

Novel use of laryngeal mask airway classic excel™ for bronchoscopy and tracheal intubation

Anusha Kannan, Edwin Seet

Department of Anesthesia, Khoo Teck Puat Hospital, Alexandra Health, 90 Yishun Central, Singapore

Abstract

The usage frequency and scope of supraglottic airway devices in anesthesia has expanded since the original laryngeal mask airway (LMA) prototype was invented by Dr Archie Brain in the early 1980s. Today, anesthesiologists are spoilt-for-choice with more than thirty options. The LMA Classic Excel™ was introduced to anesthesia practice in 2009; designed with an epiglottic elevating bar and a removable airway connector to facilitate tracheal intubation using the LMA as a conduit. We present a case report of a woman diagnosed with papillary carcinoma of thyroid, who underwent bronchoscopic assessment of the trachea and subsequent intubation for an en-bloc dissection and removal of thyroid gland through the LMA Classic Excel™.

Key words: Bronchoscopy, intubation, laryngeal mask airway

Introduction

The earliest prototypical supraglottic airway device was invented by Dr Archie Brain in the early 1980s.^[1] The laryngeal mask airway (LMA) was intended to bridge the gap of between the face mask and the endotracheal tube. In the ensuing thirty years, modifications to supraglottic devices improved laryngeal seal, enabled gastric drainage, and allowed intubation with the supraglottic device as a conduit. Anesthesiologists are now spoilt-for-choice; and the role of supraglottic devices in anesthesia has expanded greatly.^[2]

In this case report, we describe and discuss the use of the new LMA Classic Excel™ for successful bronchoscopic examination and subsequent tracheal intubation in a patient with malignant thyroid disease.

Case Report

A 61-year-old woman with a long-standing history of thyroid disease presented with focal neck swelling of around 4-5 cm. She had a background history of hypertension. The mass was mobile with tongue protrusion. Computed tomography scan of the neck showed a heterogeneous thyroid mass with multiple cystic areas and multiple foci of calcification [Figure 1]. Fine needle aspiration cytology of the lesion yielded papillary carcinoma. There were no clinical features of airway compression. Total thyroidectomy was planned by the otolaryngology surgeon. The patient was clinically and biochemically euthyroid prior to surgery.



Figure 1: Axial CT scan image of the patient showing the complex lesion with cystic component and calcification involving the isthmus and left lobe of thyroid gland

Address for correspondence: Dr. Anusha Kannan,
Department of Anesthesia, Khoo Teck Puat Hospital,
Alexandra Health, 90 Yishun Central, Singapore.
E-mail: docanusha2@gmail.com

Access this article online

Quick Response Code:



Website:

www.joacp.org

DOI:

10.4103/0970-9185.111649

Fiberoptic bronchoscopy was scheduled to rule out tracheal invasion before surgery. The patient was induced with inhaled sevoflurane, intravenous propofol and remifentanyl. The LMA Classic Excel™ was inserted and hand ventilation was assessed which was found to be adequate. Spontaneous breathing was allowed on the supraglottic airway device. Bronchoscopic assessment of trachea was performed through 15 mm fiberoptic bronchoscope swivel connector (Smith Medical International Ltd, UK) under general anesthesia. After the completion of the bronchoscopy, the patient was paralyzed and the trachea intubated with a 7.0 mm ID endotracheal tube over a fiberoptic bronchoscope, using the LMA Classic Excel™ as a conduit. Figure 2 shows the view of the laryngeal inlet and epiglottis elevating bar through the LMA Classic Excel™. The surgeons proceeded with surgery uneventfully. En-bloc dissection and removal of the thyroid gland was done with excision of the strap muscles and the first tracheal cartilage which was adherent to the tumor was done. The trachea was successfully extubated at the end of the surgery.

Discussion

Supraglottic airways have become an essential piece of equipment in our airway carts. They are being increasingly used as a conduit for tracheal intubation. The LMA Classic Excel™ is an advanced supraglottic airway device designed to facilitate tracheal intubation with an endotracheal tube with the aid of a fiberoptic bronchoscope. We have not found any case reports for its use in diagnostic bronchoscopic examination. Continuous ventilation and oxygenation during bronchoscopic evaluation lessens the likelihood of desaturation.

The LMA Classic Excel™ is an enhanced version of the classic LMA with new features including a wider and

reinforced airway tube, removable airway connector and epiglottis elevating bar [Figure 3]. The airway tube is wide enough to accept up to a 7.0 mm cuffed tracheal tube and short enough to ensure passage of the tracheal tube beyond the vocal cords. The caudal end of the epiglottis elevating bar is not fixed allowing it to elevate the epiglottis when the endotracheal tube is passed through the aperture.

Other supraglottic airways designed for a similar purpose include the Aura i™ laryngeal mask- a disposable version that lacks the epiglottis elevating bar and accepts a standard (7.5 mm ID) tracheal tube.^[3] The Air Q intubating laryngeal airway is a newer supraglottic device with 92% success for fiberoptic guided intubation. The Air Q also has an easily removable connector.^[4] There are yet to be published ongoing studies comparing these devices. Several reports demonstrate the successful use of these supraglottic airway devices in difficult airway scenarios. Previous reports have described the difficulty of passing the tracheal tube through the older LMA Unique™.^[5] Modifications of the original LMA such as LMA Fastrach™ have been used to aid diagnostic and therapeutic laryngeal surgical procedures.^[6] In a study involving 144 thyroid surgeries, Shah *et al.*, used the LMA as an aid to identify and preserve recurrent laryngeal nerve.^[7] They used fiberoptic laryngoscopy through the LMA to visualize vocal cord movement upon stimulation of recurrent laryngeal nerve. Hernandez^[2] mentions the LMA Classic Excel™ as an alternative to intubating LMA for cases requiring a supraglottic airway to aid in tracheal intubation.

We describe the novel use of the LMA Classic Excel™ for diagnostic bronchoscopy and subsequent tracheal intubation. The epiglottis elevating bar may be a useful modification of the LMA in preventing epiglottic obstruction facilitating passage of the fiberoptic bronchoscope and the tracheal tube. The new



Figure 2: Fiberoptic bronchoscopic view of laryngeal inlet and epiglottis elevating bar through the LMA Classic Excel™



Figure 3: Swivel connector attached to LMA Classic Excel™ with fiberoptic bronchoscope through it

LMA Classic Excel™ may prove to be a useful addition to the anesthesiologists' airway management armamentarium.

References

1. Brain AIJ. The laryngeal mask airway: A new concept in airway management. *Br J Anaesth* 1983;55:801-5.
2. Hernandez MR, Klock PA Jr, Ovassapian A. Evolution of the extraglottic airway: A review of its history, application, and practical tips for success. *Anesth Analg* 2012;114:349-68.
3. McAleavey F, Michalek P. Aural laryngeal mask as a conduit for elective fiberoptic intubation. *Anaesthesia* 2010;65:1151.
4. Joffe AM, Liew EC, Galgon RE, Viernes D, Treggiari MM. The second – generation Air –Q intubating laryngeal mask for airway maintenance during Anesthesia in adults: A report of the first 70 uses. *Anaesth Intensive Care* 2011;39:40-5.
5. Williams S, Olomu PN, Davis D, Steiner J, Glover CD. Use of the LMA classic excel™ for airway rescue in a patient with known difficult airway. Available from: <http://www.pedsanesthesia.org/meetings/2010winter/syllabus/posters.html>. [Last accessed on 2012 Sep 17].
6. Chang CM, Bai SJ, Kim MK, Nam SB. The usefulness of the laryngeal mask airway Fastrach for laryngeal surgery. *Eur J Anaesthesiol* 2010;27:20-3.
7. Shah EF, Allen JG, Groatorex RA. Use of laryngeal mask airway in thyroid and parathyroid surgery as an aid to the identification and preservation of the recurrent laryngeal nerves. *Ann R Coll Surg Engl* 2001;83:315-8.

How to cite this article: Kannan A, Seet E. Novel use of laryngeal mask airway classic excel™ for bronchoscopy and tracheal intubation. *J Anaesthesiol Clin Pharmacol* 2013;29:235-7.

Source of Support: Nil, **Conflict of Interest:** None declared.

Announcement

Android App



Download
**Android
application**

FREE

A free application to browse and search the journal's content is now available for Android based mobiles and devices. The application provides "Table of Contents" of the latest issues, which are stored on the device for future offline browsing. Internet connection is required to access the back issues and search facility. The application is compatible with all the versions of Android. The application can be downloaded from <https://market.android.com/details?id=comm.app.medknow>. For suggestions and comments do write back to us.