Postoperative Pain and Opioid Use after Breast Reduction with or without Preoperative Nerve Block

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PURPOSE:

Physician-prescribed opioids have been implicated as a major contributing factor in the current opioid epidemic in the United States. Breast reduction mammoplasty is one of the most commonly performed plastic surgeries, and patients are often sent home with large numbers of opioids. The use of regional anesthesia, as a part of multimodal treatment, has been shown to decrease opioid consumption. Here we investigate the effects of erector spinae nerve blocks on postoperative pain and opioid consumption after breast reduction.

METHODS:

Following IRB approval, a prospective cohort study of patients undergoing breast reduction mammoplasty at Montefiore Medical Center between June and September 2019 was performed. Patients were divided into two cohorts: those who received preoperative nerve block and those who did not. Primary outcomes measures analyzed included: Likert pain scores and opioid consumption in the first 5 postoperative days. Opioid consumption was measured by morphine equivalents.

RESULTS:

Forty-seven patients were included in the analysis: 13 patients (27.7%) in the nerve block cohort and 34 (72.3%) in the control. On average patients were prescribed 113.5 morphine equivalents (± 37.2) and consumed 44.6% (± 35.3) by the end of the first week after surgery. For all patients, the amount of morphine equivalents prescribed was correlated with the morphine equivalents taken ($p < 0.05$). There were no significant differences between cohorts in morphine equivalents prescribed, morphine equivalents taken, or percent of morphine equivalents taken. Likert pain rating on postoperative day 1 was not significantly different between groups, with a mean of 6.4 (± 1.8) for the block cohort and 4.9 (± 2.5) for the control. The magnitude of pain reduction between postoperative days 1 and 2 was significantly greater for the nerve block cohort than the control (2.3 ± 4.1 and 0.8 ± 1.7 decrease in Likert scores respectively, $p < 0.05$). No correlation was found between morphine equivalents taken and pain reduction from the day 1 baseline at any time point.

CONCLUSIONS:

Patients on average only consumed 44.6% (± 35.3) of the opioid pain medications that they were prescribed, suggesting postoperative opioids may be over-prescribed for breast reduction recovery. In addition, increased opioid consumption did not correlate with reduction in pain scores from baseline at any time point. The larger reduction in pain scores by postoperative day 2 in the nerve block cohort suggests that nerve blocks may provide an early benefit to patients during recovery from breast reduction.