Anaesthetic Update -
A Toolkit for GP Anaesthetists

RDN – Continuing Education
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Milsons Point
Purpose

Review recent advances in anaesthesia which may be of interest to rural GP anaesthetists
Airway Management

- Intubation
- Laryngeal mask
- Proseal
Difficult Intubation

- **Predictors**
  - Mouth opening – Mallampati scale
  - Neck extension – 30° said to be magic number
  - Thyro-mental distance – 6cm said to be magic number
  - Caudal larynx syndrome
AMA's new President
NEW TEAM TAKES OVER - Page 3

Inside
Bushfire experience exposes fund-holding flaws - page 13
Rev your engines and get stimulated - page 19
War on obesity: Parliamentary committee joins up - pages 23, 24 & 25
Bushfire experience exposes fund-holding flaws - page 13

Rev your engines and get stimulated - page 19

War on obesity: Parliamentary committee joins up - pages 23, 24 & 25
Obesity

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Issues with Obesity

- Difficult venous access
- Difficult mag and mask ventilation
  - Aspiration risk
  - Sux or Rocuronium
- Intubation rarely an issue
- Rapid awakening desirable
  - Desflurane/remifentanil/propofol
  - Hypnosis monitor
- Minimise muscle relaxants at end of case
Obesity Postoperatively

- Hypoxia
- CC impacts upon FRC - venous admixture
- Minimally invasive surgery >> epidurals
- Rapid awakening
  - Appropriate drugs
  - Minimise muscle relaxants @ end of case
- Non invasive or invasive ventilation post op?
Aids to difficult intubation

- The usual
  - Optimal position
  - Assistance
  - Bougie
  - Blades
- In a difficult situation don't try something new
- DO WHAT YOU NORMALLY DO
Aids to difficult intubation

- Direct vision techniques better than blind
- Blind
  - Classic LMA
  - Fast trach laryngeal mask
  - Light wand
- Direct vision
  - Bullard
  - Video laryngoscope – glidescope, storz (website)
  - FOI – gold standard but really elective
Failed intubation

- Oxygenation is main priority
- Need to prevent awareness
- Laryngeal mask is first failed airway device
- Proseal is an alternative
- Cricothyroidotomy as last resort
- Is case urgent or elective?
Muscle Relaxants

- Suxamethonium still gold standard for RSI
- Attempts to decrease potency to increase speed of onset (vecuronium vs. rocuronium) have not matched suxamethonium
- Risk of anaphylaxis increased (rocuronium)
- Use of cyclodextrins to immediately reverse muscle relaxants
Sugammadex

- Cyclodextrin designed to bind rocuronium

**Advantages**
- More effective than neostigmine
- Can reverse at any time (with sufficient dose)

**Disadvantages**
- Cost. Full dose roc (1.2mg/kg) for RSI in adult requires 16mg/kg of sugammadex if failed intubation.
- ~ $1,600
Failed Airway

- Can't intubate can't ventilate = 1:10,000 adults
  - These patients are fairly obvious
  - But 1980's data
  - Dentition, LMA, feminisation of workforce
- 1:2,000 prolonged duration of suxamethonium
- ie. You will kill 1 in 20 million patients with this combination
- Roc/sugammadex eliminates this risk
TIVA vs. Inhalational

- TIVA advantages
  - Less nausea and vomiting
  - Less pollution
  - Rapid clear headed recovery

- TIVA disadvantages
  - Cost – less of a difference now
  - Monitoring – though awareness monitoring 'routine'
  - Toxicity of long chain triglyceride emulsions
TIVA vs. Inhalational

Inhalational Advantages

- Historical gold standard – most experience
- Easier to use
- Easier titration with spontaneous ventilation
- Relatively rapid awakening – kept pace with TIVA
- Preconditioning effects on the heart

Inhalational Disadvantages

- Nausea and vomiting
- Pollution
Nitrous Oxide – RIP

- Old drug that needs to be retired
  - Improved pharmacology of new drugs
  - Academic agenda
- ENIGMA study
  - > 2000 high risk patients
  - Nitrous associated with worse recovery, one day stay longer in hospital, greater N&V
- No FANZCA trainee currently uses nitrous oxide (except children)
High Risk Surgery

- Guidelines divide this into
  - Low, medium and high risk surgery
  - Low medium and high risk patients
- Emergency is the other factor
- It's the medium/medium which is problematic
- With emergencies and high risk patients
  - Heart rate control with beta blockers
  - Academic agenda
Nerve Blocks

- Have become more popular in lieu of the decline in epidural blockade
- Traditionally nerve stimulators have been used
- Ultrasound guidance has become standard of care for upper limb blocks
Local Anaesthetics

- No spectacular advances
- Ropivacaine and L-bupivacaine
- Lower toxicity than racemic bupivacaine
- But also less potent
- Probably less cardiotoxicity for given LA effect on bolus injection
Spinal standard for elective caesarean section

Evidence for fluid loading rather poor

Rather infusion of vasopressors (NOT ephedrine) is the preferred method to maintain BP

Metaraminol 500mcg/ml at 20-30mls per hour

Stop if BP is above pre spinal level

Restart if BP below pre spinal level or if nauseated
Analgesic Controversies

- COX-2 analgesics
  - IHD
  - Renal failure
  - One dose OK? Other nephrotoxins
- Tramadol
  - N&V
  - Epilepsy
  - Serotinergic syndrome
- IV Paracetamol
Post operative N & V

- Things we can influence vs patient factors
  - Choice of anaesthetic
    - Total IV better than gaseous (at least omit nitrous)
  - Choice of analgesic
    - Opioids and tramadol problematic
    - 5HT-3 antagonists established
    - Steroids effective and indicated in high risk cases
  - Prolonged QT syndrome with droperidol
Anaesthetic Machine

- Move towards electronic machines
- Advantages in accuracy, monitoring, record keeping
- Reliability and ease of use problems have largely been resolved
- Cost is main issue
Syringe Swaps

- Rare but devastating problem
- Strapping ampuoles to syringes (old practice)
- Labels good but not enough
  - Too complex cognitively
- Minimise bolus injections (eg. antibiotics)
- Red syringes for muscle relaxants
  - Only 5ml
  - Have been swaps despite this
- Bar code systems