

Addressing Limitations and Future Directions in the Use of Glucocorticoids for Pediatric Nuss Procedure Analgesia: A Critical Appraisal [Letter]

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Dear editor

We have read with great interest the recent article by Donham et al titled “Analgesic Quality Improvement in Paravertebral Blocks for Pediatric Nuss Procedure: An Exploratory Report on the Effects of Perineural Combined Glucocorticoids” published in the Journal of Pain Research.¹ The study provides valuable insights into the potential benefits of adding glucocorticoids to paravertebral blocks for reducing postoperative opioid consumption in pediatric patients undergoing the Nuss procedure. While the findings are promising, we would like to highlight several specific limitations and potential areas for further investigation that could strengthen the conclusions and clinical applicability of this work.

Retrospective Study Design

The retrospective nature of the study introduces several potential biases. The decision to add glucocorticoids to the paravertebral blocks was not randomized, and the study period spanned from 2013 to 2021. This long duration could have been influenced by changes in clinical practice, such as increased awareness of opioid sparing and improved multimodal analgesia protocols over time. For example, a recent study demonstrated that changes in postoperative pain management protocols over a similar time frame significantly reduced opioid consumption across various surgical procedures.² This suggests that temporal trends in clinical practice could have contributed to the observed reduction in opioid use, independent of the glucocorticoid intervention.

Concurrent Use of Erector Spinae Plane Block (ESPB)

A significant proportion of patients in both groups (8 out of 44) received additional single-shot ESPBs. The study did not account for the potential additive or synergistic effects of ESPBs on pain management. Recent evidence suggests that ESPBs can provide effective analgesia for thoracic surgeries, and their concurrent use could have influenced the observed outcomes. For example, a study reported that ESPBs can provide comparable analgesia to thoracic epidural analgesia with fewer complications.³ Future studies should consider stratifying patients based on the use of additional regional blocks to better understand the isolated effects of glucocorticoids in paravertebral blocks.

Variability in Local Anesthetic Concentration and Infusion Rates

The study protocol involved continuous infusion of 0.2% ropivacaine at 5 mL/hr for both groups. However, the study did not account for variations in the concentration or infusion rates of local anesthetics, which could influence pain management outcomes. For instance, a recent meta-analysis showed that higher concentrations of local anesthetics can significantly enhance the duration and efficacy of peripheral nerve blocks.⁴ Future studies should standardize and report these parameters to ensure consistent and comparable results.

The study by Donham et al provides promising results on the use of perineural glucocorticoids in paravertebral blocks for pediatric Nuss procedure, demonstrating significant reductions in postoperative opioid consumption. However, the limitations highlighted above suggest the need for further investigation. We recommend larger, prospective, randomized controlled trials to validate these findings.

Disclosure

The author reports no conflicts of interest in this communication.

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