Infection Following Implant-based Breast Reconstruction: Salvage Rates and Predictors of Success

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Background: Few studies address salvage rates for infection in implant-based breast reconstruction. An understanding of success rates and clinical predictors of failure may help guide management.

Methods: Retrospective analysis of multi-surgeon consecutive implant-based reconstructions from July 2004 to December 2010.

Results: 1952 immediate implant-based reconstructions were performed in 1241 patients. 99 (5.1%) reconstructions were admitted for infection. These patients had a higher incidence of smoking (p<0.01), chemotherapy (p<0.01) and radiation (p<0.001). There was no difference in age, BMI, or acellular dermal matrix (ADM) usage. With intravenous antibiotics, 25 (25.3%) reconstructions cleared infection while 74 (74.7%) underwent attempted operative salvage (18) or explant (56). Patients who failed to clear infection medically had a higher average wbc (p<0.002) and higher absolute wbc >10,000 (p<0.03). There was no difference in ADM usage.

Of the attempted immediate salvage group, 12 cleared the infection with immediate implant exchange and 6 eventually lost the implant. Patients who failed implant salvage were more likely to have MRSA (p<0.006).

Following explantation, 32 patients had delayed tissue expander (TE) insertion (average 150 days), 6 had delayed autologous flap reconstruction (average 139 days), 13 had no further reconstruction. Of the delayed TE insertions, 26 were successful and 6 had recurrent infection resulting in implant loss. There were no differences in time interval to delayed TE insertion between successful and unsuccessful secondary delayed surgeries.

Conclusions: Salvage of the infected breast prosthesis remains a challenging yet viable option for a subset of patients. Salvage with intravenous antibiotics and/or implant exchange was successful in 37.3% of patients. Smoking, radiation, and chemotherapy were significant predictors for developing infection. Patients with a WBC>10,000 and MRSA were more likely to fail implant salvage attempts. There was no association with time interval between delayed TE insertion and secondary explant or ADM usage (Figure 1).

Predictors of Breast Erythema		Predictors of Failure at Implant Salvage	
Smoking	p<0.01	WBC>10.000	p<0.03
Chemotherapy	p<0.01	MRSA	p<0.006
Radiation	p<0.001		

Figure 1: Predictors of Infection and Failure of Implant Salvage.

* ADM usage showed no statistical significance