Risk of laryngospasm and bronchospasm with the laryngeal mask airway compared to endotracheal intubation in neonates less than six months of age: a retrospective study of 4,173 patients.

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Though the laryngeal mask airway (LMA) has been validated as an effective means of providing ventilation during neonatal resuscitation (1), the routine use of LMAs for elective surgery in infants remains controversial. To date, there have been no studies comparing the frequency of airway complications with LMA versus endotracheal intubation (ETT) in neonates undergoing elective surgery. We performed a retrospective analysis to determine the incidence of laryngospasm and bronchospasm with LMA and ETT in infants less than 6 months of age. All the anesthetic records from June 2003 to June 2010 at Childrens Hospital Los Angeles were screened. After inclusion and exclusion criteria were applied, a total of 4,173 cases remained for analysis. Data extracted included demographic information, case information, written comments, and the use of medications common in the treatment of laryngospasm and bronchospasm. Three independent investigators reviewed records which had yielded positive results. Comparison of categorical data between ETT and LMA groups was made using the chi-square test or Fishers exact test if data contained sample sizes less than six. Analysis of continuous data between the two groups was made with the Wilcoxon rank-sum test. Of 4,173 total cases, 3,418 anesthetics were administered using an ETT, while 755 cases utilized a LMA. The LMA group was found to be older, heavier, and healthier than the ETT group. The incidence of laryngospasm was 1.7% in the LMA group and 0.7% in the ETT group (p < 0.05), and the incidence of bronchospasm was 0.4% in the LMA group and 0.5% in the ETT group (p < 0.05). Our study is the first to compare the incidence of airway complications with LMA versus ETT in the neonatal population. The increased risk of laryngospasm when using LMAs in neonates may be secondary to difficulty with proper positioning of smaller sized LMAs (2). Though overall complication rates are low, the results from this study suggest that the anesthesiologist should have a heightened awareness to possible intraoperative problems when LMAs are used in small infants.

References:

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