Enhanced Recovery After Surgery (ERAS) Implementation in Abdominal Based Free Flap Breast Reconstruction

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Background/Introduction: Breast reconstruction continues to be important for many women with breast cancer. Following a mastectomy, the breast may be reconstructed with either implants or the patient's own tissue. The benefit of breast reconstruction with tissue is the more natural feel and long term durability in comparison to implants. The downside of a tissue reconstruction is the donor site scar and perceived complexity and pain associated with this approach. Through refinements in technique, breast reconstruction with abdominal tissue has become more streamlined and less invasive. As the techniques have evolved so has the management of the patient in the perioperative period. Enhanced Recovery After Surgery (ERAS) initiatives have been implemented in many hospitals with the aim to improve post-operative physiologic function and recovery. In this study, we sought to compare the outcomes of patients undergoing abdominal based free flap breast reconstruction before and after implementation of the ERAS protocol.

Methods: This is an IRB approved retrospective study which involves analysis of data extracted from chart review. Evaluable subjects were defined as those who have undergone abdominal free flap breast reconstruction at Duke University Hospital, identified using the CPT code 19364. Patients with pre-existing psychiatric and chronic pain conditions were excluded. The ERAS protocol was implemented in May of 2015. For this study, data was collected from 10/1/2014 through 1/1/2016 in order to include patients before and after implementation of ERAS protocol. Patient demographics, perioperative surgical and anesthesia data, need for analgesics, and complications were collected and summarized. Statistics were done with JMP and Microsoft excel 2013.

Results: There were 17 patients in the control and 21 patients in the ERAS group. Both groups had similar age, race and BMI. The patients in the ERAS group had a significantly reduced length of stay (LOS) (3.8 v. 4.76 days, p=0.0003, t-test). There was no significant difference in 24hr morphine equivalent dosage (MED) (34.17 vs. 22.2 mg, p=0.26, t-test). However, intravenous (IV) pain medication usage was reduced in ERAS patients (14/21 v. 17/17 patients, p=0.0049, t-test) and patients had earlier return of bowel function (POD 2 v. 3.5, p=0.002, t-test). There was no significant difference in the rate of flap loss between groups (6.45% ERAS v. 3.57% control, p=0.617, t-test).

Conclusion: Implementation of an ERAS protocol for abdominal free flap breast reconstruction at a tertiary medical center was associated with a significantly reduced LOS, decreased IV narcotic pain medication usage and earlier return of bowel function. This is consistent with results seen in colorectal surgery and suggests that this program could be instituted nationwide for standardization of breast reconstruction with improved outcomes.