

INTRODUCTION

Congenital adrenal hyperplasia (CAH) results in varying virilization of genetically female (XX) infants, often necessitating reconstructive surgery to restore functional female anatomy and near-normal appearing external genitalia.¹

Caudal anesthesia (CA) has been used historically for post-operative analgesia and provides full dermatomal analgesia, but its use is limited by:^{2,4-5}

- Shorter duration (single injection)
- Motor weakness
- Urinary retention
- Neuraxial contraindications
- Hemodynamic considerations
- Institutional / surgeon preference

Research supports pudendal nerve block (PNB) as superior to CA for hypospadias repair⁴⁻⁵

- Provides incomplete dermatomal coverage for more extensive procedures

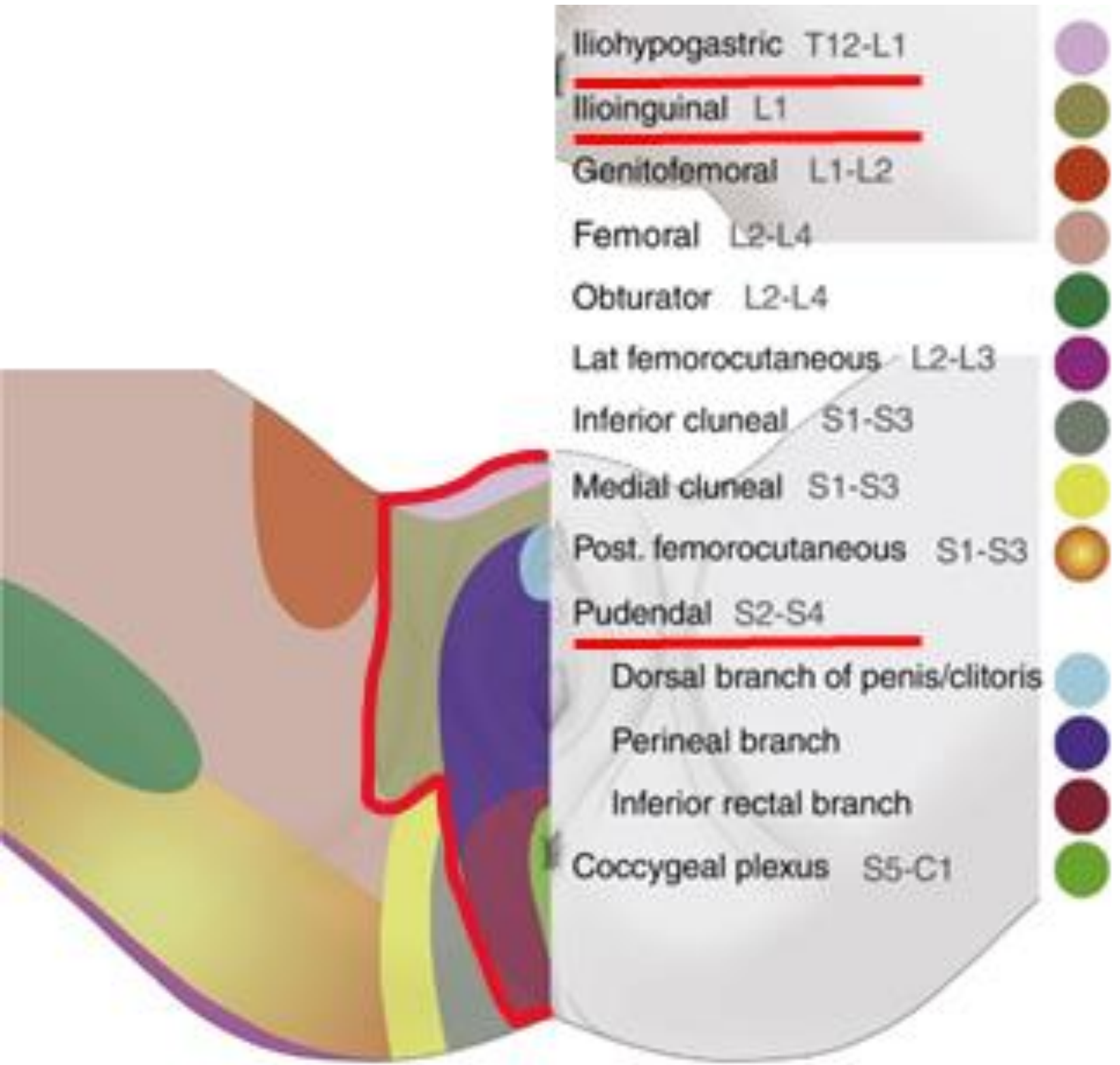


Figure 1: Surgical Dermatomes. Adapted from 'Regional anesthesia guided by ultrasound in the pudendal nerve territory,' by M. F. Rojas-Gómez et al., 2017, Revista Colombiana de Anestesiología, 45(3), 200-209.

The Novel Application of Pudendal and Ilioinguinal Nerve Blocks in Pediatric Vaginoplasty: A Case Report

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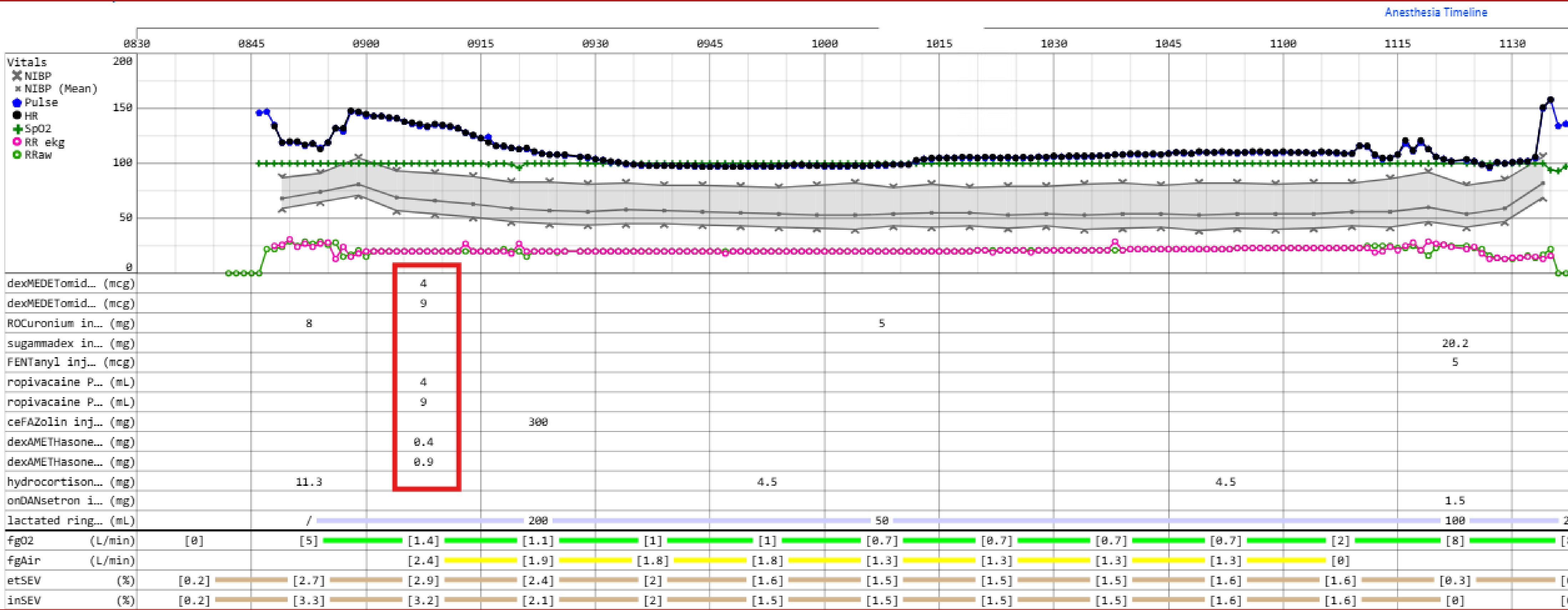


Figure 2: Post-induction nerve blocks were performed at the highlighted time after safety time-out, including max toxic dose based on weight. Bilateral pudendal nerve blocks were dosed with a total 9 mL of ropivacaine 0.2%, 9 mcg dexmedetomidine, and 0.9 mg dexamethasone divided equally per side. Bilateral ilioinguinal nerve blocks were dosed with a total 4 mL of ropivacaine 0.2%, 4 mcg dexmedetomidine, and 0.4 mg dexamethasone divided equally per side. No complications were noted.

PATIENT

- 14-month-old
- 10.1 kg female
- Salt-wasting CAH
- Prader Stage II anatomy (clitoromegaly and posterior labial fusion)
- Scheduled for clitoroplasty & labioplasty

INTRA-OP

- Uneventful standard mask induction & intubation
- 9 minutes for ultrasound-guided, bilateral trans-perineal pudendal and ilioinguinal nerve blocks
- Hemodynamically stable with stress dose steroids
- Fentanyl 5 mcg on emergence
- 106-minute surgery

POST-OP

- APAP 15 mg/kg q6h
- No rescue analgesics in PACU or as inpatient
- Standard "mermaid wrap"
- FLACC score 0 throughout entire hospitalization
- POD#2 discharge without opioid Rx
- Appropriate recovery at 2-week f/u



DISCUSSION

Surgeon preference, a postoperative immobilization dressing, and known side effects limit use of single injection & continuous CA.

Scant literature exists for peripheral nerve blocks as alternatives to neuraxial for reconstructive vaginoplasties in adults and pediatrics.

After a combined bilateral US-guided pudendal and ilioinguinal nerve block technique, our patient showed remarkable intraoperative hemodynamic stability, good postop analgesia, and an opioid-free recovery.

Consider future prospective trials and non-inferiority studies with combined pudendal-ilioinguinal technique in both adults and pediatrics with varying stages of disease.

REFERENCES

