difficulty such as success rates and duration of intubation attempts.1–6 Secondly, in our study, the use of the Airtraq reduced intubation difficulty as assessed by other endpoints, including reduced number of optimization manoeuvres, improved Cormack and Lehane glottic view, increased percentage of glottis opening scores, and reduced user-rated visual analogue scale device difficulty compared with both the C-MAC and Macintosh laryngoscopes. Thirdly, any deficiencies of the IDS score that would advantage indirect laryngoscopes such as the Airtraq would also be similarly advantageous to the C-MAC. Clearly, this did not happen, and the IDS did differentiate between these indirect laryngoscopes. Lastly, in our study, if the component of the IDS score relating to the glottic view is excluded, the IDS score is still higher in patients who underwent tracheal intubation with the C-MAC and Macintosh laryngoscopes (Table 1). For these reasons, we have confidence regarding the utility of the IDS score in our study.

Accordingly, we contend that the conclusions of our study, namely that intubation performance of the Airtraq laryngoscope is better than those of the C-MAC and Macintosh laryngoscopes in patients with cervical spine immobilization, are sound and are supported by the findings of the study.

Conflict of interest

None declared.

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Viable oxygenation with cannula-over-needle cricothyrotomy for asphyxial airway occlusion

Editor—The appropriate initial surgical airway to use in a ‘cannot ventilate, cannot intubate’ (CICV) situation is not established and evidence from a controlled clinical trial or substantial case series is not likely to be forthcoming. Options include standard open surgical cricothyrotomy, cricothyrotomy, and cannula-over-needle cricothyrotomy with or without jet ventilation with 100% oxygen. We present a case of asphyxia (hypoxaemia/hypercapnia) after post-anaesthetic extubation with successful initial management with a 14 G cannula-over-needle cricothyrotomy and manually applied continuous positive airway pressure (CPAP) by 100% O2, all captured on an automated electronic anaesthesia record revealing dramatic resolution of hypoxaemia, despite total proximal airway occlusion.

A 69-year-old Caucasian female, with a history of hypertension treated with an angiotensin-converting enzyme inhibitor, was undergoing elective angiogram and coiling of an unruptured cerebral aneurysm. A Docusys automatic anaesthesia record was used. A radial artery cannula was placed with continuous intra-arterial monitoring. Tracheal intubation was accomplished after four laryngoscopies eventually requiring the use of a stylet in a ‘hockey-stick’ configuration. Anaesthesia was maintained with desflurane and a vecuronium infusion. Heparin, dexamethasone, and protamine were given i.v. during the procedure. Initially, post-extubation, with nasal cannulae in place, she was following simple commands but, within a few minutes, she progressed through anxiety then obvious stridor for approximately a minute, then cessation of breathing movements and loss of consciousness. Support was escalated to higher O2 via a facemask/anaesthesia circuit, with progressive but ineffective attempts with mask ventilation with oropharyngeal airway, laryngoscopy, and laryngeal mask airway. SpO2 was maintained over 95% until 11:53 after which the patient became progressively hypoxaemic (Fig. 1), with cyanosis, and at 11:58, SpO2 was 0% until 12:06, culminating in asystolic cardiac arrest. Chest compressions were initiated. A cannula-over-needle (14 G) cricothyrotomy was placed and set up as described previously1 (cannula to a 3 ml syringe barrel to a 7.0 tracheal tube adapter to circuit). This enabled connection of the anaesthesia circuit which was then maintained manually at a CPAP of about 35–40 cm H2O. Chest compressions continued and cyanosis

<table>
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<th>Table 1 Effect of removing Cormack and Lehane score from the IDS score. *P&lt;0.05 compared with the C-MAC and Macintosh laryngoscopes</th>
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<td><strong>Airtraq</strong></td>
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disappeared and saturations on pulse oximetry improved abruptly at 12:06 to 76% with a return of spontaneous circulation with arterial pressure of 230/100 mm Hg. \(S_pO_2\) remained about 75% until 12:10 at which time there was an improvement to 100%. Arterial blood gas at 12:17 showed pH 7.07, \(P_aCO_2\) 10.3 kPa, and \(P_aO_2\) 8.4 kPa. Fibreoptically assisted oral tracheal intubation was attempted, but the presence of severe angiooedema prevented this. A surgical cricothyrotomy was performed around the 14 G catheter and then a tracheostomy. The patient was fully alert and following commands the following morning and was removed from ventilator support and shortly thereafter the tracheostomy was removed. Likely contributors to this were deemed to be reactions related to lisinopril\(^2\) or protamine\(^3\) possibly exacerbated by trauma related to the initial difficult intubation.

The ability of this approach to support systemic oxygenation, despite concomitant hypercapnia as we documented, has been demonstrated in a canine model,\(^4\) and the circuit setup we used has been described.\(^1\) Mace and Khan\(^5\) provide a comprehensive review of technique, indications, contraindications, and complications of needle cricothyrotomy, also described as cannula-over-needle cricothyrotomy. The problems related to cricothyroidotomy in CICV situations noted in the recent NAP4 study must be borne in mind.\(^6\) What we describe is not novel, but we suggest that our contemporaneous electronic documentation of capability to ameliorate the lethal levels of hypoxaemia with a straightforward, rapid cannula-over-needle cricothyrotomy plus manual CPAP and the subsequent neurologic recovery provide support for this approach as an appropriate first surgical airway manoeuvre for suboptimal situations of life-threatening asphyxial airway occlusion.

**Conflict of interest**

None declared.

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