During right subclavian CVC insertion, ipsilateral head turning and supraclavicular pressure reduced the risk of inadvertent internal jugular vein (IJV) cannulation from 9.1 to 3.6%. Although this difference was not statistically significant, the manoeuvre may reduce the size of the IJV lumen and so decrease the risk of the guide wire travelling up the IJV.

Ambesh and colleagues found that manual compression of the IJV resulted in a clear increase in transduced pressure if the catheter tip was misplaced into the IJV. While this was useful in identifying accidental IJV cannulation, they subsequently showed that manually occluding the IJV in the supraclavicular region successfully prevented the passage of the guide wire into the IJV.

Although such techniques decrease the risk of misplaced CVC catheter, they do not eliminate it altogether. Sound clinical judgement and radiological assessment are still necessary to confirm correct placement of central venous catheter.

**Declaration of interest**

None declared.

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2 Tripathi M, Dubey PK, Ambesh SP. Direction of the J-tip of the guidewire, in Seldinger technique, is a significant factor in misplacement of subclavian vein catheter: a randomized, controlled study. Anesth Analg 2005; 100: 21–4
4 Ambesh SP, Pandey JC, Dubey PK. Internal jugular vein occlusion test for rapid diagnosis of misplaced subclavian vein catheter into the internal jugular vein. Anesthesiology 2001; 95: 1377–79
doi:10.1093/bja/aet180

**Control group bias: a potential cause of over-estimating the benefit of videolaryngoscopy on laryngeal view**

Editor—The adoption of videolaryngoscopes (VL) into everyday anaesthetic practice is rapidly increasing, however much of the evidence supporting their benefit lacks scientific rigour. Despite other proposed advantages their prime role is to facilitate intubation by improving the view at laryngoscopy.

Studies investigating the efficacy of VLs in improving laryngeal view ideally compare the laryngeal view during videolaryngoscopy with that achieved with direct laryngoscopy (DL), with the best studies comparing laryngeal view during DL. However, even these studies are potentially prone to bias because of inability to blind the intubator and the possibility of intra-observer variability in grading laryngeal view. If such bias exists, it would likely lead to higher than expected rates of ‘difficult laryngoscopy’ in the control (DL) group of such studies. This bias would have two effects: first it would overstate the likely benefit of VL in individual cases and secondly it would artificially increase the power of such studies to show benefit.

We used published reports (summed where necessary) to identify expected frequencies of Cormack and Lehane (C&L) grade ≥3 during DL for (A) unselected populations, (B) patients whose necks were immobilized with manual in line stabilization (MILS), (C) patients immobilized with a stiff neck collar, and (D) patients with a Mallampati class ≥3. For each group, we identified (or calculated) an overall expected frequency of C&L ≥3 including a point estimate and 95% confidence interval (CI). For Group D after discussion with the author of the paper we used the most conservative estimate of the upper confidence level.

**Alternative methods to improve the probability of correct central venous catheter placement**

**Reply from the authors**

Editor—We thank Dr Gan and Dr Lanigan for their interest in our article. They are correct in citing a number of ways to improve the success of passing catheters and guidewires into the central veins. We did not cover this in detail as space precluded it and many other elements of central venous catheterization. The thrust of our article was to highlight applied anatomy of the superior vena cava and central veins, and catheter malposition in relation to normal and abnormal anatomy, which we believe is not that well covered in anaesthesia and critical care texts. Guidance is given to aid recognition and management of misplacements rather than all the techniques to prevent them in the first place. No one technique, or combination, used to minimize catheter misplacement is 100% effective and the ability to identify and manage misplaced catheters remains one key element of safe practice.

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The expected frequencies of C&L grade ≥ 3 in Groups A–D were as follows:

(A) Unselected population 5.6% (95% CI 4.5–7.5).
(B) Immobilized with MILS 21.4% (18.4–24.7%).
(C) Immobilized with a stiff neck collar 64% (49–77%).
(D) Mallampati score ≥ 3: 20.7% (CI 16.8–25.8). Conservative upper limit used 34.5% (Shiga T, personal communication, 2011)

We then compared these ‘expected’ frequencies with those reported in the control groups of VL studies in the same patient populations. Control group incidence of C&L ≥ 3 was judged to be significantly elevated when it was higher than expected and the control group CI did not overlap with the benchmark CI.

In 10 Group A VL studies, six had a control group rate of C&L ≥ 3 higher than expected and in four this was significantly elevated. In Group B three VL studies all had lower than expected control group rates of C&L ≥ 3. In Group C three VL studies had significantly higher than expected control group rates of C&L ≥ 3. In Group D, all seven studies had a control group C&L ≥ 3 rate higher than expected and in three this was significantly elevated. Overall 10 of 23 studies reported significantly higher than expected rates of intubation difficulty in their control group. All references are available from authors on request.

The overall results are mixed but suggest that in an important proportion of papers comparing VL and DL the control group shows unexpectedly high rates of intubation difficulty. We are not suggesting that this is attributable to intentional misleading or poor quality research, but an inherent weakness of ‘non-blinded’ studies, which it is accepted may overestimate treatment effect by ≈ 17%.7

Readers and reviewers of such studies should pay as much attention to the control group as to the study group when interpreting these data.

Declaration of interest
T.C. has been paid by Intavent orthofix and the LMA company many years ago for lecturing. His (and J.N.’s) department has received airway equipment at cost or free for evaluation. No other financial or academic conflicts.

Use of transabdominal ultrasound to enhance safety during oesophageal dilatation

Editor—Oesophageal neoplasia is particularly common in Southern Africa;1 unfortunately, diagnosis is frequently late and curative therapy seldom possible.2 3 Palliative care with recurrent oesophagoscopy and dilatation is a frequent undertaking,2 3 but is not without risks.4 Oesophageal perforation during dilatation occurs in 10–15% of cases3 4 and is often not recognized at the time of the procedure,4 with attendant poor outcomes. No conclusive advantage or reduction in risk has been shown with the use of different types of dilators (Maloney, Savary-Gillard, or pressure balloon) nor with the use of fluoroscopic guidance.4 Trans-abdominal ultrasound has the potential to detect correct placement—or absence—of a guide wire or dilator within the stomach, thus guiding therapy and helping avoid perforation of the oesophagus, or at least aid in early detection. We document a case in which ultrasound performed by the anaesthetist detected perforation and aided in prompt further management.

A cachectic 54-yr-old female patient presented with infiltrating obstructive oesophageal squamous cell carcinoma for oesophagoscopy and dilatation. After obtaining i.v. access, establishing routine monitoring and pre-oxygenation, anaesthesia was induced with propofol and maintained with intermittent mandatory ventilation with isoflurane in oxygen and air. Muscle relaxation was initiated with succinylcholine for tracheal intubation and later maintained with vecuronium. No anaesthetic problems occurred; the patient was stable throughout the procedure.

Oesophagoscopy was performed by the cardiothoracic surgery registrar and consultant surgeon. Significant

3 Heath KJ. The effect on laryngoscopy of different cervical spine immobilization techniques. Anaesthesia 1994; 49: 843–845
5 Harris T, Ellis DY, Foster L, Lockey D. Cricoid pressure and laryngeal manipulation in 402 pre-hospital emergency anaesthetics: Essential safety measure or a hindrance to rapid safe intubation? Resuscitation 2010; 81: 810–816

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