higher in Fyman's report, despite the fact that the sufentanil dose was 24-fold higher in Bovill's study!

It is difficult to understand how the authors reached the conclusion they did. The gross appearance of the graph in their report suggests that sufentanil elimination is impaired in these patients. The parameter estimates provided in the table appear unreliable, as they do not interconvert accurately (or even approximately), nor do they agree with the appearance of the graph. It would be desirable for the authors to publish a clarification, perhaps including more data and a more detailed description of their pharmacokinetic analysis.

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REPLY

We appreciate the comments of Kramer et al. and would like to address them by clarifying the statistical analysis methods employed in the study. The sufentanil plasma decay curve illustrated in the Figure represents mean $\pm$ SEM of patient data at specified blood sampling times. Data were indeed collectively fitted using a two compartment model; however, the corresponding smooth curve does not appear in the article. Instead, data were illustrated as in the Figure to provide the reader with an idea of the high variability observed in the study. While we agree that an illustration of the curvilinear decay plot would have been valuable, and that the figure legend should not indicate a two compartment fit, the decay profile does suggest a two compartmental character.

The apparent discrepancy between the α and β half-lives reported in the table and those derived by transforming the α and β rate constants from the line of best fit can be explained by examining the way data were collected and reported. Initially, each patient data set was individually fitted to a two compartment model using the NONLIN procedure in the

Statistical Analysis System (SAS) program. The variables A, α , B and β were then computed for each patient. The values reported in the Table represent the arithmetic mean $\pm$ SEM of the individually derived variables. In presenting the data in this manner, the reader is made aware of the inherent variability observed in the study. By deriving the half-lives of the two compartment model, one reports the half-lives of the average data and not average of the half-lives as observed in the individual patients (as reported in the Table). The importance of reporting averages of the individual data is clearly evident in the case of the β half life (176 minutes) with an SEM of 86 minutes. As seen in all values listed in the Table, the data were highly variable. Although an illustration of scatter around the line of best fit would have also showed this variability, to have simply reported the average A, α , B and β , and derived half-lives from the averaged variables would have unduly masked the variability. Finally, the inconsistency between the minimal decay observed from 120 to 360 minutes and the values predicted using the equation in the legend is again attributable to high variability about average values and the way data were plotted in the figure.

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The Montando laryngectomy tube

To the Editor:

Anaesthesia for laryngectomy and surgical procedures around a pre-existing tracheostomy is complicated by the need to ensure secure control of the airway whilst still allowing adequate surgical access.¹⁻⁴ Airway control is hampered by difficult fixation, inadvertent extubation and bronchial advancement.^{5,6} Numerous techniques have been advocated in an attempt to satisfy these requirements. Chester³ described intraoperative division of the tracheal tube and reconnection of the two sections through the tracheostomy. Lees⁷ also divided the tracheal tube intraoperatively, but then discarded both fragments and inserted a tracheostomy tube for the remainder of the procedure. Geffin⁶ and Coffin¹ used conventional tracheal tubes inserted through the stoma and both found bronchial advancement to be a problem. Campkin⁸ and Condon² used a right-angled James tube which is inserted intraoperatively following withdrawal of the orotracheal

FIGURE The Montando laryngectomy tube.

tube and creation of a tracheostomy. Reinforced⁹ and flexometallic¹⁰ tubes eliminate bulky connections in the operative field; however, the large radius of curvature inherent with these tubes makes secure fixation difficult and inadvertent extubation and bronchial advancement are common. Birkinshaw⁵ and Loach¹¹ described elaborate suturing techniques to attempt to reduce these problems.

The Montando laryngectomy tube supplied by Portex is an alternative method of tracheal cannulation which we have used. It is constructed of soft ivory blueline PVC and is in a preformed "J" shape (Figure). Sizes 4.0 mm and 5 mm uncuffed, 5.5 mm to 10 mm cuffed are available. No description of the original red rubber tube described by Professor Montando of Geneva (personal communication J. Exnard & Co. Paris), could be found in the literature.

The Montando tube was used in 46 consecutive patients undergoing laryngectomy (19 patients), neck dissection following previous laryngectomy (22 patients) or tracheostomy under local anaesthesia before laryngectomy (five patients).

Insertion of the tube into a preexisting tracheostomy by the anaesthetist required initial straightening of the curve to facilitate its introduction. In one case, intraoperative insertion of the tube by the surgeon was unsuccessful through a small tracheal incision and a bevelled flexometallic tube was introduced and the case proceeded uneventfully. Fixation of the tube was by either a single suture in the case of intraoperative tracheostomies or taping to the chest wall in patients with pre-existing tracheostomies. The design of the Montando tube with parallel tracheal and chest wall limbs and a small radius of curvature makes it inherently self-retaining in the trachea whilst allowing the surgeon to move the tube to operate on the inferior aspect of the stoma. No cases of bronchial advancement

were detected using pulse oximetry and inadvertent extubation was not seen. We recommend its use when head and neck surgery involving a tracheostomy is performed.

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