



## Pectoral nerve block and acute pain management after breast reduction surgery in adolescent patients

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To the Editor,

The inter-fascial pectoral nerve block (PECS block) provides regional anesthesia for the chest wall and axillary areas and has been increasingly used for perioperative analgesia after breast cancer surgery.<sup>1–3</sup> Non-oncological breast procedures, such as breast reductions, are also associated with significant postoperative pain. The role of the PECS block in breast reduction surgery, and more specifically in adolescent patients, is not well established in the literature. Thus, as an initial step and following approval by our institution's research ethics board, we conducted a retrospective chart review of adolescent patients aged  $\leq 18$  yr with an American Society of Anesthesiologists Physical Status  $\leq$  II undergoing breast reduction surgery at the Children's Hospital of Eastern Ontario from February 2015 to February 2017. We

compared patients who received a PECS block added to general anesthesia with those who received general anesthesia alone (without a PECS block). All surgeries were performed by a single experienced plastic surgeon, and both groups of patients had access to opioids in the form of intravenous patient-controlled analgesia with either morphine or hydromorphone.

We compared opioid consumption in the first 24 hr after surgery, postanesthesia care unit (PACU) and hospital lengths of stay (analyzed using linear regression), postoperative nausea and vomiting (PONV) (analyzed using logistic regression), and numeric rating scale pain scores (analyzed using a linear mixed-effects model). Results were considered significant at  $P < 0.05$ .

We studied a convenience sample of 18, 11 of whom received a PECS block and seven no block. We found no significant differences between the two cohorts in baseline demographics and clinical characteristics. The [Figure](#) shows the results on postoperative opioid use; there were no statistically significant differences. We also observed no statistically significant differences in PONV, pain scores, PACU or hospital length of stay, emergency room visits, or re-operation between the PECS block and no block groups. No complications associated with PECS blocks were noted.

Reductions in opioid consumption, PONV, and postoperative pain have been consistently observed with the use of the PECS block in patients undergoing breast cancer surgery.<sup>3–5</sup> Considering its safety profile, the PECS block has also been frequently used in clinical practice in other types of breast surgery, including breast reduction. While we found no statistically significant effects on postoperative opioid use, postoperative pain, or PONV associated with the use of the PECS block in our preliminary study on adolescents undergoing breast

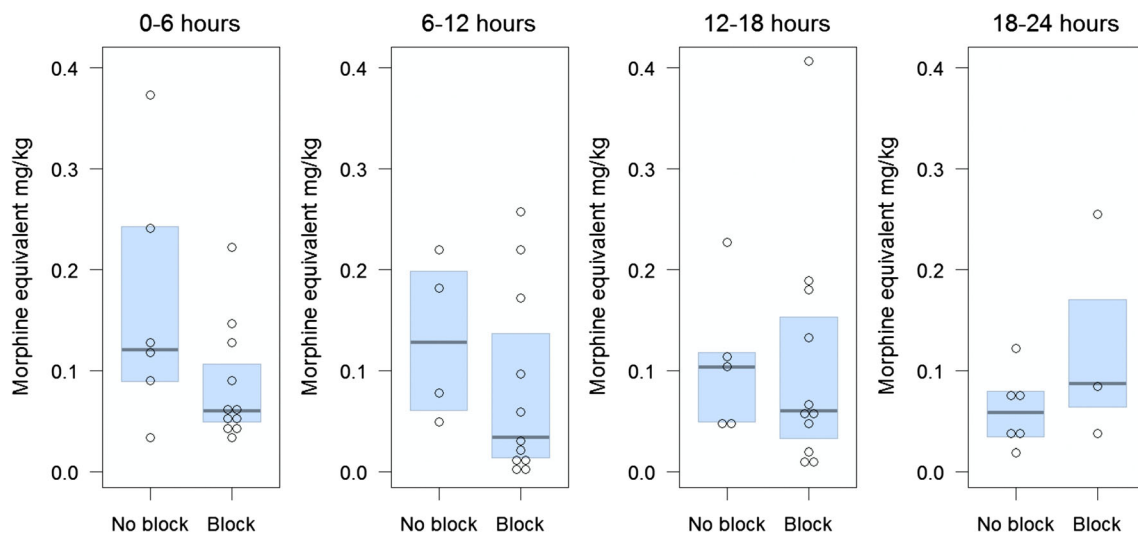
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**FIGURE** Total postoperative opioid use (morphine equivalent dose in  $\text{mg}\cdot\text{kg}^{-1}$ ) compared between the inter-fascial pectoral nerve (PECS) block and no block groups.

reduction surgery, our small sample size and limited power likely precluded us from identifying any differences. Other obvious limitations include the retrospective design and lack of randomization. Nevertheless, these hypothesis-generating efficacy data combined with an absence of documented complications in this cohort serve to support the design and conduct of a future randomized controlled trial to assess the effectiveness of the PECS block in adolescents undergoing breast reduction surgery.

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