work on the technique. Trainees could refer to the diagrams in the original publication [1] and might be persuaded that it would save time and reduce trauma. Latto *et al.* attribute the recommendation to rotate the tube anticlockwise to Dogra *et al.* [2]. I am, of course, pleased that the idea launched in 1985 has proved useful, even if its origin remains obscure!

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References

1 Cossham PS. Difficult intubation. *British Journal of Anaesthesia* 1985; **57**: 239.
2 Dogra S, Falconer R, Latto IP. Successful difficult intubation. Tracheal tube placement over a gum elastic bougie. *Anaesthesia* 1990; **45**: 774–6.
3 Pandit JJ, Dravid RM, Iyer R, Popat MT. Orotracheal fibre optic intubation for rapid sequence induction of anaesthesia. *Anaesthesia* 2002; **57**: 123–7.
4 Hughes S, Smith JE. Nasotracheal tube placement over the fibreoptic laryngoscope. *Anaesthesia* 1996; **51**: 1026–8.

A reply

We thank Dr Cossham for his constructive interest in our paper. We consider that the information in his now classic and well-known 1985 letter has had a very significant positive influence on everyday anaesthetic practice. The diagrams in the letter clearly illustrate the benefit of 90° anticlockwise rotation when attempting to pass a tube over a bougie. The same principle naturally applies to passing a tube over a fibrescope. Anaesthetists in the UK who have struggled with difficult intubations when using the bougie have reason to be extremely thankful to Dr Cossham for his important idea. Boys in 1983, described a case of failed intubation in an obstetric patient even after passing a bougie into the trachea [1]. If the 'Cossham Twist' is implemented and the laryngoscope is left in the mouth [2] then it should be possible to railroad the tube over the bougie and such difficulties should be of historic interest. We very much regret that inadvertently we did not include the all important original reference in our paper. In a similar vein, we should mention Sellers and Jones [3] who described the signs confirming successful tracheal placement of the bougie in 1986. The detection of clicks and hold up are central to the optimum use of the bougie.

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References

1 Boys JE. Failed intubation in obstetric anaesthesia. A case report. *British Journal of Anaesthesia* 1983; **55**: 187–8.
2 Dogra S, Falconer R, Latto IP. Successful difficult intubation. Tracheal tube placement over a gum-elastic bougie. *Anaesthesia* 1990; **45**: 774–6.
3 Sellers WFS, Jones GW. Difficult tracheal intubation. *Anaesthesia* 1986; **41**: 93.

Pressure changes in tracheal tube cuffs at altitude

I would like to respond to the recent paper about tracheal cuff pressures (Smith & McArdle. *Anaesthesia* 2002; **57**: 374–8). The paper is relevant to my present appointment at 'Care Flight', a helicopter retrieval service based at Westmead hospital in the West of Sydney. It serves the population around that area and also out past the Blue Mountains, west of the Metropolitan area. 'Care Flight' transports around 40% of its patients using a Bell 412 HP helicopter, the rest being mainly road transfers with the occasional fixed-wing retrieval [1]. In the helicopter transfer caseload, just over 59% are intubated and ventilated.

The problem of cuff volume and pressure changes occurs therefore almost on a daily basis, particularly when traversing the Blue Mountains at up to 7000 ft. with flight times between 1 and 1.5 h. The solution that 'Care Flight' has devised is a simple one using a 'hi-lo'® Hand Pressure Gauge by Mallinkrodt, which is attached, via a 3-way tap, to the pilot tube prior to departure (Fig. 4).

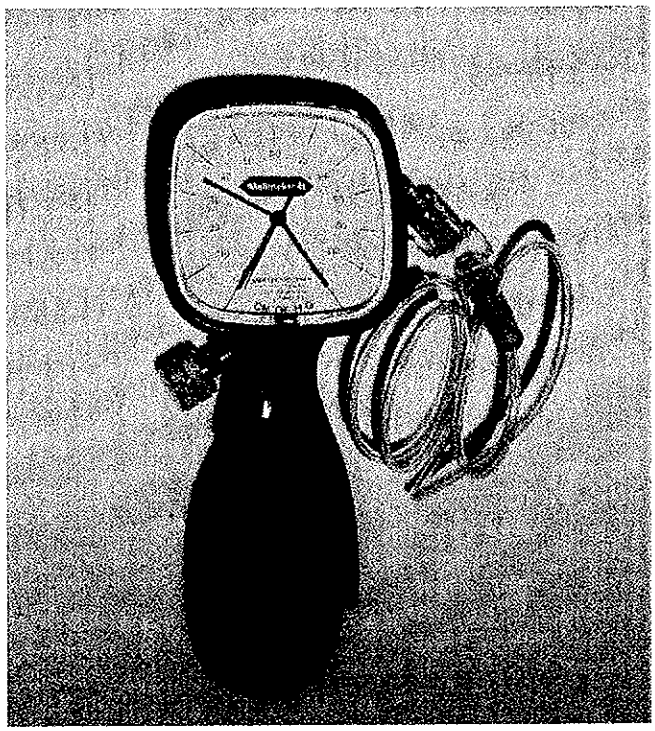

Figure 4

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This is designed to reduce tracheal mucosa damage by accurately measuring the cuff pressure. The gauge itself is calibrated annually. In flight, it performs its design function, albeit in a dynamic environment. The pressure in the cuff is kept to that which prevents air leak and is no greater than 30 cmH_2O. It is monitored as part of the normal patient parameters. As the ambient pressure changes, the pressure is maintained at a constant level by releasing and adding air with the built in pump. The problem of predicting what tubes give what pressures at what altitude at what temperature is never a problem. The final problem, of remembering to replace the air upon descent, is also overcome as the pressure readout is viewed as part of the normal in-flight patient checks.

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Reference

1 Mellor AJ. Helicopter Medical Retrieval in Sydney, New South Wales. *Journal of the Royal Naval Medical Service* 2000; **86**: 167–9.

Arterial line insertion

I read with interest the letter (Dollman & Sellers. *Anaesthesia* 2002; **57**: 195) regarding arterial line insertion. I have two comments on the subject.

The use of a loss-of-resistance syringe seems like quite an expensive way of achieving arterial cannulation when there is a cheaper alternative. After the artery has been transfixed, the metal needle is removed. Attach a 2-ml syringe to the plastic cannula and aspirate on the syringe whilst withdrawing the cannula. There will be a definite flush of arterial blood when the tip of the cannula is in the artery and will achieve the same results as using an expensive (and not always immediately available) loss-of-resistance syringe.

When trying to thread the cannula inside the artery Dollman *et al.* suggest rotating the cannula to prevent it buckling. An alternative is to hold the cannula against the skin with a steret or piece of sterile gauze soaked in antibacterial solution. This means the operator's fingers can prevent buckling of the cannula, and maintain an aseptic technique whilst allowing aspiration on the syringe to constantly confirm the position of the cannula in the artery.

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The use of the laryngeal mask airway in maxillofacial surgery

We read with interest the case report (Wilson *et al. Anaesthesia* 2002; **57**: 190) in which the cuff of a laryngeal mask airway was seen intruding into the surgical field during the removal of a bronchial cyst in a female patient. The authors exchanged the laryngeal mask for a tracheal tube and urge caution in the use of the laryngeal mask airway for the removal of lumps in the neck. Their letter raises several issues and we would like to suggest a possible alternative strategy for dealing with the problem they discuss.

The use of the laryngeal mask airway as an airway adjunct in maxillofacial surgery is well established. Its use avoids the undesirable haemodynamic responses which can be associated with laryngoscopy and tracheal intubation [1]. The emergence from anaesthesia has been shown to be smoother, with a lower incidence of coughing [2] and arterial desaturation when a laryngeal mask airway is used as compared to a tracheal tube [3]. There is a also a lower incidence of respiratory complications during the recovery period following the use of the laryngeal mask airway [4]. Coughing, particularly when the tracheal tube is *in-situ*, increases venous pressure markedly, potentially causing bleeding and swelling at the surgical site, which is particularly undesirable in neck surgery.

There is no doubt that the presence of the laryngeal mask airway can alter the anatomical appearance of the surgical field. This case emphasises the importance of good communication between anaesthetist and surgeon, which may have alerted the surgeon to the possibility of alterations to the usual anatomy. Perhaps the surgeon would then not have been so surprised by what confronted him!

Whilst we do not disagree with the subsequent management of the patient in this case, we would like to offer some alternative strategies that could have resolved the situation. We suggest that the cuff could have been briefly deflated to allow the surgeon to refamiliarise himself with his landmarks. This may also have allowed the cyst that had been displaced posterior to sternomastiod to have fallen back into the surgical field. The cuff could then have been re-inflated to achieve an optimal seal.

The laryngeal mask airway has an important place in anaesthesia for head and neck surgery. We suggest that careful communication, coupled with an awareness of the possibility of altered anatomy, will provide good surgical access and optimal recovery characteristics.

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References

1 Wood ML, Forrest ET. The haemodynamic response to the insertion of the laryngeal mask airway: a comparison with laryngoscopy and tracheal intubation. *Acta Anaesthesiologica Scandinavica* 1994; **38**: 510–13.

2 Denny NM, Gadelrab R. Complications following general anaesthesia for cataract surgery: a comparison of the laryngeal mask airway with tracheal intubation. *Journal of the Royal Society of Medicine* 1993; **86**: 521–2.

3 Webster AC, Morley-Forster PK, Janzen V, Watson J, Dain SL, Taves D, Dantzer D. Anaesthesia for intranasal surgery: a comparison between tracheal intubation and the flexible reinforced laryngeal mask airway. *Anesthesia and Analgesia* 1999; **88**: 421–5.

4 Koga K, Asai T, Vaughan RS, Latto IP. Respiratory complications associated with tracheal extubation. Timing of tracheal extubation and the use of the laryngeal mask during emergence from anaesthesia. *Anaesthesia* 1998; **53**: 540–4.

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