Reviewer's report

Title: Endotracheal Tube Cuff Pressure

Version: 1 Date: 22 July 2004

Reviewer: Fujio Karasawa

Reviewer's report:

General

This is a clinically relevant study that focuses the accuracy of estimating cuff pressure by finger palpitation of the pilot balloon. The conclusion may be supported by the data shown, although the authors measured the cuff pressure only at 60 min after induction of anesthesia. Presumably, descriptions of the method is insufficient, because there is no mention of the criteria to determine the air volume required to inflate the cuff after tracheal intubation and to adjust the cuff pressure during routine practice. These might be important factors in testing the hypothesis that estimation of cuff pressure by finger palpitation of the valve pilots is inaccurate.

The authors demonstrated additional data (i.e. the amount of air and a pressure-volume relationship), although there are few discussions about these in the article. The reviewer could suggest the following, which the authors may take into consideration in modifying their discussion. Because of considerable variations of the volume required for 20 cm H2O, it should not be recommended to inflate cuffs with air of the mean volume in the management of cuff pressure, which might be supported by the pressure-volume relationship that also varies widely.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

Method:
1. Please specify criteria to decide the air volume required to inflate the cuff after tracheal intubation. Also, criteria to adjust the cuff pressure during anesthesia should be needed in the protocol.
2. What is the choice of tube-sizes based on? This factor is important to assess the volume of air required to inflate cuffs, because the results may be highly affected.
3. Some endotracheal tubes have relatively large pilot balloons. Please state what kind of endotracheal tubes were used in the study.
4. Did the authors measure compliance of the manometer? Some manometers have a large compliance, decreasing the cuff pressure when the manometer is connected to the pilot balloon through a three-way stopcock.
5. When the patients were ventilated, were they adequately paralyzed? Did the authors measure the cuff pressure during the end-expiratory phase?
6. The number of practitioners (CRNAs, anesthesia residents, and anesthesia faculty) was considerably different. Can the authors do a power analysis to show the number of the subjects required to find a significant difference?
7. Cuff pressure was checked and adjusted by the anesthesia provider after practitioners initially inflated the cuff. Please mention the real purpose for inspecting the difference among three practitioners.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the
I am concerned about the title. The title should be more informative, accurately reflecting the study. First paragraph in Results: “50%” should be replaced with “Fifty per cent”. First paragraph in the Discussion should be moved to the Introduction. First line in Conclusion: Please substitute “anesthetic” for “aesthetic”. Principal results in Table 1 should be divided from Demographic and Morphometric Characteristics data. Fig. 1, 2, and 3 could be removed because those data are presented in Tables.

Discretionary Revisions (which the author can choose to ignore)

Readers can easily comprehend the aim of this research article if the introduction is more concise and focuses on it. Please shorten the introduction. Results: How many times did the provider check and adjust cuff pressure during an hour?

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

Level of interest: An article of limited interest

Quality of written English: Acceptable

Statistical review: No

Declaration of competing interests:

None.