reconstructions were compared between patients with different Centers for Disease Control and Prevention (CDC) wound classifications.[4] Univariate and multivariate logistic regression and Cox proportional hazard regression analyses identified potential associations and predictive/protective factors.

Results: The 359 patients had a mean follow-up of 28.3±19.0 months. Reconstruction of clean wounds (n=171) required fewer reoperations than that of combined clean-contaminated (n=148)/contaminated (n=40) wounds (2.3% vs. 11.2%; p=0.001) and trended towards experiencing fewer SSOs (19.9% vs. 28.7%, p=0.052). There were no significant differences between clean and clean-contaminated/contaminated cases in 30-day SSI (8.8% vs. 8.0%), hernia recurrence (9.9% vs. 10.1%), and mesh removal (1.2% vs. 1.1%) rates. Independent predictors of SSO included body mass index ≥30 kg/m^2 (OR=3.6; p<0.001), ≥1 co-morbidities (OR=2.5; p=0.008), and defect width ≥15 cm (OR=1.8; p=0.02).

Conclusions: Complex AWRs using ADM demonstrated similar rates of complications between the different CDC wound classifications. This is in contradistinction to published outcomes for AWR using synthetic mesh that show progressively higher complication rates with increasing degrees of contamination.[5] These data support the use of ADM rather than synthetic mesh for complex AWR in the setting of wound contamination.

References

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