Use of the laryngeal tube as a dedicated airway during tracheal intubation

Editor—We were interested to read Genzwuerker and colleagues’ article on fibreoptic guided intubation via the Laryngeal Tube™ (LT).¹ They report a 90% success rate for tracheal intubation in 10 patients with the procedure performed by an experienced fibreoptic intubator after previous practice with the device on a mannequin. In one of the nine successful patients the first attempt led to oesophageal intubation. The glottis was seen via the laryngeal tube in six of the 10 cases without manipulation of the LT; in another three, rotation of the device brought at least part of the glottis into view.

The authors comment that ‘the specific configuration of the aperture of the laryngeal tube guides the tip of the flexible fibreoptic bronchoscope more towards the glottis than would be the case with the standard laryngeal mask’. This statement is unsupported by a reference, and we would find it difficult to agree with.

The LT was modified in September 2001 (Personal Communication, VBM). Amongst several changes, the distal part of the proximal cuff was modified and the orifices between the two cuffs were altered and increased in number to lessen the likelihood of airway obstruction (Fig. 1). The shape of the proximal cuff was also modified. From the figures published, it is unclear whether Genzwuerker and colleagues¹ performed their study with the old version of the LT (which is no longer marketed in the UK), or with the currently available device.

We have conducted a comparative study between the LT and the ProSeal™ laryngeal mask airway (PLMA).² Our study was performed with the current version of the LT. As part of this study, we performed fibreoptic laryngoscopy through 32 LTs and 32 PLMAs during use. We did not perform any manoeuvres to optimize the view of the glottis. The airway was graded as: 1=glottis fully visible; 2=glottis partially visible; 3=epiglottis only visible; or 4=no laryngeal structures visible. Through the LT, the glottis was visible in 13 of 31 instances (seven grade 1, and six grade 2), with one LT being impossible to insert. We found no correlation between the fibreoptic view of the airway and effective ventilation. Through the PLMA, the glottis was visible in 29 cases (26 grade 1, and three grade 2). There were 14 cases in the LT group where no glottic structures were visible, and none in the PLMA group. Differences in grade of view between the groups were statistically significantly different (Wilcoxon paired rank test \(P<0.0001\)).

Our results (studying patients of similar height and weight to those in Genzwuerker’s article, but including six patients with Mallampati scores of 3), suggest that the glottis is visible through the ventilation holes of the LT in \(<50\%\) of cases. We would therefore question whether the LT is the best device to use for catheter exchange tracheal intubation, even when a fibrescope is used. In our study, the PLMA offered a far better view of and access to the glottis. It is recognized, from other studies, that the classic LMA provides at least as good a view as the PLMA.³ ⁴

Fig 1 Orifices of the new laryngeal tube. (1) proximal large, (2) distal large, (3) and (4) lateral small.

¹LMA® is the property of Intavent Limited.
Fig 2 Pathway of flexible fibreoptic bronchoscope inside the distal lumen of the laryngeal tube (left) and LMA Classic™ (right).

Although a tube exchange manoeuvre was not attempted by Cook and colleagues through the PLMA, they suggest it might be superior to the LT from their fibreoptic view results. Whether the fibreoptic view through the LMA Classic™ is comparable with the view through the PLMA must be questioned in the light of studies reporting partial visualization of the oesophagus in up to 15% of cases, and a correct, central position in only 59% of patients successfully ventilated with the standard LMA.8 The PLMA provides a better seal of the airway, allowing higher peak pressures compared with the LMA Classic™, because of its different shape and an additional posterior cuff.2 Other authors found significant differences in the airway seal in favour of the LT compared with the LMA Classic™.9 10 For the old version of the LT, oropharyngeal leak pressure was comparable with the PLMA.11 A comparison of the PLMA and the new LTS (‘Laryngeal Tube Suction’), which was introduced in 200312,13—both devices providing an additional oesophageal drain tube—has not been published to date, but studies are under way.

Ventilatory characteristics, airway seal, ease of insertion, and acceptance by personnel are variables that should be considered as well as the fibreoptic view when searching for the best airway device to perform not only fibreoptic-aided tube exchange manoeuvres, but—more importantly—emergency ventilation, as an alternative to tracheal intubation and face mask ventilation in a ‘cannot intubate—cannot ventilate’ situation. We described the possibility of a manoeuvre in a high percentage of patients using the standard LT, a flexible fibreoptic bronchoscope and a tube exchange catheter after adequate ventilation was achieved in all patients.

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