Reviewer’s report

Title: Role of tube size and intranasal compression of the nasotracheal tube in respiratory pressure loss during nasotracheal intubation: a laboratory study

Version: 7 Date: 17 Jul 2017

Reviewer: Yasuko Nagasaka

Reviewer's report:

Dear Authors,

We appreciate your prompt response.

Your study is very interesting and we would very much like to see it published as soon as possible. After efforts over many revisions, I feel that your paper is getting close to publication.

For current revision R7, Reviewer 3 has given important suggestions.

I do understand some of your concerns, however, overall goal is to finalize this paper in a suitable form for publication.

To help make this happen, please consider changing according to the reviewer's and my comments for the revision - please see below.

I hope these comments help improve your manuscript.

Yasuko Nagasaka, MD PhD
Reviewer and Associate Editor, BMC Anesthesiology

R7 Reviewer 3's comments:

Major

Introduction (Pg 6 Ln 7)

The last 2 paragraphs of the introduction provide more detailed information on the theoretical under pinnings of the experiments. These would be better moved to the Discussion section.
Authors' response:

In revision #2, we wrote the reason why the methods and principles for measuring the pressure loss across the tube were chosen in this study in Background. Although the description may be excessive for Background, we think the description in Background will help the reader to understand the content of this study, especially the predicting formula using in Methods. Reviewer 2 noted as "The explanation in the background was changed to make the content of this study easier to understand". Thus, we did not move the last 2 paragraphs of Background.

Reviewer's comments:

The first part of the introduction part is well written.

However, I do agree with Reviewer #3, as the introduction section is too long.

Please move the mentioned last two paragraphs to the Discussion, or the Methods section.

Conversely, you may provide organized summary of principles in the introduction part then write in detail in other sections.

Minor Comments

Minor Comment 1:

Abstract, Introduction:

During nasotracheal intubation, small nasotracheal tubes (NTTs) and intranasal compression of the NTT in the nasal cavity may contribute to increasing airway resistance.

Please change to:

Small nasotracheal tubes (NTTs) and intranasal compression of the NTT in the nasal cavity may contribute to increased airway resistance.

Minor Comment 2:

Abstract, Introduction:

Physical and fluid dynamics simulations were used to evaluate the factors affecting respiratory pressure loss during nasotracheal intubation.
Please move this sentence to the beginning of the Method section, and change to:

To determine the factors affecting the respiratory pressure loss during the nasotrachal intubation, physical and fluid dynamics simulations were used.

Please also add a single sentence what exactly is unknown and why this study was initiated, in the Introduction part of the Abstract.

Minor Comment 3:

P. 15, Lines 52-55

The calculated equivalent diameter ranged from 4.50 mm in a 6.0-mm ID tube compressed to a minor axis of 3 mm, to 8.0 mm in an uncompressed 8.0-mm ID tube (Fig. 4a).

It seems that you are trying to write "from" "to" sentence.

However, the parts are scattered and I cannot tell which "from" belongs to which "to".

I assume Part 1 of this sentence:

diameter ranged from: 4.50 mm (6.0-mm ID tube)

compressed to: a minor axis of 3 mm

And Part 2 of this sentence:

diameter ranged from: 4.50 mm (6.0-mm ID tube)

compressed to: 8.0 mm in an uncompressed 8.0-mm ID tube

Then this part (Part 2) does not make sense.

Thus, this is very hard to understand.

Please clarify.

Minor Comment 4:

Page 17, Line 4:

In this study we demonstrated that pressure loss through NTT was greater than through a standard oral endotracheal tube at sizes of 6.0, 6.5, 7.0, 7.5 and 8.0-mm ID NTT.
Please remove this end 'NTT' as it does not make sense.

Otherwise, please explain why oral ETT is NTT.

Minor Comment 5:
Results-Figures 3-5: if you mention "relationship", you will be asked to report correlation coefficient. Please indicate or comment.

Minor Comment 6:
Figure 5: please change to Figure 4-e

Minor Comment 7:
Results-Figure 5 (future Figure 4-e): please mention why the results from 6.0, 6.5, 7.0 tubes are so similar.

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

Yes

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics
Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

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