



Paediatric airway

1.
How does the paediatric airway differ from the adult airway?
2.
How is endotracheal tube size selected?
3.
What problems can occur if too large an endotracheal tube is used on an infant?
4.
What conditions are associated with difficult paediatric airways?
5.
What airway issues exist with Down's Syndrome?
6.
What is laryngospasm?
7.
How do you recognise laryngospasm clinically?
8.
How would you manage a patient with laryngospasm?

Disclaimer: This mock viva was written by Dr Alyson Calder, Trainee Representative APAGBI and is designed to stimulate discussion and further reading. It does not represent the views of the Royal College of Anaesthetists. Please email alysoncalder@doctors.org.uk with any questions or comments.

29th April 2012.



USEFUL READING:

1. Cardwell M, Walker RWM. Management of the difficult paediatric airway. *Continuing Education in Anaesthesia, Critical Care & Pain* 2012; **3**(6): 167-170.
2. Holm-Knudsen RJ, Rasmussen LS. Paediatric airway management: basic aspects. *Acta Anaesthesiol Scand* 2009; **53**: 1-9
Available here: <http://onlinelibrary.wiley.com/doi/10.1111/j.1399-6576.2008.01794.x/pdf>

Paediatric Airway

- Large head
- Short neck
- Prominent occiput
- Large tongue (relative to mandibular space)
- No teeth
- High anterior larynx (C2-3) (C4-5 in adults)
- High epiglottis so that the infant can breathe and swallow at the same time
- Long U-shaped epiglottis (flops posteriorly, so keep head in neutral position)
- Obligate nasal breathers
- Airway narrowest at level of cricoid cartilage (vocal cords in adults)
- Trauma easily causes oedema (pseudostratified ciliated epithelium only loosely bound to underlying areolar tissue)
- Because Resistance $\propto 1/\text{radius}$, small amount of oedema increases resistance a lot
- Trachea 4-5cm long and funnel shaped
- Angle of mandible 140° (120° in adults)
- More reactive (i.e. more likely to develop laryngospasm)

Airway Considerations in patients with Down's Syndrome

- Macroglossia
- Possible subglottic stenosis (so may use an ETT 0.5-1.0 size smaller)
- Atlanto-axial stability in 15% of patients (so avoid excessive neck movement on laryngoscopy)
- Obstructive sleep apnoea common
- GORD

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