Does really selection of nostrils affect performance of nasotracheal intubation with nasotracheal Airtraq®?

Liu-Jia-Zi SHAO, Shao-Hua LIU, Fu-Shan XUE*

Department of Anesthesiology, Beijing Friendship Hospital, Capital Medical University, Beijing, People's Republic of China.

*Correspondence: xuefushan@aliyun.com; fushanxue@outlook.com (F.S. Xue)

ORCID:

First AUTHOR: https://orcid.org/0000-0002-8888-1804

Second AUTHOR: https://orcid.org/0000-0002-9374-0192

Third AUTHOR: https://orcid.org/0000-0002-1028-6036

Address reprint requests to Prof. Fu-Shan Xue, MD, Department of Anesthesiology, Beijing Friendship Hospital, Capital Medical University, NO. 95 Yong-An Road, Xi-Cheng District, Beijing100050, People's Republic of China.

Tel: 86-13911177655
Fax: 86-10-63138362
Email: xuefushan@aliyun.com; fushanxue@outlook.com (F.S. Xue).

Abbreviated title: Airtraq for nasotracheal intubation

Keywords: Airway management; Nasotracheal intubation; Nasotracheal Airtraq

The word counts of this correspondence are 734. There are 6 references, no figure and table.


None of the authors received financial support and had potential conflicts of interest for this work.
Acknowledgements

Name: Liu-Jia-Zi Shao, MD.

Contribution: This author had carefully read the paper of *Arslan et al.*, and analyzed their data, suggested the comment points and drafted this manuscript. **Liu-Jia-Zi Shao** had seen and approved the final manuscript.

Name: Shao-Hua Liu, MD.

Contribution: This author had carefully read the manuscript of *Arslan et al.*, analyzed their methods and data, revised the comment points and this manuscript. **Shao-Hua Liu** had seen and approved the final manuscript.

Name: Fu-Shan Xue, MD.

Contribution: This author had carefully read the manuscript of *Arslan et al.*, analyzed their methods and data, revised comment points and this manuscript, and is the author responsible for this manuscript. **Fu-Shan Xue** had seen and approved the final manuscript.
To the Editor,

In the recent article by Arslan and Türkyilmaz [1] comparing performance of nasotracheal intubation (NTI) with the nasotracheal Airtraq® (Airtraq NT®) between the right and left nostrils, they showed that NTI could be completed in a shorter time through the right nostril than through the left nostril. Furthermore, both the external laryngeal pressure and head flexion eased the NTI from the left nostril. These findings have the potential implications for improvement of patient safety during the NTI with the Airtraq NT®, but we noted several issues in this study that might have influenced interpretation of the study results, and invite them to comment on these.

First, the readers were not provided with the details of NTI using the Airtraq NT®. According to their figures 4 and 6, the Airtraq NT® was inserted into the airway by a midline approach. It must be pointed out that the imaging channel of the Airtraq NT® is at the left side of the blade [2]. When a midline insertion approach is used and the endotracheal tube is introduced through the right nostril, thus, more room is allowed for manipulations of the Airtraq NT® and endotracheal tube, and the use of Magill forceps on the right side of the oropharynx. However, a midline insertion approach can significantly affect observation and manipulation of endotracheal tube inserted into the left side of the oropharynx via the left nostril and the use of Magill forceps. This may be a potential reason for more uses of auxiliary maneuvers and a longer intubation time with the NTI through the left nostril in this study. Our experience suggests that when endotracheal tube is inserted via the left nostril, the Airtraq NT® should be inserted by a left approach, just like direct laryngoscopy. This can facilitate the NTI with the Airtraq NT® via the left nostril [3].

Second, in this study, a cuffed spiral lateral beveled endotracheal tube was used for NTI. Due to the lack of inherently anterior curvature, this endotracheal tube may often result in a posterior tube tip positioning. Thus, the auxiliary maneuvers including the rotation of endotracheal tube, external laryngeal pressure, cuff inflation, head flexion and use of Magill forceps, are often required to direct tube tip into the glottic opening. In contrast, with a good laryngeal exposure using the Airtraq NT®, the convenient or performed PVC
endotracheal tubes with inherently anterior curvature help to guide tube tip into the glottic opening. Thus, we argue that the different results would have been obtained, if the convenient or performed PVC endotracheal tubes were used in this study.

Third, in methods, the authors described that when a resistance was felt during the tube adjustment, the auxiliary maneuvers including 90° counterclockwise rotation of tube, external laryngeal pressure, cuff inflation, head flexion, changing the operator, use of Magill forceps, were applied in random order. It was unclear why these auxiliary maneuvers were used in random order. Actually, these auxiliary maneuvers should be selected based on requirement for adjustment of inadequate tube tip positioning [4,5]. For example, the external laryngeal pressure is suitable for a posterior tube tip positioning, head flexion for an anterior tube tip positioning, 90° counterclockwise rotation for a right tube tip positioning and cuff inflation for a lateral or posterior tube tip positioning. Especially, we restate that the Airtraq NT® provides an additional space to facilitate passage of Magill forceps due to the absence of a tube-guiding channel, but a greater distal angulation of its blade may render the use of Magill forceps very awkward. Furthermore, the use of Magill forceps can result in a risk of cuff damage [3].

Finally, in this study, a random selection of the right and left nostrils was used for NTI. Furthermore, both NTI time and total NTI time were regarded as important study endpoints. Because examination of nasal cavity was not included in airway characteristics of patients, it was unclear whether two groups were comparable with regard to the patency degree of the nostrils. It must be emphasized that anatomic aberrations of nasal cavity are common; septal deviations and septal spurs together with turbinate hypertrophy often imply that one nasal cavity is more suitable for passage of an endotracheal tube than the other [6]. Thus, we are concerned that the unbalanced data of nasal anatomy would have biased the performance of NTI with the Airtraq NT®.

We believe that addressing above these issues will further clarify the transparency of this study and avoid any optimistic interpretation or misinterpretation of study results.

References


