



ORAL PRESENTATION GROUP 2 – PRESENTATION 1

Use of Preoperative Thoracic Paravertebral Blocks for Breast Reduction Surgery Reduces Overall Opioid Exposure

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Purpose:

Decreasing total exposure to opioids in the perioperative period has become a focus of recent efforts to control the opioid crisis. Regional anesthesia, specifically thoracic paravertebral blocks, have been shown in mastectomy to decrease pain and aid in early discharge; however, the use of this technique has not been explored in outpatient procedures such as breast reduction mammoplasty (BRM). We seek to determine the effects of thoracic paravertebral blocks on pain and opioid consumption in patients undergoing BRM.

Methods:

A retrospective review of all patients undergoing BRM by the senior author (KEW) between January 2016 and October 2018 was conducted. Patients were divided into two cohorts: Those who received bilateral paravertebral blocks pre-operatively in addition to general anesthesia and those who underwent general anesthesia alone. Patients were analyzed based on age, body mass index (BMI), total reduction weight, length of surgery, and medical comorbidities. The primary outcome measure was intra-operative and post-operative opioid consumption measured in morphine milligram equivalents (MME). Secondary outcome measures included postoperative pain, as rated on a numerical pain rating scale, and duration of time spent in recovery prior to discharge.

Results:

One hundred and six patients were included for analysis (block n=58 (54.7%), no block n=48 (45.3%)). Age, BMI, reduction specimen weight, and co-morbidities did not differ between groups. Intraoperative opioid consumption was significantly lower in patients with paravertebral blocks (block 19.6 ± 11.7 MME, no block 24 ± 10.4 MME; $p < 0.001$). Length of surgery was significantly longer in patients who did not receive a block (block 175.1 ± 24.0 minutes, no block

185.8±25.2 minutes; $p = 0.027$). In the immediate postoperative period, there was no difference in opioid consumption between groups, however a significantly higher proportion of patients without blocks received non-opioid analgesic for pain management (block $n= 16$ (27.6%), no block $n=24$ (50.0%); $p=0.018$). Although patient-reported pain scores did not differ between groups in the immediate postoperative period, time to discharge of patients from the PACU was significantly lower in patients with paravertebral blocks (block 253.6 ± 94.5 min, no block 380 ± 209 min; $p<0.001$). The estimated cost of the paravertebral block (\$215.64) was less than the cost of increased time in the PACU (\$556.16).

Conclusion:

The use of preoperative paravertebral blocks in concert with postoperative non-opioid analgesia is suggested to decrease overall opioid exposure, to reduce both operative and recovery time, and decrease overall healthcare costs.