occurring are shown in this table, and predictably gave rise to a wide variation in the observed \((\lambda - \alpha)\text{DO}_2\). However, these factors were not significantly different between the two groups and our primary outcome measure was the change in \((\lambda - \alpha)\text{DO}_2\) between 1 h before extubation and 1 h after, so each patient acted as their own control such that only events occurring between the two measurements of \((\lambda - \alpha)\text{DO}_2\) will have affected our results. All patients received a neuromuscular blocking agent, although we did not standardize which one as we are unaware of any evidence that specific drugs have different effects on postoperative lung function. Similarly, we did not document the use of reversal agents as their use was at the discretion of the anaesthetist with clinical responsibility for the patient, with whom responsibility for safe clinical care of the patient rested, including adequate breathing and airway reflexes at extubation.

We do not agree that ventilation with 7–10 ml kg\(^{-1}\) represents significant variance—the range provided allows account to be taken of the patient’s BMI as lean body mass was not formally calculated. Once again, we know of no evidence that tidal volume within this range has been shown to influence atelectasis formation. The decision to allow an \(F_{\text{IO}2}\) of 100% before extubation was taken as this represented the current safe practice in our institution. The use of 100% oxygen at critical periods for airway problems is regarded as mandatory by some commentators,\(^1\) and rather than being a confounding factor, our inclusion of 100% oxygen before extubation was quite deliberate as we hoped to demonstrate that this safety measure could be used without detriment. Sadly, we failed to demonstrate this was so, and therefore clinicians must continue to balance the benefit of 100% oxygen in prolonging the time to desaturation if post-extubation airway problems occur vs the risks of it exacerbating postoperative atelectasis.

Despite Dr Cattano’s reservation about our methods, we cannot agree with his conclusion. Our interpretation is that each patient acted as his/her own control, we used a single standardized recruitment manoeuvre which is proven to work, followed by a level of positive airway pressure before extubation which is known to be effective at preventing atelectasis on induction and safe in clinical use, allowed the anaesthetists to use enough oxygen to maximize the safety of their patient, and studied a group of patients whose management involved appropriate clinical use of neuromuscular blocking agents. This strategy was indeed ineffective.

**Conflict of interest**

None declared.

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**Bonfils intubating fibrescope in normal paediatric airways**

Editor—The Bonfils intubating fibrescope (BIF) (Karl Storz, Tuttinglen, Germany) is an elongated rigid laryngoscope with a distal curve of 40° over which a tracheal tube can be preloaded. This may improve the view of the glottis and allows the tube to be visualized as it passes between the cords. Paediatric versions of the scope have been recently introduced, but only limited data are available to describe the visual quality and ease of tracheal intubation in normal children, when compared with direct laryngoscopy (DL).\(^1\)

After local ethics committee approval and written informed consent, 50 healthy children, aged 2–14 yr with an average (SD) age and weight of 8.4 (3.9) yr and 32.3 (18.4) kg, requiring tracheal intubation for non-emergency surgery were enrolled in this prospective randomized clinical trial. Patients were randomized into two groups, 26 patients allocated to undergo conventional DL first followed by BIF and 24 to undergo laryngoscopy with BIF first followed by conventional DL, proceeding to intubation using the second laryngoscopy method. No adjuncts, jaw thrust manoeuvres, and laryngeal manipulations to improve ease of intubation were used in this study. The grade of the glottic view obtained (Cormack–Lehane scale), number of intubation attempts, and usability were recorded.

DL provided 38 grade 1 views and 11 grade 2 views, one grade 3 view; all were successfully intubated using DL, two of 24 required two attempts at intubation. The BIF resulted in 46 grade 1 views, two grade 2 views, and one grade 3 view (\(P=0.02\)). No view was obtained in one BIF patient due to secretions. Four of 26 BIF intubations required two attempts for successful intubation, and two of 26 failed after two attempts, but were easily intubated with DL.

This study demonstrates that in children with normal airways, the use of the paediatric BIF was associated with significantly improved laryngeal views; however, this failed to translate into easier tracheal intubations. It provides further evidence that the ‘scaled down’ paediatric BIF is not useful in daily clinical practice.\(^1\)

One case report in adults suggested that a two-person technique using a laryngoscope blade in conjunction with the BIF would enhance the pharyngeal space allowing easier intubation.\(^2\) The BIF has also been shown to be better than DL for the management of difficult airways in
adult practice. It is possible that the paediatric BIF may prove to be useful in children with difficult airways.

In summary, the paediatric BIF improves visualization of the glottis when compared with DL in the normal paediatric airways, but has a higher incidence of failure to intubate. Caution should be exercised when using newly developed ‘scaled down’ airway devices in paediatric anaesthesia without sufficient data to support their use in children.

Conflict of interest
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Improvement of cerebral blood flow patterns in hepatorenal syndrome using sustained low-efficiency dialysis

Editor—We report the case of a 23-yr-old male with cystic fibrosis who had end-stage cirrhosis of his liver and was referred to the intensive care unit (ICU) because of decompensated hepatic encephalopathy. In the ICU, his level of consciousness deteriorated and required tracheal intubation for hypercapnic respiratory failure. He started on haemodialysis for worsening renal failure. Over the night of day 4 and into the early hours of day 5, his clinical condition deteriorated and he suffered a generalized seizure that was associated with hypoglycaemia. He had a short asystolic cardiac arrest from which he was rapidly resuscitated. Through the night, he continued with ongoing seizures requiring benzodiazepines and propofol for suppression. A computed tomographic (CT) scan done that morning revealed diffuse cerebral oedema. That afternoon, the reversal of diastolic flow in the middle cerebral artery and an increased intracranial pressure (ICP) were identified using transcranial Doppler (TCD). Calculated direction of flow index (DFI) was <0.8 (0.77). A study has suggested that if this value is <0.8, recovery to forward flow throughout diastole was never observed and no patient recovered brain stem reflexes (Fig. 1).1

The possibility of an external ventricular drain was explored but due to diffuse cerebral oedema, coagulopathy, and collapsed ventricles, this was not appropriate. To manage this acute crisis, the patient was put on sustained low-efficiency dialysis (SLED) with a high effective osmolality. The investigations done before the SLED included: urea, 19.9; Cr, 288; and Na, 141. Dialysis was started at dialysate flow 550 ml min⁻¹, blood pump speed 250 ml min⁻¹, duration 7 h, and fluid balance=0. After dialysis, a repeat TCD study revealed a normal DFI. To our knowledge, no previous

Fig 1 First TCD on day 5 revealed diastolic flow reversal and increased ICP as shown by the elevated pulsatility index (PI) (3.72).

Fig 2 Improvements in cerebral blood flow patterns post-SLED, reversal of DFI back to normal.