Correspondence

Inhaled nitric oxide as a coadjuvant therapy after massive pulmonary embolism

To the Editor:

Woodward *et al.* reported an interesting case of massive pulmonary embolism occurring in a labouring patient.¹ She was initially treated with oxygen and heparin and an urgent Cesarean section was indicated under general anesthesia. Hemodynamic collapse occurred ten minutes after delivery of an severely asphyxiated baby and a surgical pulmonary embolectomy was performed.

We would like to suggest the use of inhaled nitric oxide (iNO) as a coadjuvant therapy in this critical setting. Some experimental data show that the right heart failure and circulatory shock after a massive air embolism were attenuated when iNO was administered to dogs.² In addition, iNO therapy improved oxygenation and had beneficial hemodynamic effects in four patients with severe pulmonary embolism.³ Besides the selective pulmonary vasodilation caused by iNO, NO inhalation may diminish additional clot formation when emboli reach the lungs.⁴ Although the relevance of these findings remains to be elucidated,⁵ we believe that iNO therapy may attenuate the circulatory collapse and decrease the high mortality rate after massive pulmonary embolism.

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References

- 1 Woodward DK, Birks RJS, Granger KA. Massive pulmonary embolism in late pregnancy. *Can J Anaesth* 1998; 45: 888-92.
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- 4 Gries A, Bode C, Peter K, *et al.* Inhaled nitric oxide inhibits human platelet aggregation, P-selectin expression, and fibrinogen binding in vitro and in vivo. *Circulation* 1998; 97: 1481-7.

- 5 Tanus-Santos JE. Inhaled nitric oxide and pulmonary embolism (Letter). *Intensive Care Med* 1998; 24: 747-8.

Upper Airway Obstruction

To the Editor:

Once in a great while in the past I have experienced, and I have observed others to experience, problems during the performance of awake fiberoptic-endoscopy aided tracheal intubation similar to those reported by Drs. McGuire and El-Beheiry.¹ Even though glycopyrrrolate was used, the fundamental problem has always seemed to be caused by/related to difficulty in handling excessive perilaryngeal fluid (the topicalized local anesthetic and/or secretions) (as in both of the authors' case reports). The perilaryngeal fluid may cause mechanical blockage of the airway, and/or induce laryngospasm, prolonged exhalation, coughing and gagging. As a result of these observations I have made a simple change in my practice which has greatly minimized these problems and difficulties. I instruct the patient, prior to the procedure, that I will anesthetize the upper airway mucosa by spraying a local anesthetic for ten seconds at a time and during and after the spraying of the local anesthetic the patient should gargle whatever fluid accumulates in the back of the throat. I then ask the patient to bring all the fluid to their lips, through which I insert a Yankauer suction catheter and remove all the fluid. The ten second spray-gargle-suction sequence clears the airway every ten seconds and the gargle-suction components are accomplished mainly in breath-hold or exhalation phases (as opposed to an inspiratory phase). In addition, the removal of the local anesthetic may decrease postoperative nausea and vomiting.² Since I have instituted this practice (n = ~ 200 patients),² I have had none of the problems reported by Drs. McGuire and El-Beheiry.

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- 1 McGuire G, El-Beheiry H. Complete upper airway obstruction during awake fiberoptic intubation in patients with unstable cervical spine fractures. *Can J Anesth* 1999; 46: 176-8.

- 2 Benumof JL, Feroe D. Swallowing topically administered 4% lidocaine results in nausea and vomiting. *Am J Anesth* 1998; 25: 150–2.

REPLY:

We would like to thank Dr. Benumof for his interest and suggestions. Our report described the occurrence of complete upper airway obstruction with progressive life threatening arterial oxygen desaturation during awake fiberoptic intubation in two cases.¹ Both patients had unstable cervical spine fractures and they were stabilized in halo traction. The objective of our report was to remind anesthesiologists that fiberoptic endoscopies under such challenging situations might lead to drastic complications as those which have been experienced by Dr. Benumof.

A combination of factors could have contributed to the occurrence of complete upper airway obstruction including, mainly, deep sedation and inadequate topicalization. However, we agree with Dr. Benumof that accumulation of perilaryngeal secretions might have played a role in the development of these complications. In our practice, we always ask the patient to gargle lidocaine sprayed or applied with pledgets and to suction all the fluids from the mouth with a Yankauer suction catheter. The Yankauer catheter is inserted a few times gently into the pharynx and is advanced gradually into the hypopharynx at the last stages of topicalization. The suction tip is also used to test the suppression of the gag reflex. We rarely use the suction port of the fiberoptic scope to suction perilaryngeal secretions. Nonetheless, Dr. Benumof's method of topicalization is an attractive technique and could ensure the clearing of most perilaryngeal secretions and fluid.²

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- 1 McGuire G, El-Beheiry H. Complete upper airway obstruction during awake fiberoptic intubation in patients with unstable cervical spine fractures. *Can J Anesth* 1999; 46: 176–8.
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Bullard assisted trachlight technique

To the Editor:

I am writing to describe a method of intubation. For some time, we have been using a Bullard assisted trachlight (BAT) technique.

The intubating stylet is removed from the Bullard laryngoscope. It is used with the battery handle alone without the fiberoptic light source. The Bullard laryngoscope is inserted into the pharynx in the midline. When the vocal cords are visualized, the laryngoscope is moved to the left side of the mouth. Next, the trachlight is inserted into the right side of the mouth near the midline. The endotracheal tube is then guided under direct vision through the vocal cords. The endotracheal tube is fed distally into the trachea using a one handed trachlight technique.¹

When the Bullard laryngoscope is used with its stylet, perfect alignment is necessary to push the endotracheal tube through the vocal cords. The BAT method does not require a perfect view of the vocal cords. The trachlight allows for manipulation of the endotracheal tube independent of the view from the Bullard. Also, the trachlight better illuminates the vocal cords. The endotracheal tube position is therefore confirmed both by direct vision and the light transmitted in the anterior neck.

Personally I do not like probing blindly in the laryngeal area with the trachlight and feel limited in maneuverability when using the Bullard laryngoscope alone.

There is virtually no learning curve as this technique is rapidly learned by residents. Also, the Bullard laryngoscope is more easily and quickly cleaned than the fiberoptic scope.

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Reference

- 1 Crosby E. A tip for the trachlight. *Can J Anaesth* 1998; 45: 708–9.

Nasal intubation with the Trachlight

To the Editor:

Hung *et al.*^{1,2} describe a technique for nasal intubation with the Trachlight (TL) in which the stylet is removed to make it more pliable and flexible for atraumatic passage through the nose. We had poor success rate without the stylet due to difficulty in redirecting the light towards the glottis. We describe Trachlight-guided nasal intubation without removal of the stylet.

A 17-yr-old, 65-kg, ASA 1 man presented for repair of a fractured jaw: mouth opening was 21 mm. The nostril was topicalised and a cricothyroid puncture performed with lidocaine. An 8 mm flexible tracheal tube (TT) was mounted on a TL with the stylet in