USE OF LARYNGEAL MASK AIRWAY IN THYROID SURGERY (A Case Report)

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Introduction

The laryngeal mask airway (LMA) is the latest advance in airway management and now it has been accepted as an alternative to the face-mask or the tracheal tube for anaesthesia. It is inserted blindly with ease into the pharynx and does not need laryngoscopy. When in position, its lumen communicates with the larynx and its cuff forms a low-pressure seal around the laryngeal inlet [1]. So it is possible to ventilate the patient using gentle positive pressure. It was first used in a case of failed intubation in 1983. It has a definite place in a setting where intubation is difficult or impossible or in a situation where face-mask anaesthesia is impossible [2].

We report the case of an elderly female patient in whom partial thyroidectomy was undertaken despite a difficult airway. The surgery was successfully carried out under general anaesthesia using the LMA.

CASE REPORT

A female patient, aged 62 years, was posted for partial thyroidectomy. Preoperatively she was asymptomatic and clinically euthyroid. Earlier, she had been treated with tablet neomercazole 10 mg 8 hourly for nearly 6 months for thyrotoxicosis.

During the pre-anaesthetic assessment the patient was found to be only 149 cm in height and weighed 45 kg. Her pulse rate was 74/min and BP 136/90 mm Hg. Systemic examination was normal. She had a short neck, protruding upper incisors and receding lower jaw. The airway was Mallampatti Class III [3]. The thyroid swell-

ling was 3cm x 3cm in size, firm and non-tender. There was no deviation or compression of the trachea. All relevant investigations including thyroid function tests were normal. She was accepted for surgery under general anaesthesia in ASA grade I and difficult intubation was anticipated.

She was premedicated with Inj glycopyrrolate 0.2 mg and pethidine 50 mg intramuscularly. Following preoxygenation for 3 minutes, anaesthesia was induced with a sleep dose of thiopentone (200 mg) followed by suxamethonium 75 mg IV to facilitate tracheal intubation. Laryngoscopy with the Macintosh laryngoscope was difficult. Only the tip of the epiglottis could be seen and it could not be lifted up making visualisation of the glottis impossible even with posterior pressure on the thyroid gland (grade III airway). Two attempts at intubation failed. She was ventilated with 100% oxygen and it was decided to make an attempt to secure the airway using laryngeal mask airway (LMA). A well-lubricated LMA of size 4 was inserted blindly into the oropharynx. The technique used for insertion of the LMA was the same as described in Intravent LMA instruction manual [4]. The cuff of the LMA was then inflated and it was connected to a Boyle's apparatus through a Bain's breathing system. The position LMA was confirmed by auscultation of chest for breath sounds. Subsequently, anaesthesia was maintained using conventional balanced anaesthesia technique. The patients's respiration was controlled using Pancuronium to maintain end-tidal carbon dioxide (ETCO₂) at 32-36 mm Hg. During the operation, the pulse rate and systolic BP, monitored every 5 to 10 minutes, varied between 80-88 beats/min and 130-160 mm Hg respectively. Arterial oxygen saturation (SaO₂) was monitored continuously which remained at 93% to 98%. The estimated blood loss was 400 ml which was replaced. In addition, she was given 1500 ml Ringer lactate infusion. The operation lasted for 3 hours. At the end of the surgery neuromuscular block was reversed with neostigmine and glycopyrrolate. The oral cavity was cleared of mucous and secretions and the LMA was left in situ till she responded to verbal command and opened her

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mouth widely. The cuff was then deflated and LMA gently removed and the patient was oxygenated.

Postoperatively, she complained of sore throat and a change in voice. A small abrasion was found over palate and uvula. Her symptoms improved within 72 hours without any active treatment.

Discussion

Thyroid surgery is commonly performed under endotracheal anaesthesia and an endotracheal tube is always the first choice to secure airway during this surgery. However, in this particular patient, we anticipated difficulty in intubation because her airway was Mallampatti Class III [3] and she also had protruding upper incisors with a receding lower jaw. So, we kept LMA ready for insertion, should the need arise. As anticipated, we could not intubate this patient and laryngoscopy revealed Grade III airway [5]. So, we quickly secured the airway using LMA to avoid hypoxaemia.

Various methods of passing tracheal tubes in patients with difficult airways have been suggested. These methods are, the use of fibre-optic techniques, retrograde intubation, a flexible catheter guide, etc., [6] but we preferred to use LMA because the other techniques need experience and are time consuming. LMA has the advantage of speed, simplicity of insertion and a high success rate at the first attempt in a situation like this. One can also pass a gum elastic bougie through the LMA and after withdrawing the LMA, the tracheal tube can be railroaded over the bougie. We would have used this technique for intubation during surgery in the event of any airway problem.

The use of LMA in thyroid surgery has specific advantages. The LMA cuff pushes the thyroid more anteriorly and facilitates surgi-

cal access. It also avoids damage to the vocal cords. On the contrary, the use of LMA is also associated with risk of airway obstruction due to manipulation of the trachea by the surgeon, damage to recurrent laryngeal nerve, and tracheomalacia.

We could not visualise the vocal cords by laryngoscopy at the end of the operation to rule out recurrent laryngeal nerve palsy. However, we ruled this out by asking the patient to pronounce the syllable 'E'.

Postoperatively, the patient's complaints of sore throat, change in voice and the findings of abrasion over uvula and palate were possibly because of use of large sized LMA because of non-availability of an appropriate size (size 3). There was no other complication due to use of the LMA.

The surgeon was highly satisfied with the use of the LMA in this patient. This particular case highlights the importance of keeping LMAs of different sizes ready at hand specially when difficulty in intubation is anticipated.

REFERENCES

1. Brain AIJ. The laryngeal mask- a new concept in airway management. *Br J Anaesth* 1983; 55 : 801-5.
2. Brimacombe J, Shorney N. The laryngeal mask airway - a review. In : Kaufman L, editor. *Anaesthesia Review* 10. Edinburgh : Churchill Livingstone, 1993; 188.
3. Mallampatti SR. Clinical sign to predict difficult intubation (hypothesis). *Can Anaesth Soc J* 1983; 30 : 316-7.
4. Brain AIJ. The intravent laryngeal mask instruction manual. Intravent 2nd ed. 1991.
5. Cormack RS, Lahane J. Difficult intubation in obstetrics. *Anaesthesia* 1984; 39 : 1105-11.
6. Nunn JF, Utting JE, Brown Br. *General anaesthesia*. 5th ed. London : Butterworths and Co, 1989; 531-4.