

LETTER TO THE EDITOR

Open Access



Comparing video and direct laryngoscopy for tracheal intubation in the general ward

Liu-Jia-Zi Shao, Fu-Shan Xue^{*} , Rui-Juan Guo and He Yang

Editor,

In a retrospective study by Baek et al. [1] comparing video laryngoscopy (VL) and direct laryngoscopy (DL) for intubation in the general ward, they showed that the use of VL was associated with a higher first-attempt success rate, but did not reduce intubation-related complications. The strengths of this study are a large sample and the use of consistent patients needing urgent intubation in the general ward by medical emergency team. Furthermore, the authors had applied right statistical methods including multivariable logistic regression analysis, propensity-score matching and subgroup analysis to determine associations of studied devices and intubation outcomes. Other than the limitations described in discussion, however, there are several issues in this study that need further discussion and clarification.

First, authors did not provide the positions of patient's head during laryngoscopy and intubation. Because the use of DL to obtain the laryngeal visualization requires alignment of the oral, pharyngeal and laryngeal axes, a sniffing position is often recommended for intubation with DL. In contrast, the use of VL to visualize the larynx does not require alignment of three airway axes. Thus, intubation with VL has no specific requirement of patients' head position [2]. We believe that ignorance of this factor would have biased the intubation outcomes in the favor of VL.

Second, to predict difficult airways, several factors including blood/vomit/secretion in the airway, cervical

immobilization, neck trauma/mass or vocal cord palsy, 3-3-2 rule, short neck, obesity, limited mouth opening, small mouth and large tongue, were assessed before intubation. It is usually considered that no single factor can accurately predict difficult airway as each factor individually has a rather low positive predictive value. If a patient has more predictors of difficult airway at the same time, however, the likelihood of difficult airway will increase [3]. For this reason, the National Emergency Airway Management Course has developed a LEMON score for identification of difficult airways in the emergency setting [4].

Third, main reasons for intubation in this study were respiratory failure and airway protection, but median intubation time with DL and VL was long up to 4 min. Other than first-attempt success rate, intubation time also is a concern for critical patients requiring urgent intubation, especially patients at risks of hypoxia and aspiration [5]. We are argued that this study would have provided more useful information about the choice of two intubation devices in the general ward, if a reasonable cutoff time had been included in the definition of first-attempt success rate.

Finally, experience and competency with VL and DL are critical for successful intubation. Because frequency and number of using two devices before study were not provided, the definitions that divided experienced and inexperienced intubators in this study could not accurately indicate the competency levels of intubators with VL and DL. Thus, it is difficult to determine whether a higher first-attempt success rate with VL is really attributable to a better performance. We are concerned that the results of this study may only map different learning curves of DL and VL for intubators, and do not measure the real efficiency of studied devices for urgent intubation in the general ward.

*Correspondence: xuefushan@aliyun.com

Department of Anesthesiology, Beijing Friendship Hospital, Capital Medical University, NO. 95 Yong-An Road, Xi-Cheng District, Beijing 100050, People's Republic of China
This comment refers to the article available at <https://doi.org/10.1186/s13613-018-0428-0>.

Abbreviations

VL: video laryngoscopy; DL: direct laryngoscopy.

Authors' contributions

LJZS, FSX, RJG and HY carefully read the manuscript by Baek et al. and analyzed their methods and data. LJZS suggested comment points and drafted this manuscript. FSX, RJG and HY revised the comment points and this manuscript. All authors read and approved the final manuscript.

Acknowledgements

All authors have no financial support and potential conflicts of interest for this work.

Competing interests

The authors declare that they have no competing interests.

Availability of data and materials

Not applicable.

Consent for publication

Not applicable.

Ethics approval and consent to participate

Not applicable.

Funding

None.

Publisher's Note

Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Received: 6 November 2018 Accepted: 20 December 2018

Published online: 30 January 2019

References

1. Baek MS, Han M, Huh JW, Lim CM, Koh Y, Hong SB. Video laryngoscopy versus direct laryngoscopy for first-attempt tracheal intubation in the general ward. *Ann Intensive Care*. 2018;8:83.
2. Rothfield KP, Russo SG. Videolaryngoscopy: should it replace direct laryngoscopy? a pro-con debate. *J Clin Anesth*. 2012;24:593–7.
3. Natt BS, Malo J, Hypes CD, Sakles JC, Mosier JM. Strategies to improve first attempt success at intubation in critically ill patients. *Br J Anaesth*. 2016;117(Suppl 1):i60–8.
4. Apfelbaum JL, Hagberg CA, Caplan RA, Blitt CD, Connis RT, Nickinovich DG, et al. American Society of Anesthesiologists Task Force on Management of the Difficult Airway. Practice guidelines for management of the difficult airway: an updated report by the American Society of Anesthesiologists Task Force on management of the difficult airway. *Anesthesiology*. 2013;118:251–70.
5. Soyuncu S, Eken C, Cete Y, Bektas F, Akcimen M. Determination of difficult intubation in the ED. *Am J Emerg Med*. 2009;27:905–10.

Submit your manuscript to a SpringerOpen[®] journal and benefit from:

- Convenient online submission
- Rigorous peer review
- Open access: articles freely available online
- High visibility within the field
- Retaining the copyright to your article

Submit your next manuscript at ► [springeropen.com](https://www.springeropen.com)
