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“DIEP flap monitoring in ICU and Ward Settings”

Background:

Following deep inferior epigastric artery (DIEP) flap surgery for breast reconstruction frequent flap monitoring is performed during the first 24 hours postoperatively. This monitoring is typically carried out in an intensive care unit (ICU) environment. ICU admission has been a well-documented source of increased cost and decreased patient comfort during hospitalization. This combined with low flap loss and take back rates in the published literature influenced our transition from flap monitoring in an ICU setting to flap monitoring in a normal ward setting. This study aims to demonstrate the safety and efficacy of flap monitoring in a non-ICU setting for patients following (DIEP) flap surgery.

Methods:

This is a retrospective review of all free flap breast reconstructions performed by multiple surgeons at a single institution from April 2013 to February 2018. The primary variable assessed was patient postoperative disposition. Group 1 included patients who received flap monitoring in an ICU setting. Group 2 was made up of patients who received their flap monitoring in an inpatient ward setting. The primary outcomes measured included number of takebacks for vascular insufficiency and free flap failure. Secondary outcomes measured included length of hospital stay, and number of 30-day readmissions. Fisher's exact test and Welch's t-test were used to analyze differences between the two groups.

Results:

Autologous breast reconstruction was performed in 171 patients using 314 free flaps. Group 1 included 129 patients undergoing 232 flaps followed by flap monitoring in an ICU setting. Group 2 included 42 patients undergoing 82 flaps followed by flap monitoring in a hospital ward setting. There was no significant difference in total flap loss between the two groups, (group 1, 6 flaps [2.6%] vs. 1 flap [1.2%], $p = 0.679$). There was a significantly decreased take back rate and average length of stay associated with non-ICU flap monitoring (16 flaps [7.0%] vs. 1 flap [1.2%], $p = 0.049$, 4.1 days vs 3.7 days, $p < 0.0001$, 120 admissions [52.2%] vs 0 [0%], $p < 0.0001$). There was no significant difference in 30-day readmission rates (6.1% vs 4.8%, $p = 0.079$).

Conclusion:

Our data demonstrates that postoperative monitoring of DIEP flap patients can be performed in a non- ICU setting with no increase in flap loss rates. There was a decreased take back rate, and average length of stay in patients who were managed postoperatively in a non-ICU setting. This shows that Non-ICU flap monitoring can be performed in a safe manner, which can improve resource utilization and patient comfort following free flap breast reconstruction.