

P40

PAEDIATRIC DIFFICULT AIRWAY EQUIPMENT - A SURVEY OF PAEDIATRIC CENTRES

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Introduction

Intubation may be more challenging in trauma cases due to either direct injury to head and neck, to cervical spine immobilisation and the emergency situation (1). Access to paediatric difficult airway equipment is essential. In England, there are sixteen paediatric trauma centres. We wanted to survey each centre to ascertain what paediatric difficult airway equipment was available and whether we could propose a standard paediatric difficult airway trolleys (pDAT) for paediatric trauma centres.

Methods

We conducted an email survey of all the paediatric trauma centres in England, enquiring about their paediatric difficult airway trolleys (pDAT)

- Contents
- Location
- Availability of specialist scopes/kit (video-laryngoscopes, fiberoptic bronchoscopes and pre-prepared front of neck access (pFONA) kits),
- Specific training individuals/teams received for practical skills and managing difficult airway scenarios including “can’t intubate, can’t oxygenate” (CICO).

Results

- 75% response rate.
- 50% of the hospitals kept their pDAT in theatres only whilst other institutions kept pDATs in multiple other locations (MRI, CT, PICU etc.).
- 60% of centres stocked 2nd generation LMAs.
- 25% of departments, the Storz C-MAC was the main video laryngoscope(VL) used.
- 25% of hospitals had multiple VL devices including Airtraq, Mcgrath and glideoscopes
- 40% used the Storz fiberoptic bronchoscope stack system
- 50% had a fibre-optic scope which passed through a 3mm ET tube.
- 60% had pre-prepared paediatric FONA sets.
- 25% used commercial low oxygen delivery devices (ENK /ventrain) for oxygenation via cricoidotomy.

- Different pFONA techniques depend on the age and weight of the child. We found that in all centres, scalpel techniques were advocated in children aged over 8. In children aged 1-8, there was 3:1scalpel to needle cricoidotomy preference and in infants, there was a 50% split of centres surveyed.
- Many centres offered regular difficult airway training sessions for the anaesthetist but uncertain if this extended to other members of the multidisciplinary team.

Discussion

Our survey demonstrates that there is a wide variation in paediatric difficult airway equipment amongst trauma centres. Although there is no one proven device to be best, familiarity of one's own pDAT is essential. Previous surveys of anaesthetists have shown only 56% had received training with their pDAT. Whilst 74% stated it was crucial that the surgical airway equipment was available on the trolley, many stated a lack of confidence with FONA (2)

Conclusion

There are differences in the choice and location of paediatric difficult airway equipment/trolley amongst the paediatric trauma centres in England, largely dependent on departmental preferences. Approaches to CICO kit and training methods are innovative. Within our institution, we have recently updated our pDAT, we aim to expand the number of pDATs and offer 3 monthly pop-up teaching, simulation training to ensure the all members of the multidisciplinary team feel confident with protocols and practical skills.

References:

1. Airway management after major trauma Julius Cranshaw MRCP FRCA PhD DICM EDIC J erry Nolan FRCA FCEM Continuing Education in Anaesthesia, Critical Care & Pain | Volume 6 Number 3 2006 124-127
2. The difficult airway trolley in paediatric anaesthesia: an international survey of experience and training. Alyson Calder pediatric anesthesia, 2012