FIBEROPTIC INTUBATION IN NEONATES WITHOUT ORAL ACESS TO THE LARYNX

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Introduction
Children without mobility of the lower jaw or with severe microstomia present a problem if an intubation is needed.

There are four issues that need to be addressed:
• Tolerance for the procedure
• Maintenance of oxygenation
• Physical access to the laryngeal inlet and eventually to the trachea
• Avoidance of laryngospasms

How to make the fiberoptic intubation feasible?
By applying local anaesthesia to the whole airway in a safe and predictably effective manner.

Application of nebulized lidocaine combined with adrenaline facilitated fiberoptic intubation in these three cases

Bilateral fusion of mandible and maxilla
Bilateral fusion of mandible with zygomatic-maxillary complex
Pierre-Robin-Sequence with severe microstomia

Preoxygenation via facemask with 100% oxygen and sevoflurane
Nebulizer in the system with
• Lidocaine 4 mg/kg
• Adrenaline 10 mcg/kg

Effect:
Local anaesthesia with preoxygenation in one step. Duration ca 10 a 15 min (during setup of the procedure)

Steps of preparation for the fiberoptic intubation
1. Mask with 100% oxygen/Sevoflurane
2. Fiberoptic procedure as standard
   a) Tube on flexible fiberoptic endoscope (FFE)
   b) Insertion of FFE through face masker
   c) Introduction of FFE via upper and lower airway until carina
   d) Slide down tube from FFE until carina
3. Remove scoop with tube held in place
4. Connect /control ventilation

Tip:
With the nebulized application of lidocaine and adrenaline during the preoxygenation of the patient the chances of calm and steady performance of fiberoptic intubation are increased especially in children without oral access to the lower airway.

Patient 2: View at the laryngeal inlet at the day of birth during the primary fiberoptic intubation.
Patient 2: View at the laryngeal inlet at 10 months of age. Note the increased obstruction at the level of the tongue base.

For the time to come, we will continue to invest in the cooperation with the paediatric anaesthetists for further custom made procedures for safe circumstances in difficult cases.