

[NM-243] Assessing Caudal Block Concentrations of Bupivacaine with and without the Addition of Intravenous Fentanyl on Postoperative Outcomes in Pediatric Patients: A Retrospective Review

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Background

Caudal blocks are a significant and efficacious aspect of pediatric anesthesia, especially in urologic and many general surgery cases. This type of regional anesthesia is common because it typically is not time consuming, has a high success rate, provides between 6-8 hours of post-operative pain control, and can be performed easily without the need for ultrasound guidance. The aim of this study was to determine if the concentration of bupivacaine or the addition of intravascular fentanyl affected the PACU discharge time.

Methods

After seeking approval from the Institutional Review Board of the institution, we performed a retrospective cohort study comparing the outcomes in pediatric patients who have received varying caudal concentrations with and without the addition of intravascular fentanyl. We reviewed charts of 849 consecutive patients who underwent hypospadias repair or circumcisions between August 1, 2010 and December 31, 2012; patients were placed in one of three groups, 0.125% Bupivacaine, 0.25% Bupivacaine, or one of these concentrations of Bupivacaine + i.v. Fentanyl intraoperatively; every group had epinephrine as an additive as well). Of the 849 total charts reviewed, 485 patients were excluded, and 364 sets of patient data were used (Figure 1).

Results

In comparing the three groups, Group 1 (0.125% bupivacaine), Group 2 (0.25% bupivacaine), and Group 3 (any concentration of bupivacaine + I.V. fentanyl), there was no statistical difference in PACU discharge time; PACU discharge time is defined as the time from arrival to the PACU to the time that the patient is evaluated and discharged from the PACU. Patients in Group 1 and Group 2 move their legs earlier than the combination group, however, the differences were not statistically significant ($p=.06$).

Conclusions

Our results revealed that there is no statistically significant difference between concentrations of Bupivacaine administered in a caudal block with regards to the outcome of PACU duration ($p = .16$). Overall, based on the retrospective cohort design, there is no difference in primary and secondary outcomes based on the concentration of bupivacaine, when administered at a volume of 1mL/kg. Thus, this warrants consideration for standardization of how we practice with regard to caudal blocks for circumcisions and hypospadias repairs. While many anesthesiologist believe that it is efficacious to use a higher concentration of Bupivacaine, or to administer intravenous fentanyl for these procedures, this study many dispute this belief as it does not appear to be beneficial.
