

tracked. Data was collected using a centralized REDCap database. Analysis was performed with SPSS: continuous variables were analyzed with t-tests, and binary variables were analyzed with Chi-Square ( $\chi^2$ ). Univariate & multivariate analyses were used to control for group differences.

**Results:** Age, comorbidities, and past medical histories were equivalent between groups, except for diabetes (Group 1 = 7%, Group 2 = 21%,  $p < .01$ ) and prior abdominal surgery (Group 1 = 73%, Group 2 = 84%,  $p = .046$ ). Rates of wounds requiring operation ( $p = .228$ ), infections requiring IV antibiotics ( $p = .892$ ), seromas requiring operation ( $p = .422$ ), hematomas requiring operation ( $p = .580$ ), pneumothorax ( $p = .538$ ), DVT ( $p = .837$ ), and PE ( $p = .315$ ) were equivalent. Post-op SICU stay ( $p = .385$ ) and total hospital stay ( $p = .173$ ) were equivalent. Completion of reconstruction was significantly lower in Group 2 (49%) than in Group 1 (73%),  $p < .01$ . Flap loss was significantly higher in Group 2 (3/143, 2.1%) than in Group 1 (3/438, 0.68%),  $p < .01$ . Overall flap loss was 6/581 (1.03%).

**Conclusion:** In our study, DIEP reconstruction in BMI  $\geq 35$  is associated with three-fold increase in flap loss, and lower likelihood of finishing the reconstruction process. This could be accounted by higher rates of diabetes and prior abdominal surgery in Group 2, though this was controlled in our analysis. Rate of flap loss was still quite low in Group 2 (2.1%), and this is markedly lower than published rates of implant failure in obese patients (~10-15%). Based on individual practice patterns, patients with BMI  $\geq 35$  can be educated of their higher risks in consideration as a candidate for free flap breast reconstruction while keeping in mind that there is still a higher likelihood of success when compared to implants.

68

## The False Positive Rate Of Transcutaneous Tissue Oximetry Alarms In Microvascular Breast Reconstruction Rises After 24 Hours

*Phu C. Tran, MD, Will DeBrock, BS, Mary E. Lester, MD, Brett C. Hartman, DO, Juan Socas, MD, Aladdin H. Hassanein, MD*

*Indiana University School of Medicine, Indianapolis, IN, USA.*

**Purpose:** Transcutaneous tissue oximetry is widely used as an adjunct for postoperative monitoring after microvascular breast reconstruction and has been shown to improve flap salvage rates.

Despite a high sensitivity at detection of postoperative vascular issues, alarms from probe malfunctions/ and or positioning can generate unnecessary nursing calls, concerns, and evaluations. The purpose of this study is to analyze the false positive rate of transcutaneous tissue oximetry monitoring over the postoperative period and assess changes in its utility over time.

**Methods:** Consecutive patients undergoing microvascular breast reconstruction out our institution were assessed between 2017-2019. Inclusion criteria included use of transcutaneous tissue oximetry for monitoring. Variables of interest were transcutaneous tissue oximetry alarms that triggered nursing calls, flap loss, re-exploration, and salvage rates.

**Results:** The study included 175 patients (286 flaps). The flap loss rate was 1.0% (3/175). A total of twelve patients (6.8%) required re-exploration, with a 67.0% flap salvage rate. Nine of these patients required exploration within 24 hours. The 3 take-backs after 24 hours were not for vascular compromise but were for abdominal wall hematoma, increasingly sanguineous drain output, and exam concerning for hematoma. Within the 24-hour postoperative period, 43 tissue oximetry alarms triggered nursing calls; 7 alarms (16.2%) were confirmed to be for flap issues secondary to vascular compromise. After 24 hours, 44 alarms were triggered, none of which were associated with flap compromise. The false positive rate of the alarm within 24 hours was 83.7% (36/43) compared to 100% (44/44) after 24 hours ( $p = 0.01$ ).

**Conclusions:** Transcutaneous tissue oximetry is a helpful adjunct to the clinical exam in the postoperative monitoring of flaps in microsurgical breast reconstruction. The false positive rate significantly rises after 24 hours. The benefit may not outweigh the concerns, labor, and effort that results from alarms after postoperative day 1. We recommend considering discontinuing transcutaneous tissue oximetry monitoring after 24 hours.

69

## Detection Of Tiny Lymph Nodes Using A Near-infrared Camera With Ingaas Element

*Shinsuke Akita, Nobuyuki Mitsukawa, Yuzuru Ikehara*

*Chiba University, Chiba City, Japan.*

**Purpose:** Obstruction of the lymphatic flow following LN dissection has been recognized as a therapeutic target for microsurgical reconstruction. It is not always possible to