Nasal CPAP in Pediatric Patients Undergoing MRI Study
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INTRODUCTION

Moderate to deep sedation, or general anesthesia with paralysis is often required to obtain satisfactory MRI images. With the deepening of sedation, there is a tendency for upper airway obstruction in pediatric patients and resultant interventions is essentialized. A high variety of techniques has been used: LMA, and intubation in pediatric patients (2,3). The MRI suite poses significant challenges both in adequate monitoring and airway intervention (1). We conducted a study in pediatric patients anesthetized for MRI using nasal CPAP as a non-invasive airway management technique.

METHODS

45 pediatric patients ages 5 m – 7 yrs underwent MRI study at Shands Hospital of University of Florida under anesthesia. We used the Nasal Ventibule Airway (NVA), a pressure-sealing nasal cannula, and the SNOR-SCOPE, an anesthesia-circuit stethoscope head (both devices invented, and registered by Dr James Noble). Use of these devices has been approved by the hospital. All of the anesthesiologists were trained in the naso-oral technique. Other monitors and anesthesia equipment were standard. The respiratory bag was connected to the NVA by the coparticipating anesthesiologist. CPAP was established at 4 cm of water fluctuating from 3 to 5 cm, depending on patient’s condition. All patients were monitored in the ICU, by the service charged for the patient’s stay.

RESULTS

The results of 45 pediatric patients were reviewed. There were no mortality or morbidity, or any other complications related to this anesthesia management.

DISCUSSION

Providing anesthesia management for MRI study in pediatric patients may be quite challenging. The possibility of difficult airway, significant cardiac or other comorbidity, remote location with limited resources, positioning of small pediatric patient inside of scanner - all these factors contribute to the risk of increased complications (1). Different airway devices have been suggested and used for MRI study. We are offering a new approach – nasal CPAP with intranasall anesthesia as an alterantive to instrumentation of the airway. There is a group of pediatric patients who may benefit from this technique greatly.

The three fundamental devices required for this new airway management system are now officially registered and ready for market: the NVA in SNOR-TAL configuration; the SNOR-SCOPE stethoscope head; and the SNOR-SCOPE PLUS electronic attachment. Anyone interested should first visit the website: www.anesthesia-air.com.

REFERENCES