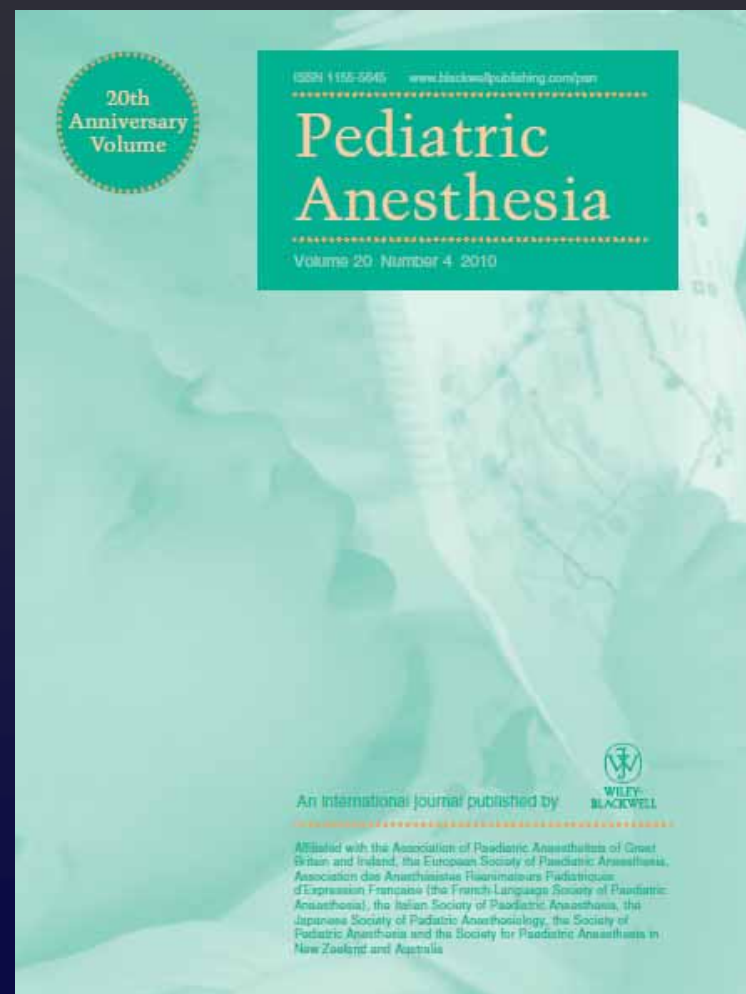


Editors' pick: *Pediatric Anesthesia*



Conflicts

- Section Editor: *Pediatric Anesthesia*
- Associate Editor: *Anesthesiology*
- Editorial Consultant: *Anesthesia and Analgesia*

Theme issues:

- The Pediatric Airway: *July 2009*
- Ethics: *October 2009*
- TIVA in children: *March 2010*

Best in the theme issues:

Pediatric Anesthesia

Pediatric Anesthesia 2010 20: 211–222

doi:10.1111/j.1460-9592.2009.03112.x

Review article

Overview of total intravenous anesthesia in children

VAITHIANADAN MANI MBChB FRCA* AND NEIL S.
MORTON MD FRCA FRCPC FFPMRCA†

Best editorial:

Pediatric Anesthesia

Pediatric Anesthesia 2009 19: 1147–1151

doi:10.1111/j.1460-9592.2009.03131.x

Editorial

Evaluation of intraoperative memory and postoperative behavior in children: are we really measuring what we intend to measure?

URSULA LOPEZ DIPL PSYCH* AND WALID HABRE MD PhD†

Assessing a psychometric tool

- Validity: something measures what it purports to measure
 - Face validity
 - Validity of content
 - Validity of criterion
 - Validity of construct
- Reliability: repeatability under identical conditions
 - Inter-rater reliability
 - Test-retest reliability
 - Parallel-forms reliability
 - Internal consistency reliability

Tools we use

- Awareness:
 - “Brice interview”
- Behavior change:
 - Posthospitalization Behavior Questionnaire
- *Implicit memory*
- *Pre-op anxiety*
- *Emergence Delirium*
- *Pain*
- *Sedation*

Outcome measures in pediatric research

- A study is only as good as its outcome measures
- Adult measures may not be applicable to children
- Anesthesia is a “special situation” limiting the relevance for measures that *are* validated in children in the non operative setting
- Just because it has been used before does not mean it is a good outcome measure!

Editorial

Hypotension during anesthesia before surgery

MICHAEL R J SURY **FRCA*** AND MICHAEL WILLIAM
BROADHEAD **MRCP FRCP PhD†**

How do pediatric anesthesiologists define intraoperative hypotension?

OLUBUKOLA O. NAFIU MD FRCA, TERRI VOEPEL-LEWIS MSN RN, MICHELLE MORRIS MS, WILSON T. CHIMBIRA MD FRCA, SHOBHA MALVIYA MD, PAUL I. REYNOLDS MD AND KEVIN K. TREMPER MD PHD

Department of Anesthesiology, University of Michigan, Ann Arbor, MI, USA

Incidence and risk factors for preincision hypotension in a noncardiac pediatric surgical population

OLUBUKOLA O. NAFIU MD FRCA, SACHIN KHETERPAL MD MBA, MICHELLE MORRIS MS, PAUL I. REYNOLDS MD, SHOBHA MALVIYA MD AND KEVIN K. TREMPER MD PHD

Best original paper I:

Pediatric Anesthesia

Pediatric Anesthesia 2010 20: 119–125

doi:10.1111/j.1460-9592.2009.03187.x

APA national audit of pediatric opioid infusions

NEIL S. MORTON MD, FRCA, FRCPCH, FPPMRCA* AND AGATA
ERRERA MBChB, FANZCA†

**Pediatric Anesthesia & Pain Management and †Fellow in Pediatric Anesthesia, Royal Hospital
for Sick Children, Glasgow, Scotland*

- Aim: determine the incidence, nature and severity of serious clinical incidents associated with opioid infusion, PCA and nurse controlled analgesia in children aged 0-18 years.
- 18 centres in the UK June 2007 to November 2008

- Serious clinical incidents
 - Cardiac/respiratory arrest
 - Resp depression requiring naloxone
 - PONV or pruritis requiring cessation of technique
 - Drug error/pump malfunction
 - Myoclonic jerking
 - Urinary retention
- Grade 1: death or permanent harm
- Grade 2: harm but full recovery, intervention required
- Grade 3: only potential harm

	<1mo	1mo-1yr	1-8 yr	>8yr	Total
PCA	3	13	496	4553	5065
NCA	236	912	2053	505	3706
Infusion	105	458	884	508	1955
Total	344	1383	3433	5566	10726

46 serious clinical incidents

Grade 1	1	1:10,000
Grade 2	28	1:383
Grade 3	17	1:631

- 2.5 kg neonate for resection of large naevus
- NCA post op ~ 15 mcg/kg/hr morphine
- @ 37 hours post op cardiorespiratory arrest, aspiration, 2 weeks in ICU, long term neurobehavioural issues
- MRI brain: changes c/w neurocutaneous melanosis

- Grade 2
 - 14 respiratory depression
 - 5 PONV
 - 5 Pruritis
 - 4 Urinary retention
- Grade 3
 - 17 drug errors

14 cases of respiratory depression

- All were either very young or had significant co-morbidity
- Half occurred within 1 hour of starting
- Several had concurrent sedatives

17 cases of drug error

- All from the same institution

Take home message

- Opioid infusions safe (1:10,000)
- Higher risk
 - Young/comorbidity/concurrent sedatives

Best original paper II:

Pediatric Anesthesia

Pediatric Anesthesia 2010 20: 343–349

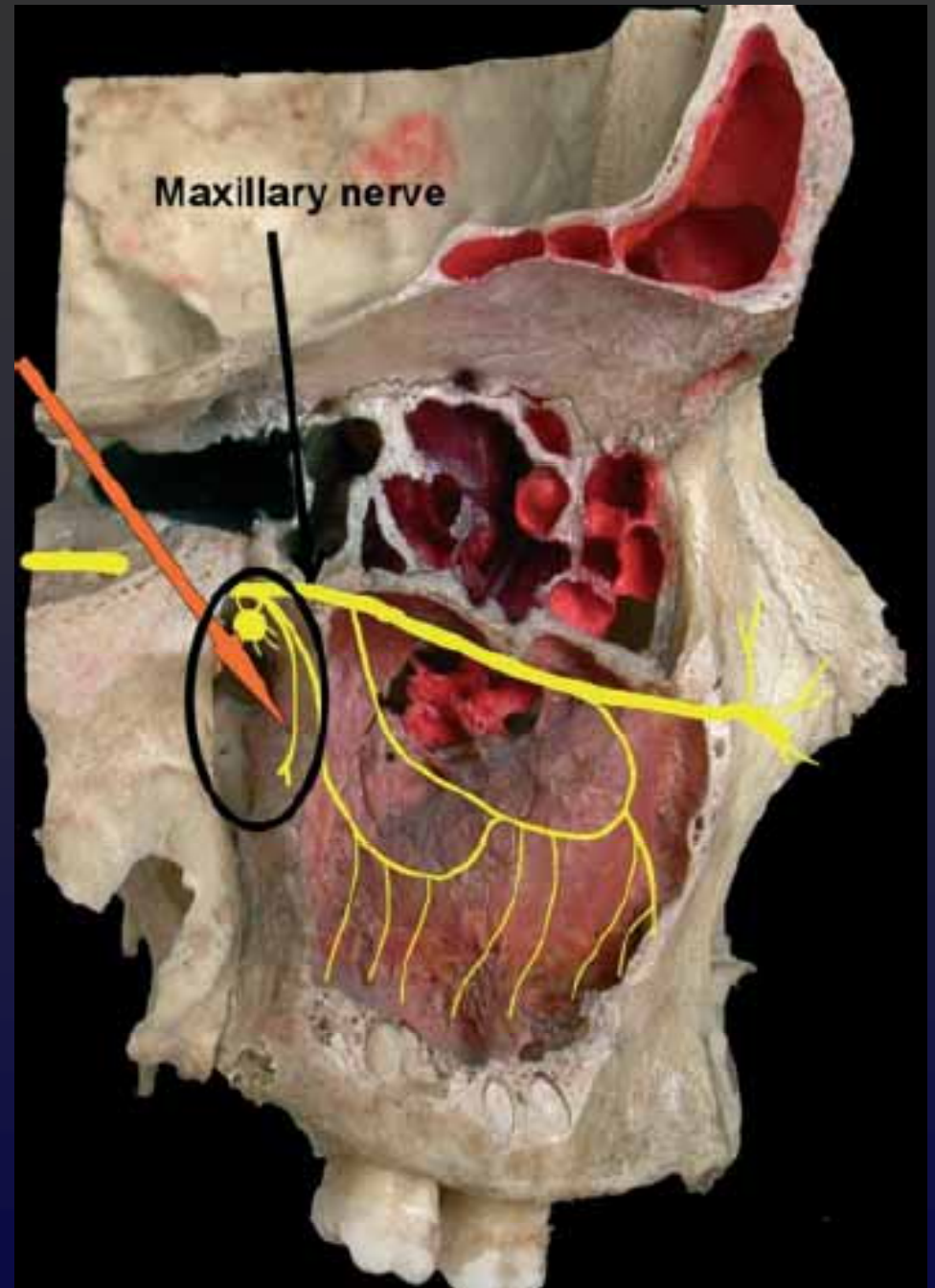
doi:10.1111/j.1460-9592.2010.03262.x

A new approach for peri-operative analgesia of cleft palate repair in infants: the bilateral suprazygomatic maxillary nerve block

MALCIE MESNIL MD^{*1}, CHRISTOPHE DADURE MD, MSc^{*1},
GUILLAUME CAPTIER MD, MSc[†], OLIVIER RAUX MD, MSc^{*},
ALAIN ROCHETTE MD^{*}, NANCY CANAUD MD^{*}, MAGALI
SAUTER MD^{*} AND XAVIER CAPDEVILA MD, PhD^{*}

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Pterygopalatine fossa





- 33 children
 - 15 required intra-op opioids
 - 6 required IV nalbuphine post op
 - Better analgesia, less use of opioid and faster recovery than historical controls

Take home message

- Promising new block for cleft palate repair

Best original paper III:

Pediatric Anesthesia

Pediatric Anesthesia 2009 19: 844–847

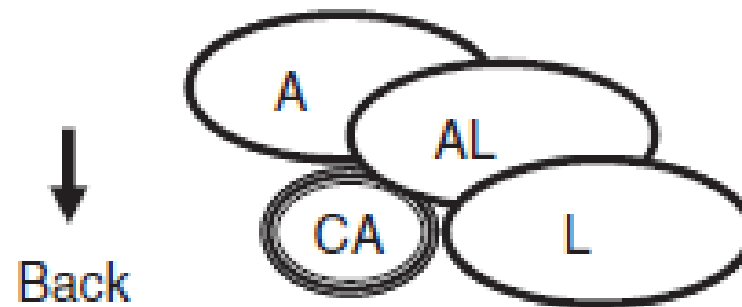
doi:10.1111/j.1460-9592.2009.03111.x

Rotation of the head might not be recommended for internal jugular puncture in infants and children

TOSHIMI ARAI MD, YOSHIFUMI MATSUDA MD, KYOKO KOIZUKA MD AND ASAKO YASUOKA MD

Department of Anesthesiology, Gunma Children's Medical Center, Shibukawa, Japan

- 62 children (11 infants)
- Head forward
- Head 45° to left
- Ultrasound



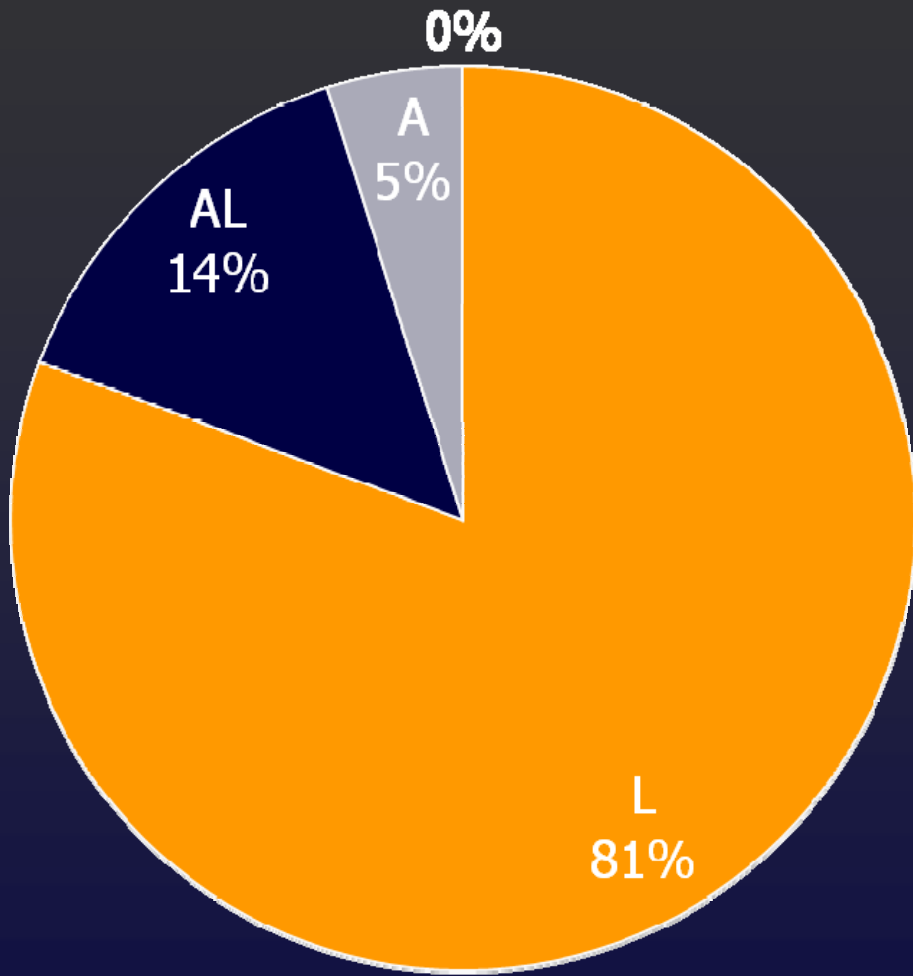
The relationship between right IJV and right CA.

A: The right IJV was completely overlapping the CA.

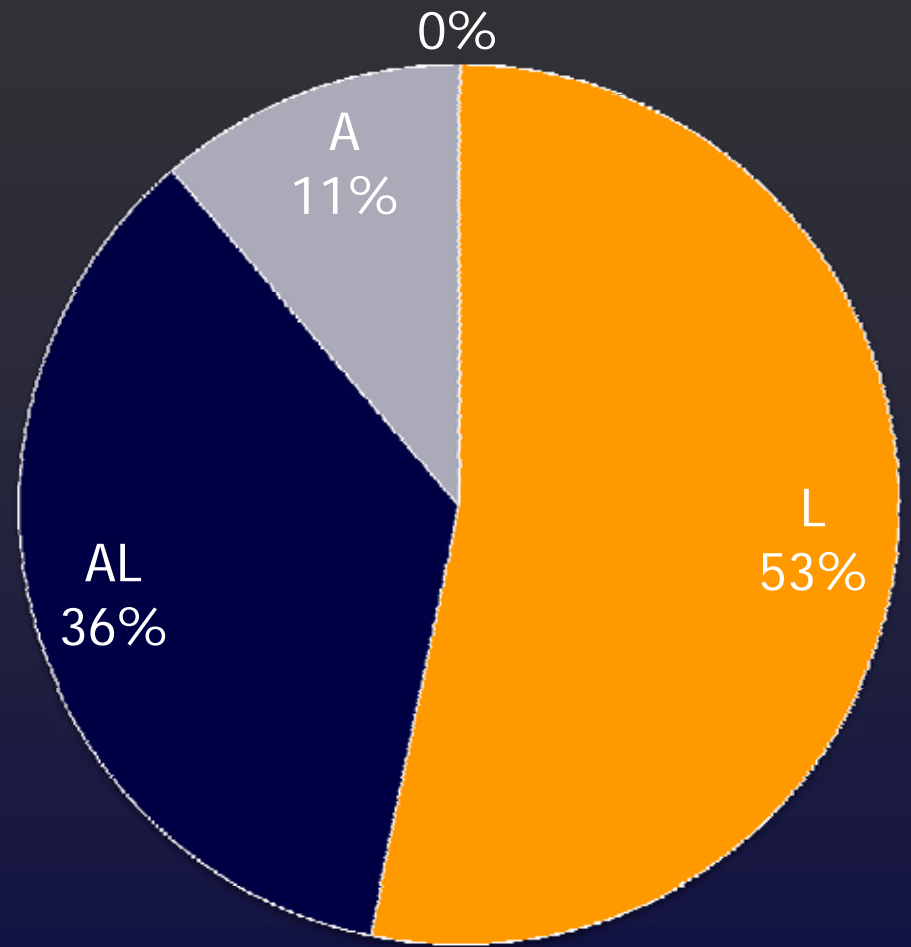
AL: The right IJV was partially covering the CA.

L: The right IJV was alongside the CA.

Midline



Head Turned Left



Take home message

- Try not to turn the head when putting in an IJ line

Best original paper IV:

Pediatric Anesthesia

Pediatric Anesthesia 2010 20: 7–18

doi:10.1111/j.1460-9592.2009.03174.x

Pharmacokinetic–pharmacodynamic modeling of the hypotensive effect of remifentanyl in infants undergoing cranioplasty

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WAI JOHNN SAM PhD‡ AND DAVID R. DROVER MD§

*Postdoctoral Fellow, Department of Pharmaceutical Biosciences, Uppsala University, Uppsala, Sweden, †Professor, Departments of Anesthesia and Pediatrics, ‡Postdoctoral Fellow and §Associate Professor, Department of Anesthesia, Stanford University School of Medicine, Stanford, CA, USA

- Aim: describe the PKPD model for hypotension with remifentanyl in infants
- 7 infants for cranioplasty surgery, 77 samples
- Analysis with NONMEM
- Effect compartment and E_{\max} sigmoidal model linked to a 2 compartment PK model
 - Steep sigmoid curve
 - Rapid mean effect time
 - EC_{50} 17.1 ng/ml

Take home message

- 10 ng/ml gives ~ 30% reduction in MAP
- Small increases from there – rapid and large fall in MAP
- With sophisticated modelling, collaboration and pooling data useful findings from small numbers of subjects

