Reviewer’s report

Title: Airway Sizes and Proportions in Children Quantified by a Video-Bronchoscopic Technique

Version: 1 Date: 9 January 2006

Reviewer: Raanan Arens

Reviewer’s report:

General
This study evaluated upper airway size using video-bronchoscopy in 125 children younger than 10 years. The authors assessed with this technique the cross sectional area at the level of the cricoid, RMS, LMS and major lobar bronchi. They assessed also the size of the airway relative to the cricoid size and the ETT. Their findings suggest: 1) A proportional growth of the airway with age. 2) Larger RMS compared to LMS and 3) No gender differences in upper airway cross sectional area. Overall this is a well written and an interesting study. I can appreciate the technical difficulties with such a study. However, my main concerns relate to the Methodology and the Conclusions.

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

Major Comments:
1. The authors’ assessment of upper airway size was based on cross sectional area measurements at specific airway locations. However, upper airway size during development should also include its length for assessment of linear growth and estimated volume of the large airways. Such a study would be more comprehensive and lead to more definite conclusions.
2. The authors’ finding of no gender difference in airway size was based on cross sectional area measurements alone. However, as mentioned above since linear measurements were not performed, it is possible that such a difference does actually exist. In the Discussion, the authors explain that differences in lung function noted between genders by other authors may be related to small airway differences. This explanation is possible. However, based on the limitation of the present study, I think we can not rule out changes in large airway size at this time based on the data presented.

Minor Comments:
1. Anthropometric data on both genders presented as Z-score would be helpful. Did both genders have similar height, weight, and BMI?

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

Discretionary Revisions (which the author can choose to ignore)

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

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** No

**Declaration of competing interests:**

I declare that I have no competing interests'

Raanan Arens