

Lee fiberoptic intubating airway for facilitating orotracheal fiberoptic intubation

Sang-Kyi Lee and A Ram Doo

Department of Anesthesiology and Pain Medicine, Chonbuk National University Medical School, Jeonju, Korea

Fiberoptic intubation is occasionally needed to secure the airway in difficult intubation patients. In deeply sedated or anesthetized patients, the base of the tongue and epiglottis are displaced backwards to the posterior pharyngeal wall and the oropharyngeal and hypopharyngeal space is small, which hinders passage of the fiberoptic cable into the glottic opening. Consequently, it is important to secure the oropharyngeal and hypopharyngeal space and maintain the fiberoptic cable in the midline position during fiberoptic intubation to facilitate the fiberoptic intubation. This necessitates a fiberoptic-compatible intubating oral airway to maintain mask ventilation and allow easy orotracheal fiberoptic intubation in heavily sedated and unconscious patients, especially in difficult intubation situations. Several commercial fiberoptic airways, including the Williams Airway Intubator, Luomanen Airway, Patil-Syracuse Airway, Ovassapian Airway and Berman Intubating Airway, are available [1].

We modified a conventional color-coded Guedel Airway (80 or 90 mm size for adult use) to maintain the midline position of the fiberoptic cable in the oral cavity (all Guedel Airway sizes can be modified). We cut longitudinally through the lingual concave aspect out from the proximal flange to the distal tip of Guedel Airway, and made an open longitudinal anterior channel (8 mm in width and 80 or 85 mm in length with 80- and 90-mm models, respectively), which extends the whole length of the airway. We think that 8 mm width of this open channel is compatible with almost all diameters of commercially available fiberoptic cables. It is the modification of a conventional Guedel

Airway, which is called Lee fiberoptic intubating airway (Lee airway)(Fig. 1).

For orotracheal fiberoptic intubation, we first insert an adequately sized Lee airway for a patient into the central midline position of the oral cavity. Then, the fiberoptic cable, over which the tracheal tube is placed, is inserted through the anterior



Fig. 1. A Lee fiberoptic intubating airway for facilitating orotracheal fiberoptic intubation, showing the 8 mm-wide, 85 mm-long longitudinal open anterior channel extending the whole length of the airway. This Lee airway is modified from a conventional Guedel Airway (90 mm in length).

Corresponding author: Sang-Kyi Lee, M.D., Ph.D., Department of Anesthesiology and Pain Medicine, Chonbuk National University Medical School & Chonbuk National University Hospital, 20, Gunji-ro, Deokjin-gu, Jeonju 561-710, Korea. Tel: 82-63-250-1250, Fax: 82-63-250-1240, E-mail: leesk@jbnu.ac.kr

© This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/3.0/>), which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

channel until the glottis opening is visualized. Sometimes, a jaw-thrust maneuver by an assistant anesthesiologist is very helpful if we cannot see the glottis opening easily. When the glottis opening is visualized, the distal end of the fiberoptic cable is forwarded and advanced further inside the tracheal lumen. Then, the Lee airway is removed from the oral cavity before forwarding the tracheal tube into the oral cavity, and the trachea is subsequently intubated by rail-roading the tracheal tube over the fiberoptic cable. We have performed orotracheal fiberoptic intubation in many patients using the Lee airway with almost 100% success rate. And we finished the orotracheal fiberoptic intubation procedure in each patient within 30 seconds.

The Lee airway can be used as a guide for orotracheal fiberoptic intubation and an oropharyngeal airway. The 8 mm width of the longitudinal anterior channel is not so much wide that a portion of the tongue cannot slide into the lumen of anterior channel. Similarly to the Lee airway, we also modified a conventional Guedel Airway into a modified Guedel Airway with posterior channel (picture not shown here) which had several advantages over the anterior channel. However, the Lee airway might be more useful in patients with an excessively anteriorly displaced larynx because of its anterior channel. The only drawback is that the Lee airway cannot be used in patients with small mouth openings.

Reference

1. Atlas GM. A comparison of fiberoptic-compatible oral airways. *J Clin Anesth* 2004; 16: 66-73.