

TOTAL INTRAVENOUS ANAESTHESIA TECHNIQUE IN AN INFANT WITH AN OBSTRUCTED AIRWAY, USING A TRADITIONAL INFUSION PUMP.

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INTRODUCTION :

Anaesthetising an infant with an obstructed airway traditionally with inhalation agents can fail despite of meticulous planning. This case report is intended to describe the plan that was executed to successfully perform total intravenous anaesthesia without the availability of a Target Control infusion (TCI) pump.

CASE REPORT :

A four month old, 5 kg infant with laryngomalacia and subglottic stenosis presented for direct laryngoscopy, bronchoscopy, tracheal dilatation and supraglottoplasty. She was born premature at 31 weeks and had an eventful 4 months with recurrent pneumonia resulting in 3 intubations, with the last one requiring multiple attempts. She developed post extubation stridor and was on non invasive ventilation support and had difficulties to wean off oxygen therapy.

We opted to perform the anaesthesia using total intravenous anaesthesia (TIVA) technique however, we only had the Injectomat TIVA Agilia that was meant for minimal age of 16 years old. After extensive reading and discussion, we decided to employ the 'Roberts' manual infusion regimen incorporating Remifentanyl. Remifentanyl is constituted to a concentration of 1mg/ml, 0.1 ml of this concentration (100mcg) is then added to 20 mls of Propofol 1% forming a final preparation of Remifentanyl 5 mcg/ml and Propofol 10mg/ml.

Prior to induction, the child received Glycopyrrolate to reduce secretions and Dexamethasone to reduce airway oedema. Propofol/Remifentanyl was infused at the rate of 15 mg/kg/hr whilst aiming to achieve loss of consciousness without apnoea. Gentle laryngoscopy was performed and Lignocaine 2% was sprayed topically on vocal cords prior to laryngoscopy. Once procedure begun, we were able to maintain anaesthesia with TIVA of 7 mls/ hour (equivalent to 14 mg/kg/hour). Intraoperatively, the vital signs remained stable with good spontaneous respiration. Hence, providing the surgeon an uninterrupted field and the anaesthesiologist continuous oxygenation and ventilation for about an hour.

CONCLUSION :

This technique proved valuable in our centre that did not have a Paediatric TCI pump and yet a TIVA technique was successfully performed for a shared airway procedure. The combination of Propofol 10mg/ml and Remifentanyl 5 mcg/ml provided adequate depth of anaesthesia and analgesia while maintaining good ventilation. Meticulous pre operative planning and vigilant intraoperative monitoring was still valuable to ensure smooth and safe anaesthesia was delivered to this infant. Nonetheless, further studies will still be required to define appropriate dosing and concentrations of medications used in future.