The Bleeding Tonsil

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History

• 7 year old girl : Aimee
• Bleed 6 days after elective tonsillectomy for recurrent tonsillitis
• Mother recognised symptom ‘swallowing’
• Taken to hospital
Treatment

• Admitted to ward at 11 pm
• Coughing a lot, spitting red blood with clots
• HR 125/min, BP 113/72, CRT < 2 sec
• Conservative :
  – Hydrogen peroxide gurgles
  – Fluid resuscitation
  – Bloods : FBC, U&E, CRP, clotting, G&S (Hb 113)
  – Reviewed several times
• 4 am decision operative intervention
Preoperative assessment

• 7 yrs old, 28 kg, ASA 1
• Specific risks discussed: sore throat, PONV, dental damage, blood aspiration
• Consent for blood transfusion
• Plan: rapid sequence induction with propofol and rocuronium
On arrival

- Pale girl
- Didn’t speak
- Vital signs:
  - Sat 98%
  - HR 130/min
  - BP 103/49mmHg
Induction

• Sitting up 45 degrees
• Propofol 80 mg
• Mum left
• Oxygenate
• Rocuronium 25 mg
• Can’t ventilate
Differential diagnosis

• Try again
• Equipment problem: blocked anaesthetic circuit
• Bronchospasm
• Foreign body: blood clot
Foreign Body

- Laryngoscopy: grd 1, no abnormalities
- Intubate: RAE 6.5 uncuffed
- Can’t ventilate
- Suction through tube
- Can’t ventilate
- Extubate
- Suction trachea
- Reintubate
- Can’t ventilate: very high airway pressures
Clot in trachea

• Called team into anaesthetic room
• Extra help
New Plan

• Return to spontaneous ventilation to reduce risk of barotrauma
• Lavage and suction through the fibreoptic bronchoscope
• Lighten anaesthesia to allow cough reflex to return
• Prepare rigid bronchoscope
• Call for extra help from a colleague
Clot in trachea

- Reversed sugammadex 300 mg (10mg/kg)
- Anaesthesia maintained with sevoflurane
- Turned left lateral because of ongoing haemorrhage
- 18 G cannula inserted and 20 ml/kg fluid bolus given
- Flexible fibreoptic bronchoscope prepared
- Rigid bronchoscope prepared
Clot in trachea

• Depth of anaesthesia lightened
  – Vomiting large volumes of old and new blood
  – Starting to cough

• Decision made to wake her up
  – More vomiting
  – 2 large clots via the ETT
  – extubated
20 min later

- Pt was awake and talking
- no signs of respiratory distress
- HR 150/min, BP 90/50, sat 99%
- Hemocue 88
Plan C

• Transfer to theatre as more room
• Crossmatch 1 unit
• One person to comfort patient
• Team together to discuss next plan: Plan C
Plan C

• Gas induction with sevoflurane, spontaneous ventilation, lateral position
• Deep intubation without muscle relaxant with pt in lateral position
• Fibreoptic scope to check for more possible clots
• Stop the bleed
• Suction the stomach
• Colleague anaesthetist joined the team
According to plan

• Uneventful intubation on sevoflurane and Ketamine 15 mg.
• No further clots identified
• Bleeding inferior tonsillar artery
• Transfused 1 unit on Hb 66 g/L
Postoperative

• Antibiotics: 1 week of augmentin
• Chest X-ray: exclude aspiration and pneumothorax
• Informed mum
• Day 1 informed Aimee, mum and dad
• Day 3 discharge
National Prospective Tonsillectomy Audit (2003-2004)

• Post tonsillectomy bleeding 3.5 %
• Return to theatre 0.9 %
• Risk factors:
  – Indication
  – Experience of doctor
  – Surgical technique
Post tonsillectomy haemorrhage

• Cardiovascular complications
• Respiratory complications
  • Blood aspiration
  • Formation of clots in airway (coroner’s clot)
4th National Audit Project of RCA

• 2008-2009
• One child died after uneventful tonsillectomy
Methods described to remove clot from lower airway

• Spontaneous breathing and cough reflex
• Lavage
• Suction
  – Tracheal suction catheters
  – Yankauer suction catheter passed into trachea
  – Suction directly to tracheal tube

Figure 1 An alternative suctioning device as used in this case. A standard tracheal tube (Mallinkrodt 8.5 mm internal diameter, cut to 25 cm length), with cuff deflated is attached to wall suction. A ‘Y’ connector allows control of suction.

Removal of obstructing blood clot from the lower airway: an alternative suction technique
Methods described to remove clot from lower airway

- Fibreoptic bronchoscope – suction channel
- Rigid bronchoscope
  - Suction catheters
  - Forceps
  - Snares
  - Arterial Embolectomy catheters


Methods described to remove clot from lower airway

- Topical trombolytic agents
  - Streptokinase
    1,000U/ml of normal saline, instilled in 10-15ml aliquots every 5-10 minutes through fibreoptic bronchoscope with maximum of 120,000 U
  - Urokinase
    5,000U/ml of water, 2.5ml aliquots (maximum 15,000U)

Reflection

• Mum recognising the symptom of swallowing
• Importance of G&S preop
• Induction
  – Check mouth
  – Position
  – Technique: rapid sequence vs spontaneous vent
• Suction techniques
• Tube
Reflection

• Use of Suggamadex
• Adrenaline swaps
• Team work
• Call for extra help
Latest from Anaesthesia Cases

Sugammadex rescue in a 'can intubate but can't ventilate' scenario. (2014-0225)
Dr Adam Low, Mr Richard Irving, Mr Neil Sharma, Dr Elonka Bergmans