Caudal epidural catheters for postoperative analgesia in a developing country: A case series.

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Introduction

- Advanced post-operative pain management techniques are unavailable in many developing nations, due to limited physical and financial resources, absent or outdated technology, and lack of trained providers.[1]
- Voluntary medical services from abroad (VMSA) provide an opportunity for complex surgical care in regions of limited resources.[2]
- Many surgical patients treated through VMSA would benefit from indwelling peripheral or neuraxial catheters.
- Research in the field is limited, with a single report of peripheral nerve catheter use, and none reporting neuraxial catheter placement.[3]

Methods

- A retrospective case series of three patients undergoing feminizing genitoplasty and vaginal reconstruction in a hospital in Costa Rica (Hospital Nacional de Ninos, Caja Costarricense del Seguro Social).
- Caudal epidural catheters were utilized intra and post-operatively using an AmbIT® home infusion pump (Summit Medical Products, Sandy, Utah).
- Efficacy in postoperative pain control was reviewed.

Table 1: Clinical Characteristics of the Study Cohort

Age & weight	Inhaled anesthetic	Fentanyl Dose	Epidural bolus	Epidural infusion rate	Block Duration	Comments
7 years, 33 kg	Sevoflurane 2-2.5%	50µg	20 mL 0.25% bupivacaine + clonidine (1 µg/kg)	8 mL/hr 0.125% bupivacaine + clonidine 0.5 µg/mL	56 hours	Epidural fentanyl 50 µg in the OR. Infusion turned off briefly overnight due to motor blockade.
11 years, 58 kg	Sevoflurane 2-2.5%	50µg	15 mL 0.5% levo-bupivacaine + clonidine (1 µg/kg)	10 mL/hr 0.125% bupivacaine + clonidine 0.5 µg/mL	52 hours	Bag ran out; severe pain, catherer rebolused and infusion restarted.
4 years, 18 kg	Sevoflurane 1.5-2%	35µg	8 mL 0.25% bupivacaine + clonidine (1 µg/kg) and fentanyl (2 µg/kg)	5 mL/hr 0.125% bupivacaine + clonidine 0.5 µg/mL	60 hours	Boluses every 1 hour in the OR as infusion pump was not available until PACU.

Results

- All patients had adequate analgesia in the immediate post-operative period.
- Catheter duration was between 52-60 hours.
- One patient developed transient muscle weakness which improved with a reduced infusion rate.
- No other complications noted.

Discussion

- Safe, efficacious, and long-lasting neuraxial pain control was provided for complex pelvic surgery, despite a resource-limited setting.
- Future endeavors should focus on capacity building within local institutions so as provide services independent of VMSA.

Works Cited

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