

## Correspondence

**Audit of double-lumen endobronchial intubation**

Editor—I would like to comment on several of the conclusions in the recent article on thoracic anaesthesia by Seymour and colleagues.<sup>1</sup> First, 117 of 506 patients received atropine at induction and these patients showed less tendency to desaturate during one-lung ventilation than the patients who did not receive atropine. The authors conclude that atropine decreases the risk of desaturation. However, they do not explain why this minority of patients received atropine. It has been appreciated for more than 20 yr that patients with chronic obstructive pulmonary disease tend to desaturate less than patients with normal lung function during one-lung ventilation.<sup>2</sup> This is related to an auto-positive end-expiratory pressure (PEEP) effect in the ventilated lung.<sup>3</sup> I believe that one reason that the anaesthetists in Seymour's study may have chosen to give certain patients atropine could be that these patients had chronic bronchitis or other obstructive lung diseases and excess secretions. Thus, this group would be pre-selected to have better oxygenation during one-lung ventilation on the basis of auto-PEEP and not related to atropine.

Second, the authors found that confirming the position of the double-lumen tube with a fiberoptic bronchoscope (283/506 patients) made no difference to the course of anaesthesia. The fiberoptic bronchoscope, as we use it in thoracic anaesthesia, is simply a monitor. It is relatively easy to choose any monitor that we use on a daily basis, such as pulse oximetry or capnography, and do a study with/without it to show that it has no effect on outcome.

The data suggest that the authors work in a large-volume thoracic unit. The mean number of double-lumen intubations for the 12 consultants exceeds six per week. Interestingly, Brodsky and Lemmens,<sup>4</sup> who also work in a very busy thoracic centre, reached the same conclusion about the lack of need for routine fiberoptic confirmation of double-lumen tube positioning. There may be a pattern here. With a large volume of cases a consultant may become proficient working without a fibroscope. But what about the practitioners who do not have ongoing clinical experience in double-lumen tube placement? Everyone agrees that it is sometimes necessary to use a bronchoscope to place or re-position a double-lumen tube. I have been impressed with how long the learning curve is for this essential anaesthetic skill. Fiberoptic positioning of endobronchial tubes or blockers is similar to laryngoscopy; it is not innate knowledge. You have to do it often to become comfortable with the wide variety of anatomical distortions and in conditions of suboptimal visualization. Most of us need to avail ourselves of every opportunity to review tracheo-bronchial anatomy *in vivo* in controlled circumstances to be prepared when circumstances threaten to get out of our control.

P. Slinger  
Toronto, Canada  
E-mail: [peter.slinger@uhn.on.ca](mailto:peter.slinger@uhn.on.ca)

Editor—Thank you for the opportunity to reply to Dr Slinger's letter. The anaesthetists involved in the audit usually adhered to a personal regimen. In the case of those who normally administered no anticholinergic at induction (which included those consultants only occasionally involved in thoracic anaesthesia) there were

14 instances where glycopyrrolate was given. For those where glycopyrrolate formed a regular part of the induction sequence, it was omitted on four occasions. In the case of atropine users it was omitted in nine instances, possibly because of worries about cardiac rhythm, but atropine was never given by an anaesthetist for whom it did not represent standard practice. It appears, therefore, that glycopyrrolate might occasionally have been given because of the condition of the patient's airways, but not atropine. An imponderable factor is that 39 out of the total of 506 patients were anaesthetized by specialist registrars for whom no pattern of administration can be deduced. We have, therefore, repeated the analysis excluding them completely, and this has the effect of strengthening the association between atropine and better saturation during one lung anaesthesia to a *P*-value of 0.02 (using the  $\chi^2$ -test with Yate's correction).

It is true that the study fails to demonstrate a link between experience and outcome. However, our specialist registrars did have a higher problem rate than the consultants (20.5% vs 17.5%). That this is not statistically significant is hardly surprising. In the first place the numbers are small, and the specialist registrars may have passed on the most difficult cases, possibly the ones that had a deleterious effect upon the principal author's analysis. Finally, all were extremely competent and on the flat part of the learning curve where the yield, in terms of a measurable improvement in performance, is likely to be small.

The comments about use of the fiberoptic bronchoscope are uncontentious, although the exponent of traditional tube-placement methods is clearly at an advantage in 'conditions of suboptimal visualization'—for example haemorrhage into the bronchial tree. Our own experience<sup>1,5</sup> and that of Brodsky and Lemmens<sup>4</sup> shows that the anaesthetist should be free to place and monitor a double-lumen tube by either method, depending upon experience and inclination.

A. Seymour\*  
B. Prasad  
R. McKenzie  
Birmingham, UK  
\*E-mail: [alan.seymour@heartsol.wmids.nhs.uk](mailto:alan.seymour@heartsol.wmids.nhs.uk)

- 1 Seymour AH, Prasad B, McKenzie RJ. Audit of double-lumen endobronchial intubation. *Br J Anaesth* 2004; **93**: 525–7
- 2 Katz JA, Laverne RG, Fairley HB, Thomas AN. Pulmonary oxygen exchange during endobronchial anesthesia: effect of tidal volume and PEEP. *Anesthesiology* 1982; **56**: 164–71
- 3 Bardoczky GI, Yernault J-C, Engleman EE, et al. Intrinsic positive end-expiratory pressure during one-lung ventilation for thoracic surgery. *Chest* 1996; **110**: 180–4
- 4 Brodsky L, Lemmens HJ. Left double-lumen tubes: clinical experience with 1,170 patients. *J Cardiothorac Vasc Anesth* 2003; **17**: 289–98
- 5 Seymour AH, Lynch L. An audit of Robertshaw double lumen tube placement using the fiberoptic bronchoscope. *Br J Anaesth* 2002; **89**: 661–2

doi:10.1093/bja/aei556