The Pudendal Nerve Block for Ambulatory Urology: The Old Is New Again

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Background

- Caudal epidural analgesia (CEA) is commonly used in pediatric penile surgeries, but its use comes with risks\textsuperscript{1-3}.

- Dorsal Penile Nerve block may distort local anatomy and provide inadequate analgesia to the ventral penis\textsuperscript{4}.

The pudendal nerve block (PNB) is an effective and durable analgesic alternative to CEA.
Objectives

1. Is PNB a safe analgesic option for pediatric penile surgeries?
2. Is PNB as effective as CEA in providing analgesia?
3. Is landmark-directed PNB as effective as ultrasound-guided PNB?
Methods

• Retrospective comparative effectiveness study using Seattle Children’s Hospital System for Daily Improvement

• Penile surgeries in patients under 5 years old performed at Ambulatory Surgery Center from 2015-2019

• Study Measures:
  • PACU pain scores
  • Anesthesia prep time
  • Morphine rescue rates
  • Emergence time
  • Length of recovery room stay
### Demographics

**SURGERIES PERFORMED**

<table>
<thead>
<tr>
<th></th>
<th>Circumcision, Hypospadias Repair, Buried Penis Repair +/- Scrotoplasty, Congenital Chordee Repair, Correction Penile Torsion/Angulation</th>
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</thead>
<tbody>
<tr>
<td>Protocol</td>
<td>1/1/2015 – 9/1/2019</td>
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<tr>
<td>Cohort (N)</td>
<td>CEA (746)</td>
</tr>
<tr>
<td>ASA 1 / 2 (%) (N)</td>
<td>68.5 / 31.3 (511 / 232)</td>
</tr>
<tr>
<td>Mean Age (yrs)</td>
<td>0.58</td>
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<tr>
<td>Mean Weight (kg)</td>
<td>10.46 (5.96-20.3)</td>
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<tr>
<td>Ethnicity</td>
<td>Non-Hispanic</td>
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<td></td>
<td>624 (83.7)</td>
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<td></td>
<td>137 (79.7)</td>
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<td></td>
<td>71 (87.7)</td>
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<tr>
<td>Local Anesthetic Dosing</td>
<td>0.2% Ropivacaine 0.5-1 ml/kg</td>
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<tr>
<td>Standard PACU Analgesic Protocol</td>
<td>Acetaminophen 15mg/kg PO (max 650mg) (PRN)</td>
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- 999 patients
  - CEA 75%
  - US PNB 17%
  - PNB 8%

- Mean age ~8 months
  - 18 months for PNB
Outcome Measure | CEA (746) | US - PNB (172) | PNB (81)
--- | --- | --- | ---
Mean of PACU Maximum Pain Score (0-10) | 2.49 | 2.98 | 2.16
Limitations & Conclusions

- Non-randomized retrospective study
- Learning curve included in early data
- PNB non-inferior to CEA for analgesia in pediatric penile surgery
- Landmark-directed PNB is as effective as US-guided PNB
- PNB may be preferred due to its lower risk profile