this information may be clinically relevant, especially in view of present controversy about the utilisation of suxamethonium in children.

Patients & Methods: After informed consent 35 children (age 2–6 yr) undergoing ENT surgery were included. First the features of onset of 0.6 mg/kg R (2 × ED_{95}) (3) were determined. To this end neuromuscular (NM) blockade was quantified in ten children undergoing general anaesthesia (thiopentone 5 mg/kg, alfentanil 10 μg/kg, R 0.6 mg/kg, isoflurane 1%, N_2O/O_2 60%/40%). NM transmission was assessed by electromyography (Relaxograph®, Datex), and the following parameters were measured: lag time: time (t) from injection of R to the first measurable twitch depression; onset time: t from injection of R to max twitch depression; the twitch high (TH) 1 min after R. In the second part of the study we evaluated in 25 children the intubation conditions of R sixty s after thiopentone (5 mg/kg), alfentanil (10 μg/kg) and R (0.6 mg/kg). An experienced anaesthetist assessed the intubating conditions in each patient using the following criteria: excellent, good, poor, or inadequate (2).

Results: Onset features (n = 10, mean ± SD) - lag time: 40 ± 0 s, onset time: 220 ± 28 s, TH after 1 min: 30 ± 8%. Intubating conditions (n = 25) - excellent: 23 patients; good: 2 patients

Conclusions: To our knowledge this is the first study examining the intubating conditions of R (2 × ED_{95}) during rapid sequence induction in children. We have found them to be good to excellent. This may be explained by a rapid appearance of NM blockade (lag time) and the advanced NM block at 1 min, even though the onset time was not particularly short.

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A.306 Fibreoptic assessment of positioning of the laryngeal mask airway in children

A. Gürpinar [1], B. Yavaşcaoğlu [2], G. Korfali [2], H. Doğruyol [1]. [1] *Department of Pediatric Surgery, Uludağ University, Medical Faculty, Bursa, Turkey;* [2] *Anesthesia and Reanimation, Uludağ University, Medical Faculty, Bursa, Turkey*

Background: The laryngeal mask airway (LMA) was first described by Brain in 1983(1) and is now extensively used in paediatric anaesthetic practice. The higher and more anteriorly placed glottis with a relatively large floppy epiglottis may make correct placement of the LMA more difficult in children than adult.

We assessed the position of four sizes of LMA in anaesthetised children using a fibreoptic laryngoscope.

Patients and methods: Clinical and fibreoptic assessment of the positioning of the LMA was performed in 100 anaesthetised children. The induction of anesthesia was performed with propofol (3 mg/kg) and anesthesia maintained with Halothane (1–1.5%) in oxygen (4 lt/min) and nitrous oxide (6 lt/min). The LMA was inserted in a standart fashion according to the maker's recommondations (Intravent Laryngeal Mask Airway, DJ. Colgate Ltd., UK) and the cuff inflated with air. The actual position of the LMA was then ascertained by fibreoptic laryngoscopy (Olmypus ENF P2) only after initial insertion. Laryngoscopic findings were classified as shown in Table 1(2).

Table 1. Laryngoscopic findings.

Group 1	larynx only seen.
Group 2	epiglottis and larynx seen.
Group 3	epiglottis impinging or grille, larynx seen.
Group 4	kinked laryngeal mask airway.
Group 5	epiglottis downfolded, larynx not seen.

Results: Clinical observation indicated a patent airway in 97% and severe airway obstruction in 3% of cases. Good positioning, as judged by fibreoptic laryngoscopy, was found in 59% and the epiglottis was within the mask in 38% which also had clinically normal function and effective ventilation (SaO_2 > 95).

Conclusion: Fibreoptic assessment of the LMA in children shows that while positioning may not be anatomically perfect its function is clinically satisfactory in the majority of children.

References

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A.307 Laryngeal mask airway does not increase intraocular pressure regardless of the induction method

S. Demiralp, Y. Ateş, D. Yörükoğlu, H. Başar, Z. Alanoğlu. *University of Ankara, Department of Anaesthesiology and Reanimation*

Background & Goal of the study The effects of laryngeal mask airway (LMA) on intraocular pressure (IOP) has been previously studied, however its comparison with tracheal intubation has given controversial results (1, 2). This study was planned to determine whether LMA application with two different anaesthetic induction methods resulted in significant change of IOP compared to tracheal intubation in children undergoing elective surgical procedures.

Materials & Methods 36 children scheduled for various surgical procedures under general anaesthesia were allocated to three groups. All patients were premedicated with 0.5 mg/kg midazolam P.O. In Group I (n = 13) (tracheal intubation) anaesthesia was induced with thiopentone and fentanyl. Atracurium was the muscle relaxing agent. In Group II (n = 13) (LMA) induction with thiopentone and fentanyl, in Group III (n = 10) (LMA) Halothane/N_2O/O_2 inhalation was used for induction. LMA was applied in both groups without any muscle relaxing agent. Failure in insertion of LMA in the first attempt was an exclusion criteria. Anaesthesia was maintained with 1–2% Halothane and 60% N_2O in 40% oxygen in both groups. Heart rate (HR), blood pressure (BP), oxygen saturation (SpO_2), end-tidal CO_2 ($ETCO_2$) and IOP (Schiotz tonometer) were monitored immediately after induction, 1 and 5 minutes after tracheal intubation or LMA insertion, before and after removal of endotracheal tube or LMA at the end of operation.

Results and Discussion Demographic data were similar. Tracheal intubation was performed in children undergoing corrective surgery for congenital abnormalities therefore average duration of operation in Group I was significantly longer. There was a significant increase in heart rate compared to baseline values 1 and 5 minutes after intubation in Group I ($p < 0.01$). Changes in BP, SpO_2 and $ETCO_2$ were not significant. Mean IOP values at the measured intervals were similar in all three groups. No complications occurred related to the use of LMA. It has been shown that endotracheal intubation performed apter the administration of a nondepolarizing muscle relaxing agent does not increase IOP. In this study we have observed that LMA application with both induction methods is equally safe in terms of IOP changes. The patients in LMA groups were also more stable haemodynamically.

Conclusion LMA with both induction methods can be applied in all surgical operations where an increase in IOP has to be avoided. Eye examination under anaesthesia and short paediatric ophthalmologic procedures requiring safe airway provide an ideal opportunity for its use.

References

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A.308 Paediatric premedication and postoperative pain management in Europe: a 17-nation survey

Narinder Rawal, Renée Allvin, EuroPain Study Group on Acute Pain. *Örebro Medical Center Hospital, Örebro, Sweden*

Background & goal of study: This survey was undertaken to study pediatric premedication and postoperative pain management practices in Europe.

Materials & methods: A questionnaire was mailed to anaesthesiologists in 105 hospitals from the following 17 countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and UK. Depending on the population 5–10 hospitals from each country were selected by a country coordinator.

Results & discussion: A total of 101 (96.2%) completed questionnaires were returned. In 70% of participating hospitals children aged 0–6 months did not receive any premedication. In the age group 3–10 years 70% hospitals provided premedication which usually consisted of benzodiazepines. In about 10% of hospitals no premedication was given to children (all ages). The routes of administration for different age groups are shown in the table. The rectal route for drug administration was frequently used in Scandi-navian countries, France and Germany. It was almost never used in Greece, Ireland, Italy, Spain and UK. In 50% of participating hospitals parents were allowed and mostly encouraged to be present at the time of anaesthesia induction, however in 28% hospitals this practice was not allowed especially in Finland, France, Greece, Portugal, Spain, Switzerland.

Pain intensity was routinely assessed in only 18% of hospitals. For children up to 3 years rectal paracetamol was the commonest method of postoperative analgesia. I.v. opioids, oral paracetamol and i.m. opioids were used in 5–15% of hospitals. Caudal block for pain relief following hypospadius surgery was provided at 35% of participating hospitals. About

Premedication	Age 1 month (Pyloric stenosis) % hospitals	Age 3 yr (Hypospadius) % hospitals	Age 15 yr (Tonsillectomy) % hospitals
None	47.6	–	–
Oral	10.1	50.2	69.6
Rectal	4.2	40.6	4.4
I.m.	26.2	2.6	17.2
Other (i.v. nasal etc)	11.9	6.6	9.8