Xylometazoline pretreatment reduces nasotracheal intubation-related epistaxis in paediatric dental surgery

Editor—The recent article by El-Seify and colleagues, 1 which evaluates an admixture of lidocaine gel and xylometazoline in reducing epistaxis after nasotracheal intubation (NTI) in children, has raised several points which deserve further discussion. In the methods, the authors have curiously omitted the estimation formula and size (internal diameter) of cuffed tracheal tubes used in their study. The age range in their study population is from 2 to 6 yr and based on the traditional formula for estimating the size or internal diameter of a paediatric cuffed tracheal tube: 2

\[
\text{cuffed endotracheal tube size (mm)} = \frac{\text{age in years} \times 4 + 3}{\text{external diameter of tracheal tube (mm)} + 4.5}
\]

Thus, if tubes sized 3.5–4.5 mm which are manufactured by P3 Medical Ltd, Bristol (a preformed siliconized soft flexible medical tube), is somewhat bigger than the ordinary polyvinyl chloride (PVC-based) tube. However, a previous study 2 comparing a silicone-based tube with a PVC-based tube for nasotracheal intubation found that the incidence of epistaxis was 32.5% with silicone tracheal tubes and 80% with PVC tubes. Accordingly, the rate of smooth intubation (navigability) was high in both groups of our study. The relatively high incidence of persistent epistaxis (9.8%) reported in the control group. My second point also concerns the methods and the inadequate description of how the authors were able to determine the most patent nostril for NTI in paediatric patients. Nasal air-flow assessments using direct questioning is in my experience unlikely to provide accurate or reliable data in pre-school patients. Similarly, patient cooperation with an examination-based assessment of nasal air-flow may be subject to error or observer bias. Interestingly, their results show a significant preference in both groups for intubation via the right nostril (78%). Owing to the poor reliability of air-flow based assessment, I believe that a random method of nostril selection may have provided different results and conclusions to those published. It has previously been shown in adults that fibreoptic nasendoscopy is a more reliable method of determining the most patent nostril than subjective air-flow assessments. 3 While the results from a comparable paediatric study have yet to be published, a careful and atraumatic fibreoptic examination of the nasal pathways could have been used to confirm the most patent nostril in this study.

Conflict of interest

None declared.

J. L. Tong*
Birmingham, UK
*E-mail: j.l.tong@bham.ac.uk

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Reply from the authors

Editor—We thank Dr Tong for his interest in our study and for his comments. 1 The suitable size of nasotracheal tube (NTT) was determined not only on the basis of formula estimation of the size; but also on the physical examination and facial configuration of the child. We agree that the external diameter of NTT manufactured by P3 Medical Ltd, Bristol (a preformed siliconized soft flexible tube), is somewhat bigger than the ordinary polyvinyl chloride (PVC-based) tube. However, a previous study 2 comparing a silicone-based tube with a PVC-based tube for nasotracheal intubation found that the incidence of epistaxis was 32.5% with silicone tracheal tubes and 80% with PVC tubes. Accordingly, the rate of smooth intubation (navigability) was high in both groups of our study. The relatively high incidence of persistent epistaxis (9.8%) reported in the control group in comparison with 0% in the study group supported our conclusion regarding the efficacy of xylometazoline in reducing epistaxis. According to the suggestions given by the peer reviewers and the section-editor, we have done some reductions in the manuscript before publishing it, we removed the description of the method of identifying the patent nostril which was based on the history from parents and preoperative examination by the airway patency test, where estimation of the rate of airflow through each nostril during expiration by palpating the passage of air when the contralateral nostril was occluded. Right nostril was chosen if patency appears equal in both sides of the nose, which is also more convenient for the right-handed

4 Smith JE, Reid AP. Asymptomatic intranasal abnormalities influencing the choice of nostril for nasotracheal intubation. Br J Anaesth 1999; 83: 882–6

Correspondence