anesthesia. *Anesthesiology* 2007; **107**: 733–8.
29. Bilgen S, Koner O, Karacay S, sancar NK, Kaspar EC, Sozubir S. Effect of ketamine versus alfentanil following midazolam in preventing emergence agitation in children after sevoflurane anaesthesia: A prospective randomized clinical trial. *Journal of International Medical Research* 2014; **42**: 1262–71.
30. Abu-Shahwan I, Chowdary K. Ketamine is effective in decreasing the incidence of emergence agitation in children undergoing dental repair under sevoflurane general anesthesia. *Pediatric Anesthesia* 2007; **17**: 846–50.
31. Ozcan A, Kaya AG, Ozcan N, et al. Effects of ketamine and midazolam on emergence agitation after sevoflurane anaesthesia in children receiving caudal block: a randomized trial. *Brazilian Journal of Anesthesiology* 2014; **64**: 377–81.
32. Pickard A, Davies P, Birnie K, Beringer R. Systematic review and meta-analysis of the effect of intraoperative α2-adrenergic agonists on postoperative behaviour in children. *British Journal of Anaesthesia* 2014; **112**: 982–90.
33. Yang S, Lee H. A dose-finding study of preoperative intravenous dexmedetomidine in children's emergence delirium after epiblepharon surgery. *European Journal of Ophthalmology* 2014; **24**: 417–23.
34. Yuen VM, Hui TW, Irwin MG, et al. A randomised comparison of two intranasal dexmedetomidine doses for premedication in children. *Anaesthesia* 2012; **67**: 1210–6.
35. Kim J, Kim SY, Lee JH, Kang YR, Koo BN. Low-dose dexmedetomidine reduces emergence agitation after desflurane anaesthesia in children undergoing strabismus surgery. *Yonsei Medical Journal* 2014; **55**: 508–16.
36. Patel A, Davidson M, Tran MC, et al. Dexmedetomidine infusion for analgesia and prevention of emergence agitation in children with obstructive sleep apnea syndrome undergoing tonsillectomy and adenoidectomy. *Anesthesia and Analgesia* 2010; **111**: 1004–10.
37. Shukry M, Clyde MC, Kalarickal PL, Ramadhyani U. Does dexmedetomidine prevent emergence delirium in children after sevoflurane-based general anesthesia? *Pediatric Anesthesia* 2005; **15**: 1098–104.
38. Chen JY, Jia JE, Liu TJ, Qin MJ, Li WX. Comparison of the effects of dexmedetomidine, ketamine, and placebo on emergence agitation after strabismus surgery in children. *Canadian Journal of Anesthesia* 2013; **60**: 385–92.
39. Ali MA, Abdellatif AA. Prevention of sevoflurane related emergence agitation in children undergoing adenotonsillectomy: a comparison of dexmedetomidine and propofol. *Saudi Journal of Anesthesiology* 2013; **7**: 296–300.
40. Bong CL, Lim E, Allen JC, et al. A comparison of single-dose dexmedetomidine or propofol on the incidence of emergence delirium in children undergoing general anaesthesia for magnetic resonance imaging. *Anaesthesia* 2015; **70**: 393–9.
41. Abdulatif M, Ahmed A, Mukhtar A, Badawy S. The effect of magnesium sulphate infusion on the incidence and severity of emergence agitation in children undergoing adenotonsillectomy using sevoflurane anaesthesia. *Anaesthesia* 2013; **68**: 1045–52.
42. Fregene T. Magnesium sulphate and postoperative agitation in children: an analgesic effect? *Anaesthesia* 2014; **69**: 187–8.
43. Bae JH, Koo BW, Kim SJ, et al. The effects of midazolam administered postoperatively on emergence agitation in pediatric strabismus surgery. *Korean Journal of Anesthesiology* 2010; **58**: 45–9.
44. Hallen J, Rawal N, Gupta A. Postoperative recovery following outpatient pediatric myringotomy: a comparison between sevoflurane and halothane. *Journal of Clinical Anesthesia* 2001; **13**: 161–6.
45. Welborn L, hannallah R, Norden J, et al. Comparison of emergence and recovery characteristics of sevoflurane, desflurane and halothane in pediatric ambulatory patients. *Anesthesia and Analgesia* 1996; **83**: 917–20.

doi:10.1111/anae.13043

Editorial

'From darkness into light': time to make awake intubation with videolaryngoscopy the primary technique for an anticipated difficult airway?

In this month's issue of *Anaesthesia*, Kramer et al. present a study that advances current practice for awake intubation in a patient with an anticipated difficult airway [1]. Hitherto, this has usually been achieved using a fibreoptic 'scope, but the study describes an approach that could change this practice. Kramer et al. randomly assigned patients with an anticipated difficult intubation to either an awake intubation using a fibrescope, or laryngoscopy using a C-MAC® videolaryngoscope with a D-BLADE.

The authors concluded that the videolaryngoscopy technique was an acceptable alternative and had a comparable success rate. Given that this echoes the findings of a previous study in a group of patients with anticipated difficult airways [2], maybe it is time to re-evaluate the way we think about awake intubation in general.

Many advances in medicine come about when something that was previously unseen becomes 'visible'. One need only think of the changes in anaesthetic practice brought about by the use of ultrasound [3] or monitoring of neuromuscular blockade [4] to see that this is so. In airway management, we have progressed a long way since the first 'blind' nasal tracheal intubations, first by virtue of the direct laryngoscope to bring light into the darkness of the airway, and later through the use of fibreoptic devices, extending our ability to see beyond the epiglottis and larynx to encompass the entire airway.

A parallel evolution has been a trend to use these devices first under general anaesthesia, then latterly under topical anaesthesia in 'awake' patients, thus divorcing tracheal intubation from general anaesthesia. This trend is further illustrated by the application of videolaryngoscopes. There have been a number of case reports [5–10] but very few studies [2, 11] looking at this technique. The use of a videolaryngoscope to facilitate an awake oral or nasal intubation has been shown to be of benefit in patients with a predicted difficult airway [5–10], in the obese [2, 12], and in patients with peri-glottic tumours [10, 13], but Kramer et al.'s study is the first to compare awake fibreoptic with videolaryngoscope-assisted nasal intubation.

Fibrescopes for awake intubation

We think there are several reasons why awake fibreoptic intubation is relatively uncommonly practised. Most anaesthetists agree that fibrescope-assisted intubation is a challenging technique to learn [14]. In addition, once learned, this skill requires regular practice to maintain [15]. Airway hyper-reactivity due to inadequate topical anaesthesia, oversedation with restlessness, nasal bleeding and, in case reports, progression of existing partial airway obstruction to complete obstruction, have all been reported as risks of the technique [16–19]. All of these contribute, we think, to avoidance of the technique. However, the alternatives may carry greater risk. We think it is not uncommon practice among some anaesthetists to perform a rapid sequence induction and 'have a quick look' in a patient whose trachea is possibly – but not definitely – difficult to intubate. This is illogical, since rapid sequence induction is itself a recognised risk factor for failed intubation, and in a patient with a predicted difficult airway, rapid sequence intubation is relatively contraindicated [20]. Because difficult intubation is, fortunately, rare, this unusual approach nevertheless often results in success, but the 4th National Audit Project report (NAP4) is replete with instances where it did not [21].

Anaesthetists may also fear that fibreoptic intubation may fail. Although this is hard to define, published series suggest a failure rate of 1.2–1.5% [16, 17]. In Kramer et al.'s study, the planned technique was not possible in two out of 50 patients (4%) randomly assigned to fibreoptic intubation. However, the same failure rate also occurred in the videolaryngoscope group, because of persistence of the gag reflex – a problem that has been reported elsewhere [13].

Anaesthetists may avoid awake (fibreoptic) intubation for fear of causing distress to a conscious patient who remains fully aware of the process of tracheal intubation. Coupled with operator diffidence, this may make anaesthetists reluctant to obtain consent from potentially suitable patients. Of course, expert topical anaesthesia is the mainstay of the technique, and when used with appropriate analgesia and sedation, should be well tolerated. However, the details of technique are vital in ensuring success.

The necessary equipment may not be fully understood, or it may be unavailable when needed. National incident reporting systems show that unavailability of equipment and user error were common reasons for reporting critical equipment-related incidents [22, 23]. Finally, fibreoptic intubation is often seen as time-consuming.

Some, if not all, of these above factors may explain the opinion of reviewers for NAP4 [21], who cited 18 cases where an awake method of securing the airway would have been appropriate, but where the anaesthetist had chosen the more familiar, but riskier, option of first

inducing general anaesthesia, with serious consequences [24].

Videolaryngoscopes for awake intubation

However, the videolaryngoscope may now offer solutions to some of these perceptions. It appears to be easier to learn to use. In order to reach competence with fibrescope-guided intubations (> 90% success rate within three minutes), the anaesthetist needs some 25 intubations [17]. To reach the same level of competence with videolaryngoscope-guided intubations, the anaesthetist needs between one [25] and six intubations [26]. Koyama et al. [27] demonstrated that tracheal intubation using a videolaryngoscope is faster and easier than intubation using the fibrescope or Macintosh laryngoscope with gum-elastic bougie.

Further, videolaryngoscope-guided intubation is becoming widely used and thus is gaining the advantage of familiarity and experience, especially in an emergency, where the stress of using unfamiliar equipment is more keenly felt. Videolaryngoscopes are also freely available, cheaper and more versatile, allowing use in a greater number and wider variety of patients.

In terms of patients' comfort and experience, adequate topical anaesthesia is vital for the success of any 'awake' technique; there is still uncertainty about the level of sedation required to make awake videolaryngoscope-guided intubation acceptable to patients [14]. The patients in Kramer et al.'s study reported no significant difference in satisfaction between the groups, which is perhaps a little misleading in that no patients could recall the procedure in any case. Similarly, Rosenstock et al. [2] reported no difference in the levels of patients' discomfort between awake videolaryngoscopic and awake fibreoptic intubation. Markova et al. [13] used 'light' levels of sedation in patients with compromised airways and reported high levels of patients' acceptance of awake videolaryngoscope-guided intubation. However, as noted above, the acceptance of this method of intubation is likely to be influenced more by the adequacy of topical anaesthesia than the level of sedation [28].

With regard to the time taken to perform intubation, Kramer et al.'s study showed that it took on average one minute less to intubate with a videolaryngoscope; again, this ignores the time to prepare the patient and anaesthetise the airway. With either technique, though, it is possible to prepare the patient in a 'holding area', in the same way as might be done for regional blockade, with little loss of operating theatre time.

Further potential advantages are inherent in the design of videolaryngoscopes and their intubation technique. First, laryngoscopy creates space within the airway, allowing for effective aspiration of secretions and blood from the airway under direct vision. Second, the created space within the airway aids administration of atomised local anaesthetic to the glottis and trachea under direct view through the videolaryngoscope. Third, when using a videolaryngoscope, placement of the tracheal tube is observed throughout the intubation process, reducing the potential for airway trauma. This is in contrast to blind insertion of the tracheal tube through the larynx, as occurs with a fibrescope [29]. In turn, this may reduce risk of impingement of the tube at the arytenoids [30, 31]. Fourth, videolaryngoscopes provide a fixed, wide view of the glottis that aids recognition of airway landmarks in the presence of both normal and distorted anatomy [13, 32]; there is no diminution of view associated with advancing the fibrescope towards the glottis. Lastly, videolaryngoscopes can be used for pre-operative airway assessment in awake patients, in order to assess the need for awake intubation [33].

However, in common with all airway management techniques, awake videolaryngoscope-guided intubation alone is not going to be suitable for all patients with a known difficult airway: it is unlikely to be a panacea. Intubation with the videolaryngoscope could not be achieved in two out of the 50 patients assigned to this device in Kramer et al.'s study. Current videolaryngoscopes lack the adaptability of modern fibrescopes. The insertion and subsequent manipulation of the videolaryngoscope blade relies on the pre-existence of a space within the airway; they may not, for instance, be appropriate in patients with limited mouth opening (Kramer et al. excluded patients with a mouth opening < 14 mm). This limit is extended to 18 mm [31] or 25 mm [9] when using videolaryngoscopes with a tube channel. In addition, in patients with a space-occupying lesion

within the oral cavity or pharynx, insertion of the videolaryngoscope blade into the airway is likely to be difficult or impossible. Thus, the skill of awake fibrescope-guided intubation remains a vital one for anaesthetists to use when indicated.

There is also perhaps the issue of matching the type of videolaryngoscope to the type of airway difficulty. Not all videolaryngoscopes would be suitable for the technique of awake intubation described in the published paper. The common feature of videolaryngoscopes is they can 'see' around corners and provide a clear view of the glottic opening [25, 34]. However, they differ in the blade design and method of use [34]. For example, videolaryngoscopes with a Macintosh-like curved blade without a tube channel (such as the C-MAC D-blade used in Kramer et al.'s study) are quite likely to require some form of airway adjunct, such as a stylet [2, 11], tracheal tube introducer [35, 36] or fibrescope [6] to aid tracheal tube placement. On the other hand, videolaryngoscopes with a tube channel, such as the Pentax Airway Scope® and Airtraq® optical laryngoscope, are more commonly used without the need of an airway adjunct [9, 10, 13, 37]. Although there is a suggestion that a videolaryngoscope with a tube guide may offer a few advantages over videolaryngoscopes with an anatomically shaped blade but no tube guide [38], the evidence is lacking on the most appropriate type of videolaryngoscope for awake intubation. As in other areas of airway management, the crucial issues affecting the choice of device are multiple [39, 40].

Keeping up skills

The potential danger of using this new technique to replace the fibrescope for awake intubation could be a significant loss of experience and skill with the latter method, which may be a particular problem when intubation using indirect laryngoscopy is not successful or is contraindicated. However, rather than try to develop and maintain proficiency in both techniques within the existing group of patients, one option would be to expand the indications for awake intubation by whichever technique. This is largely dictated by custom, and the expectations and prejudices of anaesthetists and patients. In Heidegger et al.'s series from Switzerland, the indications for awake fibreoptic intubation included: an anticipated difficult airway; cervical spine problems with a 'full stomach'; space-occupying lesions in the mouth and neck including abscesses; a body mass index (BMI) $> 35\ kg.m^{-2}$; poor dental status; polyarthritis; avoidance of neuromuscular blocking drugs; and induction of anaesthesia in patients with increased cardiac risk [17]. We suspect that this is a much broader range of indications than most UK departments would use, though adopting the BMI-based criterion alone would render many patients eligible at a stroke. Awake intubation for training purposes may also be a valid indication, provided patients are in agreement.

Further research could usefully help define which videolaryngoscopes are best for awake use, confirm that oral awake intubation is feasible with the technique, and explore patients' perceptions of awake techniques in more detail. Practically, however, a 'difficult airway' is a common descriptor signifying, but not distinguishing between, a range of conditions. (Some have even argued that a 'difficult airway' does not exist, rather only a range of 'complexity factors' [41]). As such, no single airway device will satisfy all clinical situations or the preferences of all operators and patients; furthermore, one would expect from 'expert' anaesthetists that they would have a 'repertoire' of techniques at their disposal, and draw on the appropriate one(s) as needed [42, 43]. Nevertheless, we feel that awake intubation is reaching the point where it can be considered as a primary airway management technique that we should teach new trainees in anaesthesia, in the same way that we teach rapid sequence induction. It should also be more widely practised amongst their seniors. The more frequent use of videolaryngoscopes in patients with normal airways, and a broadening of indications for awake techniques, will help us achieve this. We look forward to an 'Age of Enlightenment' in airway management.

Competing interests

No external funding declared. IH has received equipment or financial contributions for research and/or education from the distributors of KingVision, McGrath and Storz videolaryngoscopes.

E. Fitzgerald
ST7, Anaesthetics & Intensive Care Medicine
Wessex Deanery, UK
Email: emmazcharm6@icloud.com
I. Hodzovic
Senior Lecturer, Hon. Consultant
Department of Anaesthetics, Intensive Care and Pain Medicine
Cardiff University
Cardiff, UK
Aneurin Bevan University Health Board
Newport, UK
A. F. Smith
Consultant/Hon. Professor of Clinical Anaesthesia
Department of Anaesthesia Royal Lancaster Infirmary/Lancaster University
Lancaster, UK

References

1. Kramer A, Muller D, Pfortner R, Mohr C, Groeben H. Fibreoptic vs videolaryngoscopic (C-MAC® D-BLADE) nasal intubation under local anaesthesia. *Anaesthesia* 2015; **70**: 400–6.
2. Rosenstock CV, Thøgersen B, Afshari A, Christensen AL, Eriksen C, Gatke M. Awake fiberoptic or awake video laryngoscopic tracheal intubation in patients with anticipated difficult airway management. A randomized controlled trial. *Anesthesiology* 2012; **116**: 1210–6.
3. Brass P, Helmich M, Kolodziej L, Schick G, Smith AF. Ultrasound guidance versus anatomical landmarks for internal jugular vein catheterization. *Cochrane Database of Systematic Reviews* 2015; doi: 10.1002/14651858.CD006962.pub2.
4. Arnot-Smith J, Smith AF. Patient safety incidents involving neuromuscular blockade: analysis of the UK National Reporting and Learning System data from 2006 to 2008. *Anaesthesia* 2010; **65**: 1106–13.
5. Uslu B, Damgaard Neilsen R, Kristensen BB. McGrath® videolaryngoscope for awake tracheal intubation in a patient with severe ankylosing spondylitis. *British Journal of Anaesthesia* 2010; **104**: 118–9.
6. Xue FS, Zhang GH, Li XY, et al. GlideScope®-assisted awake fibreoptic intubation: initial experience in 13 patients. *Anaesthesia* 2008; **61**: 1014–5.
7. Xue FS, Xiong J, YuanY J, Wang Q, Asai T. Pentax-AWS videolaryngoscope for awake nasotracheal intubaton in patients with a difficult airway. *British Journal of Anaesthesia* 2010; **104**: 505–8.
8. Asai T. Pentax-AWS videolaryngoscope for awake nasal intubation in patients with unstable necks. *British Journal of Anaesthesia* 2010; **104**: 108–11.
9. Jarvi K, Hillermann C, Danha R, Mendonca C. Awake intubation with the Pentax Airway Scope. *Anaesthesia* 2011; **66**: 314.
10. Lambert C, Passant C, Hodzovic I. Awake videolaryngoscope-assisted intubation in a patient with stridor. *European Journal of Anesthesiology* 2013; **30**: 258.
11. Moore AR, Schricker T, Court O. Awake videolaryngoscopy-assisted tracheal intubation of the morbidly obese. *Anaesthesia* 2012; **67**: 232–5.
12. Douglass J, Fraser J, Andrzejowski A. Awake intubation and awake prone positioning of a morbidly obese patient for lumbar spine surgery. *Anaesthesia* 2014; **69**: 166–9.
13. Markova L, Stopar-Pintaric T, Luzar T, Benedik J, Hodzovic I. A study of awake videolaryngoscope-assisted intubation in patients with peri-glottic tumours. *British Journal of Anaesthesia* (in press).
14. Fiadjoe JE, Litman RS. Difficult tracheal intubation: looking to the past to determine the future. *Anesthesiology* 2012; **116**: 1181–2.
15. Rose DK, Cohen MM. The airway: problems and predictions in 18,500 patients. *Canadian Journal of Anesthesia* 1994; **41**: 372–83.
16. Ovassapian A, Yelich S, Dykes M, Brunnner E. Fiberoptic nasotracheal intubation – incidence and causes of failure. *Anesthesia and Analgesia* 1983; **62**: 692–5.
17. Heidegger T, Gerig HJ, Ulrich B, Schnider TW. Structure and process quality illustrated by fibreoptic intubation: analysis of 1612 cases. *Anaesthesia* 2003; **58**: 734–9.
18. Shaw IC, Welchew EA, Harrison BJ, Michael S. Complete airway obstruction during awake fibreoptic intubation. *Anaesthesia* 1997; **52**: 582–5.
19. Ho AM, Chung DC, To EW, Karmakar MK. Total airway obstruction during local anesthesia in a non-sedated patient with a compromised airway. *Canadian Journal of Anesthesia* 2004; **51**: 838–41.
20. Henderson JJ, Popat MT, Latto IP, Pearce AC. Difficult Airway Society guidelines for management of the unanticipated difficult intubation. *Anaesthesia* 2004; **59**: 675–94.
21. Cook TM, Woodall N, Frerk C. *4th National Audit Project: Major Complications of Airway Management in the UK*. London: Royal College of Anaesthetists, 2011.
22. Smith AF, Mahajan RP. National critical incident reporting: improving patient safety. *British Journal of Anaesthesia* 2009; **103**: 623–5.
23. Cassidy CJ, Smith AF, Arnot-Smith J. Critical incident reports concerning anaesthetic equipment: analysis of the UK National Reporting and Learning System (NRLS) data from 2006-8. *Anaesthesia* 2011; **66**: 879–88.
24. O'Sullivan E, Laffey J, Pandit JJ. A rude awakening after our fourth 'NAP': lessons for airway management. *Anaesthesia* 2011; **66**: 331–4.
25. Mihai R, Blair E, Kay H, Cook TM. A quantitative review and meta-analysis of performance of non-standard laryngoscopes and rigid fibreoptic intubation aids. *Anaesthesia* 2008; **63**: 745–60.
26. Ray DC, Billington C, Kearns PK, et al. A comparison of McGrath and Macintosh laryngoscopes in novice users: a manikin study. *Anaesthesia* 2009; **64**: 1207–10.
27. Koyama Y, Inagawa G, Miyashita T, et al. Comparison of the Airway Scope®, gum elastic bougie and fibreoptic bronchoscope in simulated difficult tracheal intubation: a manikin study. *Anaesthesia* 2007; **62**: 936–9.
28. Xue FS, Liu HP, He N, et al. Spray as-you-go airway anaesthesia in patients with a difficult airway: a randomized, double-blinded comparison of 2% and 4% lidocaine. *Anesthesia and Analgesia* 2009; **108**: 536–43.
29. Asai T, Shingu K. Difficulty in advancing a tracheal tube over a fibreoptic bronchoscope: incidence, causes and solutions. *British Journal of Anaesthesia* 2004; **92**: 870–81.
30. Rai MR, Scott SH, Marfin AG, Popat MT, Pandit JJ. A comparison of a flexometallic tracheal tube with the intubating laryngeal mask tracheal tube for nasotracheal fibreoptic intubation using the two-scope technique. *Anaesthesia* 2009; **64**: 1303–6.
31. Marfin AG, Iqbal R, Mihm F, Popat MT, Scott SH, Pandit JJ. Determination of the site of tracheal tube impingement during nasotracheal fibreoptic intubation. *Anaesthesia* 2006; **61**: 646–50.

32. Jejadoss J, Nanjappa N, Nemeth D. Awake intubation using Pentax AWS videolaryngoscope after failed fibreoptic intubation in a morbidly obese patient with a massive thyroid tumour and tracheal compression. *Anaesthesia and Intensive Care* 2011; **39**: 311–2.
33. Jones PM, Harle CC. Avoiding awake intubation by performing awake GlideScope® laryngoscopy in the preoperative holding area. *Canadian Journal of Anesthesia* 2006; **53**: 1264–5.
34. Niforopoulou P, Pantazopoulos I, Demestiha T, Koudouna E, Xanthos T. Videolaryngoscopes in the adult airway management: a topical review of the literature. *Acta Anaesthesiologica Scandinavica* 2010; **54**: 1050–61.
35. Kovacs G, Law JA, McCrossin C, Vu M, Lebianc D, Gao J. A comparison of a fibreoptic stylet and a bougie as adjuncts to direct laryngoscopy in a manikin-simulated difficult airway. *Annals of Emergency Medicine* 2007; **50**: 676–85.
36. Duff E, Junaidu A, Hodzovic I. Video laryngoscope guided tracheal intubation. Comparison of tracheal tube introducer and stylet. *Anaesthesia* 2008; **63**: 898–9.
37. Dimitriou VK, Zogogiannis ID, Liotiri DG. Awake tracheal intubation using the Airtraq® laryngoscope: a case series. *Acta Anaesthesiologica Scandinavica* 2009; **53**: 964–7.
38. Richardson PB, Hodzovic I. Awake tracheal intubation using videlaryngoscopy: importance of blade design. *Anaesthesia* 2012; **67**: 798–9.
39. Greenland KB, Irwin MG. Airway management – 'spinning silk from cocoons' (抽丝剥茧 – Chinese idiom). *Anaesthesia* 2014; **69**: 291–305.
40. Kristensen MS, Teoh WH, Asai T. Which supraglottic airway will serve my patient best? *Anaesthesia* 2014; **69**: 1189–92.
41. Huitink JM, Bouwman RA. The myth of the difficult airway: airway management revisited. *Anaesthesia* 2015; **70**: 244–9.
42. Smith AF, Glavin R, Greaves D. Defining excellence in anaesthesia: the role of personal qualities and practice environment. *British Journal of Anaesthesia* 2011; **106**: 38–43.
43. Smith AF. In search of excellence in anaesthesiology. *Anesthesiology* 2009; **110**: 4–5.

doi:10.1111/anae.13042

