Letter to the Editor

One-hand maneuver to facilitate flexible fiber-optic bronchoscope-guided nasotracheal intubation in sedated patients

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To the Editor,

Flexible fiber-optic bronchoscope-guided nasotracheal intubation (FNI) is a useful technique when we encounter patients scheduled for oral and facial surgeries. There are various ways to perform nasotracheal intubation. Traditionally, we use direct laryngoscope with the aid of Magill forceps after smoothly inserting the tracheal tube through the nostril. Fiber-optic guided techniques are an alternative way to perform nasal tracheal intubation, especially in patients with difficult direct laryngoscopy, or when guidance via the nasal route is favored.

Performing FNI in awake patients is crucial when difficult airway conditions are anticipated. Sedation impedes the airway because of the dropping tongue, epiglottis, and soft palate, making bronchoscope-guided intubation more challenging.1 In some circumstances, we perform FNI not because of difficult airways but when guidance in the nasal route is favored, and we finally check the position of the tip of the tracheal tube when the fiber-optic bronchoscope is withdrawn. The risk of airway obstruction in these patients is less, and we may sedate these patients prior to FNI to avoid the uncomfortable sensation caused by awake intubation. Inadequate bronchoscopic view to see the glottic inlet in sedated

Figure 1. (A) One-hand maneuver to hold the optic fiber and perform chin lifting (little finger below the mandible angle, ring finger below mandible body and middle finger under the mental area; index finger and thumb holding the optic fiber); (B) glottic view under bronchoscope without one-hand maneuver in the sedated patient; and (C) glottic view under bronchoscope with one-hand maneuver in the sedated patient (CCH IRB No: 150411).

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patients is a challenge to anesthesiologists. Head tilting and chin lifting have been reported to improve the glottic view under bronchoscopy and to facilitate FNI. Operators who perform FNI in sedated patients usually need a helping hand for the head tilting and chin lifting. However, inadequate chin lifting makes the bronchoscopic view obscure, and excess chin lifting may overextend the cervical spine. Therefore, sufficient communication and understanding between the operator and the assistant are required to optimize the degree of chin lifting and head tilting, which may be somewhat time-consuming.

We suggest the one-hand maneuver should be applied to maintain the airway patency while performing FNI in sedated patients. As shown in Figure 1, by putting the little finger below the mandible angle, the ring finger below the mandible body, and the middle finger under the mental area, we could manipulate the degree of chin lifting according to the bronchoscopic view. The optical fiber is held by the thumb and index finger in the ipsilateral hand. Apart from holding the fiber-optic bronchoscope, this gesture mimics the one for one-handed facemask ventilation. By applying this maneuver, the operator could simultaneously insert the bronchoscope and lift the chin on his own. The spared assistant could either help with subsequent intravenous drug injection, or airway suctioning and maintenance as needed. This could be an advantage for anesthesiologists in the emergency department, where operators may perform FNI when traditional tracheal intubation is technically difficult. Sometimes, unconsciousness and tongue-dropping in these patients may result in a poor laryngeal view under bronchoscopy. The application of this one-hand maneuver could also be time-saving, but also minimizes the unnecessary overextension of the neck, and reduces the need for assistance. Operators might require additional assistance when encountering increasing difficulties while performing the one-hand maneuver in patients with risks of difficult mask ventilation such as morbid obesity, edentulous, the male sex, obstructive sleep apnea, presence of beard, or increased neck circumference. We suggest that the one-hand maneuver is not suitable for abecedarians, and there should be a trained assistant available in case of finger and hand fatigue or other unpredictable conditions.

**Conflicts of interest**

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**References**


Chih-Kai Shih*, Chia-Ching Wu, Tsai-Tsen Ji
Department of Anesthesiology, Changhua Christian Hospital, 135 Nanxiao Street, Changhua City, Changhua County 500, Taiwan, ROC

* Corresponding author. 135 Nanxiao Street, Changhua City, Changhua County 500, Taiwan, ROC

E-mail address: kaninkmu@yahoo.com.tw (C.-K. Shih).