Pudendal nerve blocks in pediatric urologic procedures

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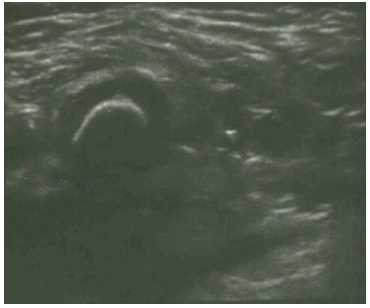
Background

- Pediatric Urologic procedures are the most common surgeries performed in the US
- Retrospective data was collected comparing groups receiving
  - Pudendal nerve block (PNB) versus dorsal penile block (LAI) in circumcision
  - PNB versus caudal epidural (CA) in hypospadias repair
- Variables measured included:
  - age, BMI, intraop opioid, time to discharge from PACU, and patients opioid free during perioperative period
- Descriptive statistics were gathered
- STATA 14.0
- Chi square and Fisher exact testing



Results

- PNB versus LAI for Circumcisions
  - PNB group required less intraop Fentanyl
  - PNB group had significantly more patients that remained opioid free intra-operatively and post-operatively
- PNB versus CA for hypospadias repair
  - Fewer measureable data points with statistical significance
  - Mean anesthesia time and surgical time longer in PNB group
  - CA group required fewer morphine equivalents intraoperatively

Data

VARIABLE	Pudendal (n=19)	LAI (n=32)	P-Value
[1]Age	2.55 (0.99-4.11)	5.73 (3.95-7.52)	0.02
BMI	17.36 (16.50-18.24)	18.16 (16.89-19.42)	0.37
ASA PS 1/2	94.74 (n=18)	100 (n=32)	0.40
Anesthesia time (min)	70.21 (63.43-76.99)	61.125 (55.68-66.57)	0.04
Surgery time (min)	26.00 (21.28-30.72)	31.25 (26.80-35.70)	0.12
Intraoperative fentanyl mcg.Kg^{-1}	0.34 (0.05-0.63)	1.33 (1.01-1.64)	0.0001
Intraoperative opioid free (%)	63.16 (n=12)	9.38 (n=3)	<0.0001
PACU time (min)	99.12 (75.08-123.13)	90.91 (71.76-110.05)	0.59
Postoperative ME.kg^{-1}	0.07 (0.006-0.152)	0.01 (0.001-0.020	0.04
[2]Perioperative opioid free (%)	52.63 (n=10)	9.38 (n=3)	0.002

Table 1: Comparison of Pudendal versus LAI for circumcisions, re-circumcisions and meatoplasty.

[1]Age was not found to be associated with intraoperative or postoperative narcotic consumption

[2]Perioperative period duration up to 6hrs post PACU entry time

VARIABLE	Pudendal (n=19)	Caudal (n=32)	P-Value
Age	2.01 (0.56-3.45)	1.02 (0.82-1.22)	0.08
BMI	18.21 (15.97-20.46)	19.99 (15.13-24.86)	0.58
ASA PS 1/2	100% (n=19)	100% (n=32)	1.00
Anesthesia time (min)	188.16 (141.04-235.38)	119.40 (94.14-144.67)	0.01
Surgery time (min)	136.26 (95.66-176.86)	79.31 (56.98-101.64)	0.01
Intraoperative Fentanyl (mcg.kg^{-1})	1.39 (0.83-1.96)	0.89 (0.57-1.22)	0.10
Intraoperative opioid free (%)	26.32 (n=5)	34.38 (n=11)	0.80
PACU time (min)	103.05 (72.66-133.44)	88.69 (73.47-103.90)	0.33
Postoperative ME.kg^{-1}	0.26 (0.08-0.43)	0.04 (0.01-0.10)	0.005
[2]Perioperative opioid free (%)	15.79 (n=3)	25.0 (n=8)	051

Table 2: Hypospadias repair, chorde repair, penoplasty: Pudendal versus Caudal Regional anesthesia

Conclusions

- Pudendal nerve block may be superior to local anesthetic infiltration (dorsal penile block) for circumcisions and other outpatient pediatric GU procedures allowing for greater percentage of narcotic sparing anesthetics
- Pudendal nerve block may not be inferior to Caudal epidural anesthesia in hypospadias repairs allowing for a reasonable alternative strategy for perioperative analgesia
- Ultrasound guided regional techniques can be used to provide effective & safe perioperative care

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