Does Using LMA Instead of an Endotracheal Tube Affect the Incidence of Postoperative Vomiting in Children Undergoing Strabismus Corrections?

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Introduction: A previous retrospective study in children showed that the use of a laryngeal mask (LMA) to secure the airway did not decrease the morphine induced vomiting after tonsillectomy (1). In this double blind, randomized prospective study we evaluated whether using an endotracheal tube (ET) or an LMA in strabismus surgery affected the incidence of postoperative vomiting (POV). The study was for 24 h from anesthesia end

Methods: Institutional and parental written approval was obtained. Children, 2-12 yrs. old, both genders, ASA physical Status 1 or 2, scheduled for strabismus surgery were enrolled. Those with reflux, extreme obesity or with known difficult airway were excluded. Children were randomized to receive either an LMA or endotracheal tube. They were fasting and premedicated with medazolam 0.5 mg/kg p.o. In the OR, after placing routine monitors, anesthesia was induced via mask, oxygen and sevoflurane. Glycopyrrolate 5 mcg/ kg, propofol 2 mg/kg and fentanyl 2 mcg/ kg were administered i.v. followed by placing the airway device. Anesthesia was maintained with sevoflurane, oxygen in air and fentanyl. Ventilation was pressure controlled using the lowest airway pressure to deliver 8 ml/kg tidal volume. At the end of surgery, the airway devise was removed while the child was asleep.

In the PACU, an independent blinded observer noted the incidence and frequency of vomiting (including retching). Ondansetron 0.1 mg/kg I.V. up to 4 mg was administered as a rescue medication. If a child still vomited, dexamethasone 100 mcg/ kg I.V. was administered. Morphine sulphate 0.1 mg/kg I.V. was administered for pain relief. The independent observer called the parent following day to evaluate POV after hospital discharge. Data were statistically analyzed and a p value <0.05 was significant.

Results:
1. In the PACU, the incidence of POV was not different among the two groups.
2. The incidence of vomiting after hospital discharge was not significance (p=0.09). However, the frequency of vomiting was significantly less in the ET Group compared to the LMA Group (p=0.04). The Mean and SD of number of vomiting episodes was 0.1 ± 0.3 for the ET Group and 0.8 ± 1.0 for the LMA Group.

Discussion: Although the number of children enrolled in the study is small, it appears that the use of LMA was associated with higher frequency of POV after hospital discharge. This may have been due to stomach inflation or stimulating the oropharynx.

Ref:
Anderson B.J., et al., Paediatr Anaesth, 2000