



FIGURE Gastric pH and volume of patients undergoing elective and intrapartum Cesarean deliveries. Mean (SD) gastric pH and volume were 2.4 (1.5) and 36 (30.6) mL respectively in the elective group and 2.4 (1.3) and 30.6 (25.1) mL respectively in the intrapartum group. Bold lines at pH = 2.5 and volume = 25 mL.

of patients considered to be at risk: pH < 2.5 and volume > 25 mL in the two groups were similar (38.3% vs 38.5%). In the elective group, there were significant correlations between gastric pH and fasting time, and between gastric volume and serum gastrin and glucose concentration. In the intrapartum group, there was a weak correlation between gastric pH and volume and preoperative anxiety and glucose concentration.

There were different risk factors of acid aspiration syndrome between elective and intrapartum Cesarean deliveries, in spite of a similar overall risk of this complication. Therefore, prophylaxis for acid aspiration should be considered in each patient according to the risk factors in elective and intrapartum cases.

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### References

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### Internal or external diameter?

To the Editor:

We read with interest the report by Dillier *et al.*<sup>1</sup> on a case of laryngeal damage in an infant caused by a too large and inappropriately designed cuffed tracheal tube.

We also found a difference of 2 mm in external diameter between two tracheal tubes (produced by Rusch and Mallinckrodt respectively) having the same internal diameter (5 mm; Figure).

Interestingly, the American Society for Testing and Materials standards for tracheal tubes contain certain requirements for tracheal tubes (i.e., internal diame-



FIGURE Different external diameters of two tracheal tubes having the same internal diameter (5.0 mm). Top: Rusch (9.51 mm); Bottom: Mallinckrodt (7.48 mm).

ter, cuff, Murphy eye, etc.) but do not include recommendations about external diameter.<sup>2</sup>

While internal diameter is important for the airway resistance, the magnitude of the external diameter may play a role in the development of postintubation airway edema, postintubation croup and subglottic stenosis in pediatric patients. Therefore, when choosing a certain size of tracheal tube in children, both internal and external diameters should be taken into account.

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#### References

- 1 Dillier CM, Trachsel D, Baulig W, Gysin C, Gerber AC, Weiss M. Laryngeal damage due to an unexpectedly large and inappropriately designed cuffed pediatric tracheal tube in a 13-month-old child. *Can J Anesth* 2004; 51: 72–5.
- 2 American Society for Testing and Materials. Standard Specifications for Cuffed and Uncuffed Tracheal Tubes (ASTM F1242-89). Philadelphia: ASTM; 1989.

#### REPLY:

We would like to thank Ezri *et al.* for their interesting comments on our case report.<sup>1</sup> Their illustrations confirm that wire-reinforced tubes not only have a larger outer diameter (OD) than conventional pediatric polyvinyl chloride tracheal tubes but also that similarly designed tubes with identical internal diameter (ID) provided by different manufacturers can reveal large differences in OD.<sup>2</sup>

We agree that anesthesiologists should take into account both the internal as well as the external diameter when selecting tracheal tubes in children, as mentioned in our case report. Whereas the OD is the more reliable measure when selecting an uncuffed pediatric tracheal tube with appropriate fit and seal in the trachea, for the use of cuffed pediatric tracheal tubes, however, the OD is not essential for tracheal sealing and thus the ID-dependent formulas are usually used.<sup>2–5</sup> Furthermore, most anesthesiologists routinely use the internal tube diameter for age-dependent selection of tracheal tubes in children<sup>3</sup> and tracheal tubes are categorized and provided by the manufacturers according to their ID.

*Since there are no standardized guidelines for OD in pediatric tracheal tubes and not all anesthesiologists use and know OD formulas for tracheal tube size selection in children, manufacturers should provide specific product-related data for pediatric tube size selection on their tube package.<sup>2</sup>*

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- 5 Khine HH, Corrdry DH, Kettrick RG, *et al.* Comparison of cuffed and uncuffed endotracheal tubes in young children during general anesthesia. *Anesthesiology* 1997; 86: 627–31.

#### More on the destruction of the ProSeal™ LMA

To the Editor:

We were interested in the letter to the editor by Jolly *et al.*<sup>1</sup> and would also like to voice cautionary tales concerning cleaning and processing of the new ProSeal™ laryngeal mask airway (LMA; Laryngeal Mask Company, Henley-on-Thames, UK). Last year we had three cases where a drain tube leak was detected by the soap membrane test following insertion of the airway into the patient and positive pressure ventilation. After removal, it was discovered that each ProSeal had a hole in the drain tube, as shown in the Figure. All three occurred in nearly identical locations. After the third incident we determined that the cause of injury was the use of an inappropriately large and