

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**¹⁻³.
- Dorsal Penile Nerve block may distort local anatomy and provide inadequate analgesia to the ventral penis⁴.

1. Kim et al. *Anesthesia*. 2016. 71(7):773-8.
2. Splinter et al. *Paediatr. Anaesth.* 2019. 29(7):760-767.
3. Morray et al. *Anesthesiology*. 2000. 93(1):6-14.
4. Chan et al. *Urology*. 2018. 118:164-171.

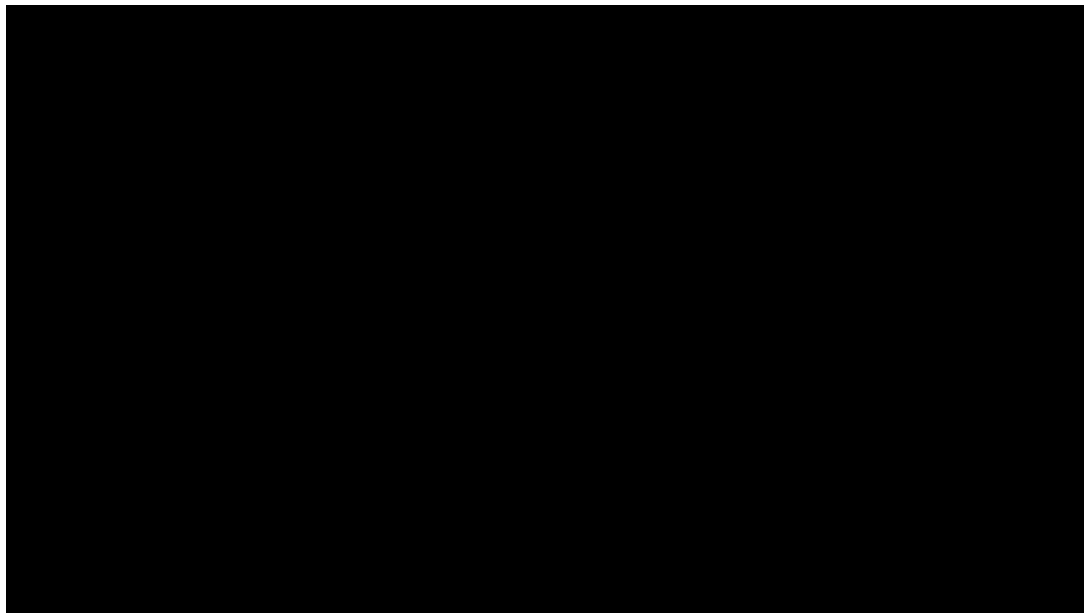


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Pudendal Nerve Block

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



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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?



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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



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Demographics

SURGERIES PERFORMED	Circumcision, Hypospadias Repair, Buried Penis Repair +/- Scrotoplasty, Congenital Chordee Repair, Correction Penile Torsion/Angulation		
Protocol	1/1/2015 – 9/1/2019		
Cohort (N)	CEA (746)	US - PNB (172)	PNB (81)
ASA 1 / 2 (%); (N)	68.5 /31.3 (511 /232)	71.5 / 28.5 (123 / 49)	71.6 / 28.4 (58 / 23)
Mean Age (yrs)	0.58	0.67	1.52
Mean Weight (kg)	10.46 (5.96-20.3)	10.51 (6.08-27.2)	12.78 (7.45-21.1)
Ethnicity			
Non-Hispanic	624 (83.7)	137 (79.7)	71 (87.7)
Hispanic	86 (11.5)	15 (8.7)	4 (4.9)
Other	36 (4.8)	20 (11.6)	6 (7.4)
Local Anesthetic Dosing	0.2% Ropivacaine 0.5-1 ml/kg	0.2-0.5% Ropivacaine 0.2-0.3 ml/kg	
Standard PACU Analgesic Protocol	Acetaminophen 15mg/kg PO (max 650mg) (PRN) Morphine 0.035 – 0.05 mg/kg IV (PRN)		

- **999 patients**
 - CEA 75%
 - US PNB 17%
 - PNB 8%
- **Mean age ~8 months**
 - 18 months for PNB

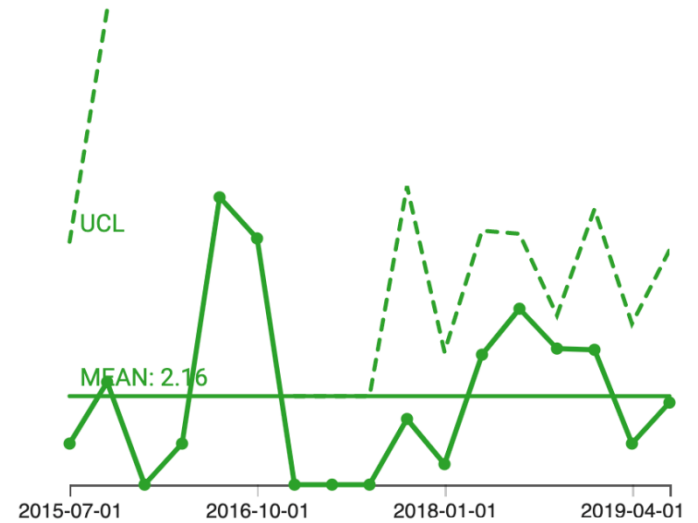
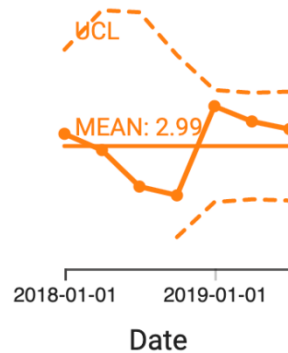
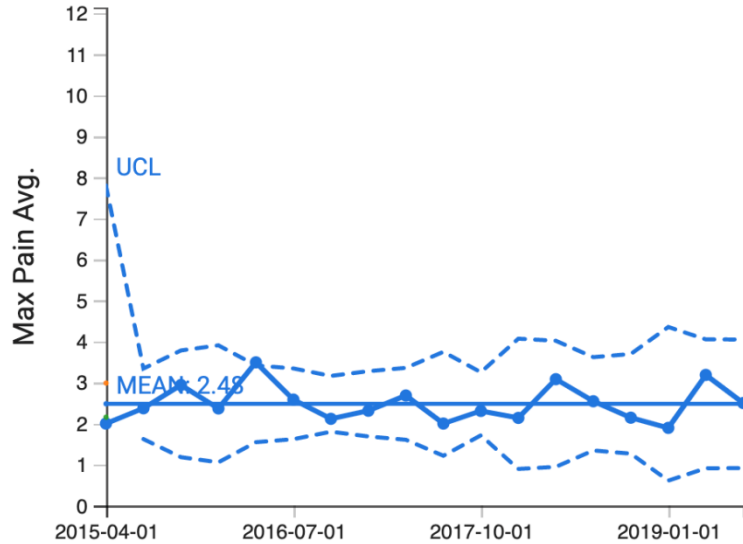


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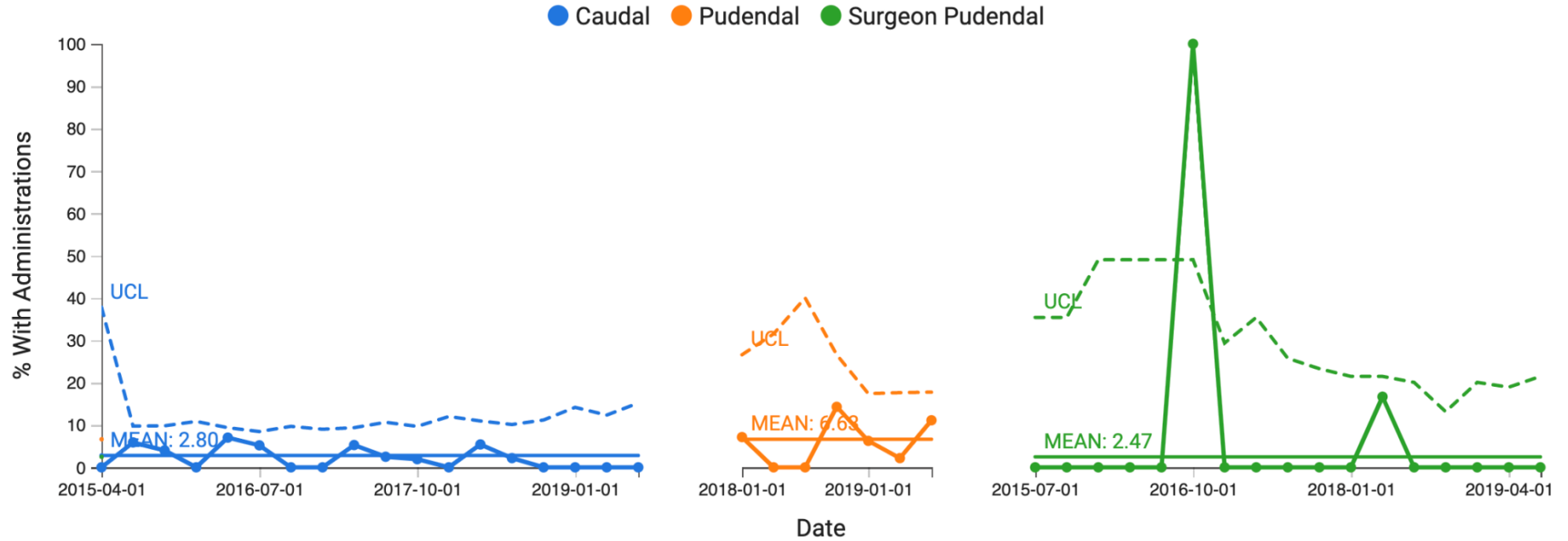
Pain Score (0-10) X-bar Chart

● Caudal ● Pudendal ● Surgeon Pudendal

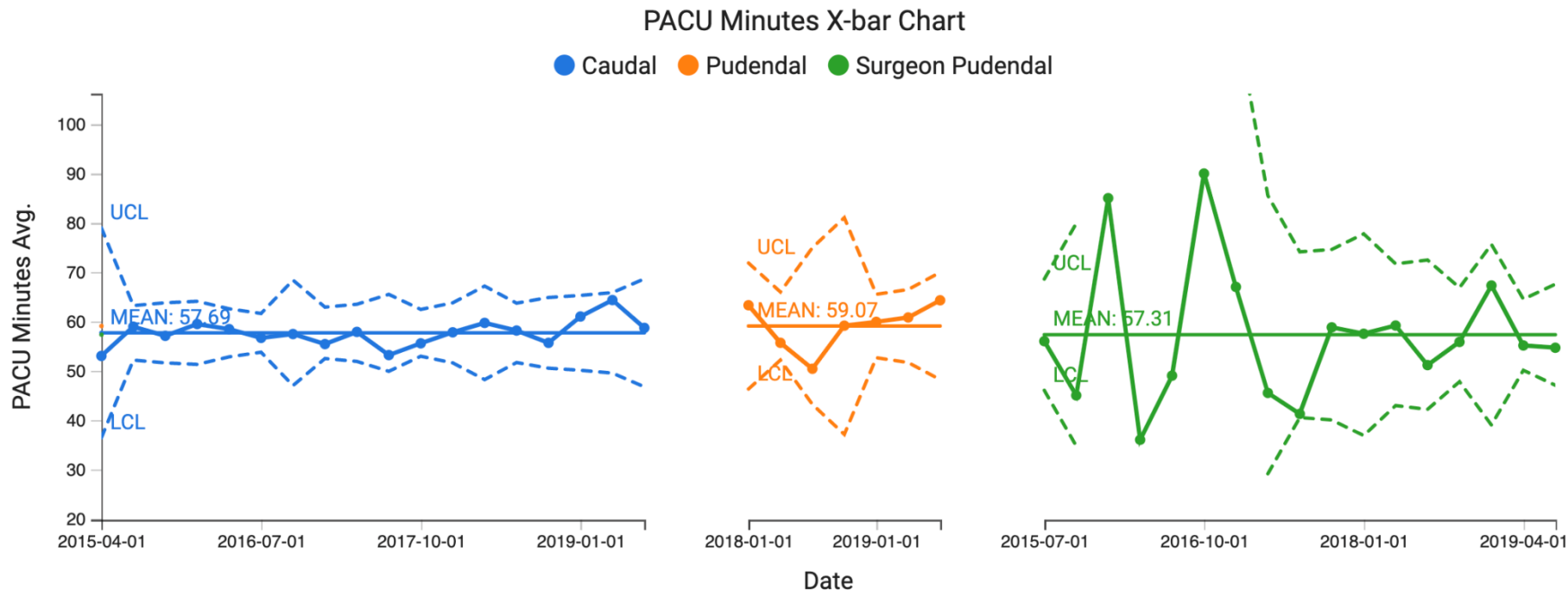


Outcome Measure	CEA (746)	US - PNB (172)	PNB (81)
Mean of PACU Maximum Pain Score (0-10)	2.49	2.98	2.16

Percent of Cases with Rescue Morphine - P Chart



Outcome Measure	CEA (746)	US - PNB (172)	PNB (81)
PACU Morphine Administration (%)	2.82	6.98	2.47



Outcome Measure	CEA (746)	US - PNB (172)	PNB (81)
PACU Length of Stay (Minutes)	57.79	59.14	57.31

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



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