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The LMA-ProSeal™ for Hip Surgery In The Lateral Position

Introduction

A 46 year old man, 6'4" and 123 kg, presented for open reduction and internal fixation of a recurrent left femoral neck fracture. The patient had undergone 3 previous left hip operations with tracheal intubation and reported significant postoperative sore throat.

Surgical Procedure

Anesthesia was induced with propofol 2.5 mg/kg and sevoflurane-oxygen by face mask. After an adequate level of anesthesia was achieved, a #5 LMA-ProSeal was inserted. The LMA cuff was inflated with 30 ml of air (intracuff pressure 60 cm H_2O) which provided a seal to 35 cm H_2O inspired pressure. The LMA-ProSeal was secured with a single piece of one-inch tape that was fixed on the right malar eminence, wrapped once around the LMA just above the lips and fixed on the left malar eminence. Controlled ventilation was initiated with a tidal volume of 850 ml at a peak inspiratory pressure of 28 cm H_2O. End-tidal CO_2 was maintained between 35 and 38 mm Hg. A 16 French Salem Sump® tube was passed through the gastric conduit and 75 ml of gastric fluid was aspirated after which the Salem Sump® tube was removed. The patient was placed in the right lateral decubitus position and surgery commenced. Anesthesia was maintained with sevoflurane and nitrous oxide in oxygen. Intravenous morphine was administered during the last hour of surgery. After a five hour surgical procedure, the patient was returned to the supine position, inhaled anesthetics were discontinued and spontaneous ventilation resumed. The LMA was removed when the patient opened his eyes on command. There was no coughing during emergence from anesthesia. The patient reported no sore throat in the recovery room or the day after surgery.

Discussion

Laryngeal mask airways have been routinely used in spontaneous and controlled ventilation with less than 20 cm H_2O pressure The LMA-ProSeal has improved design features for surgical anesthesia. The two stage cuff and wider, deeper LMA bowl produce a better perilaryngeal fit and a higher seal pressure without increasing pressure against the pharyngeal mucosa (1,2). These features facilitate controlled ventilation during anesthesia. The dual tube design, reinforced flexible airway tube, and improved laryngeal fit of the LMA-ProSeal produce a stable artificial airway that is unlikely to become dislodged when the patient's position is changed. The LMA-ProSeal with a higher seal pressure and greater stability increases the ease and reliability of controlled ventilation and broadens the applications for LMA use during anesthesia.

The gastric drain permits passage of a tube for decompression of the stomach (3). The open gastric drain provides a low pressure conduit to the atmosphere for passage of gas or fluid should gastric pressure increase.

Summary

The LMA-ProSeal increases the versatility and applications for LMA use during anesthesia. Seal pressure is higher which increases the ease of controlled ventilation. The gastric drain permits rapid and simple decompression of the stomach. These features expand options for intraoperative airway management and reduce side effects such as sore throat, common after direct laryngoscopy and tracheal intubation.

References

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3) Keller C, Brimacombe J, Kleinsasser A, Loeckinger, A. Does the ProSeal laryngeal mask airway prevent aspiration of regurgitated fluid? *Anesth Analg* 2000;91:1017-20.