Correspondence

The difficult airway

To the Editor:
With respect to the management of the difficult airway,[1] I have two further suggestions for optimal visualization of the larynx. Often when the larynx is anterior, all that is needed to improve the view is to displace the larynx to the left and turn the patient's head to the right. This has the immediate effect of lining up the airway with the curve of the endotracheal tube as it is introduced from the right corner of the mouth.

When visualization is more difficult, a standard laryngoscope can be combined with a lighted stylet. The added light works wonders; especially for those of us whose visual acuity is deteriorating with age. The stylet is useful for directing the tip of the tube and the light can be seen from outside to be in the correct position before the end tidal CO_2 line is connected and before the first positive pressure breath is given.

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REFERENCE

1 *Crosby ET, Cooper RM, Douglas MJ, et al.* The unanticipated difficult airway with recommendations for management. Can J Anaesth 1998; 45: 757–76.

REPLY:

Dr. Graham's letter emphasizes one point made in our paper and introduces a second important topic that we did not review. Optimizing the position of the patient is an important prelude to uncomplicated laryngoscopy. Dr. Graham identifies an additional intervention which may be useful to achieve a line of view to the larynx when optimal positioning alone does not. The effect of the manoeuvre cited is similar to that of laryngeal manipulation. He also introduces a second issue which has received little attention in the past. The poor quality light which he alludes to and compensates for with a second light source may not be due to his failing eyesight. The intensity of laryngo-pharyngeal illumination is influenced not only by the quality of the laryngoscope but also by the residual charge on the handle batteries. As the battery charge is drained, the light output of the laryngoscope decreases exponentially. Also, as the laryngoscope itself ages and the light bundles deteriorate, new batteries are required almost continuously to provide even minimally acceptable light output and laryngo-pharyngeal illumination. Despite this, many laryngoscopes in use contain batteries with serious deficits in residual charge. In a survey of our own operating room, 70% of handles contained batteries with residual charges so low as to compromise laryngoscope performance seriously. Although it is possible that many of us have become proficient at working in the dark, it is a concern that such inadequate lighting may contribute to unanticipated difficulties during laryngoscopy. Dr. Graham's tips represent adjunct techniques to optimize direct laryngoscopy when unanticipated difficulties present.*

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Respiratory arrest following intrathecal sufentanil

To the Editor:
I read with interest and concern the report by Katsiris *et al.*,[1] of respiratory arrest following intrathecal sufentanil in a parturient. It is important that the information in this report and in the other quoted cases change the way the technique is practiced:

1. In all cases, doses ≥ 10 μg sufentanil were used. Intrathecal sufentanil is effective for labor analgesia in doses as small as 3 μg[2] particularly when used in combination with local anesthetics. In our practice, 5 μg sufentanil plus 2.5 mg hyperbaric bupivacaine 0.5% (final volume 1.5 ml) are very effective.
2. A 50 $\mu g \cdot ml^{-1}$ commercial preparation of sufentanil is not the ideal "mother" solution for the OB setting. The 5 $\mu g \cdot ml^{-1}$ solution, specially marketed for spinal/epidural use will reduce the risk of accidental overdose.
3. Unless administered in the lateral position, isobaric (hypobaric) bupivacaine[3] and probably other solutions should not be used in the obstetric patient.
4. If the epidural catheter is to be tested after the intrathecal injection of sufentanil-bupivacaine, this should be done later. Even a small volume of a test dose will increase epidural pressure con-

siderably[4] and enhance the likelihood of extensive spread of intrathecally administered drugs.

5. Last, but not least, concomitant use of systemic opioids require close observation and monitoring of these patients.

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References

1 *Katsiris S, Willians S, Leighton BL, Halpern S.* Respiratory arrest following intrathecal injection of sufentanil and bupivacaine in a parturient. Can J Anaesth 1998; 45: 880–3.
2 *Naulty JS, Barnes D, Becker R, Pate A.* Continuous subarachnoid sufentanil for labor analgesian. Anesthesiology 1990; 73: A964.
3 *Carvalho JCA, Mathias RS, Torres MLA, Brisola N, Amaral RVG.* Effect of baricity on subarachnoid anesthesia with bupivacaine for cesarean section. Reg Anesth 1988; 13: S14.
4 *Cardoso MMSC, Carvalho JCA.* Epidural pressures and spread of 2% lidocaine in the epidural space: influence of volume and speed of injecton of the local anesthesic solution. Reg Anesth 1998; 23: 14–9.
5 *Hughes SC.* Respiratory depression following intraspinal narcotics: expect it! (Editorial) Int J Obstet Anesth 1997; 6: 145.

To the Editor:

The report by Katsiris *et al.* is the latest in a series of respiratory arrests in parturients following intrathecal sufentanil.[1] While the authors state that they cannot identify any predisposing factors, there is clearly a common element in all these reports. There are 13 cases of respiratory arrest or high sensory block in the references (including this case). In ten, the patient was definitely sitting for the procedure, in two they were probably sitting (the patient is reported to be placed supine after the block), and in one case no position was listed.

A recent report of the densities of cerebrospinal fluid (CSF) and anesthetic agents[2] listed the following:

CSF density at 37°C	
term parturients	1.00033
95% confidence limits	1.00013-1.00053
0.25% bupivacaine	0.9990
sufentanil 50 $\mu g \cdot ml^{-1}$	0.9933
preservative free 0.9% NaCl	0.9995

Assuming a normal distribution, 2.5% of parturients will have CSF densities above 1.00053. The upper limit is unknown. It is likely that, in a small number of patients, the intrathecal dose of sufentanil ± bupivacaine is significantly hypobaric, and the reported respiratory depression is due to cephalad spread. Perhaps the message from these reports should be to beware of sufentanil administered in the sitting position!

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References

1 *Katsiris S, Williams S, Leighton BL, Halpern S.* Respiratory arrest following intrathecal injection of sufentanil and bupivacaine in a parturient. Can J Anaesth 1998; 45: 880–3.
2 *Lui ACP, Polis TZ, Cicutti NJ.* Densities of cerebrospinal fluid and spinal anaesthetic solutions in surgical patients at body temperature. Can J Anaesth 1998; 45: 297–303.

Reply:

We would like to thank Drs. Carvalho and Tarshis for their comments and observations. We agree that 10 μg subarachnoid sufentanil is more than is required for labour analgesia. Also, parenteral opioids, given before intrathecal sufentanil appear to increase the risk of respiratory depression.

It is interesting that the solution used was likely isobaric or mildly hypobaric. However, we are uncertain that the patient position at the time of injection was responsible for the respiratory depression in this case. While ten of the thirteen reported cases of respiratory depression occurred in patients given the drugs in the upright position, the total number of injections in that position, compared with that in the lateral position, is not known. Further, there may be unreported cases of patients who suffered respiratory depression and received their injection in the lateral position. The primary advantage of using small doses of intrathecal opioids with local anaesthetic is that the patient can ambulate – implying the upright position.

In summary, this case illustrated severe respiratory depression from a standard clinical dose of intrathecal sufentanil. We wanted to draw attention to the risks so that clinicians might re-evaluate the drug doses used and indications for the procedure.

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