Cuffed or uncuffed tubes during anaesthesia in infants and small children

Editor—The large randomized controlled trial of cuffed or non-cuffed tracheal tubes in small children demonstrated that experienced practitioners using exemplary (as opposed to standard) technique had a similar incidence of post-extubation stridor with either tube, and fewer repeat intubations with the cuffed tubes.1

In the accompanying editorial,2 it is proposed that paediatric anaesthetists should come into line with our adult colleagues and monitor cuff pressure routinely, or drop their opposition to cuffed tubes on the grounds of clinical unsuitability. There are two issues with this proposal, first, that cuff pressure monitoring can be assumed to be an intervention with no issues affecting current paediatric anaesthetic practice, and secondly, the assumption that it is widespread practice in adult anaesthesia at present.

Despite a profusion of reports all concluding that cuff pressures should be monitored routinely and frequently in order to minimize the incidence of tracheal tube cuff-related problems,34 this practice seems to be difficult to institute.45 Compounding this difficulty is the problem that many problematic intubations occur outwith the operating department, where equipment and advanced airway experience are not always immediately available. Anaesthetists are poor at assessing cuff pressure in current practice4 regardless of the age of the patient, other specialties poorer still.67

There are reasons for our failure to meet the standard of practice in the study, not just complacency or failure to buy the necessary equipment (although these contribute). There is an understandable reluctance to attach heavy items directly to airway devices as this may increase the risk of dislodgement or kinking of the tube. Infection control issues must also be considered. Direct transduction of tube cuff pressure using a standard monitoring line avoids some issues but introduces a snagging hazard.

Patients most at risk of airway complications relating to tracheal tubes are those who have been intubated more than 48 h.5 With this in mind, if we change to cuffed tubes for all paediatric cases, and monitor them with the currently available, rather clumsy equipment, might we just be swapping one set of complications for another?

Recommendations for changes in practice should be informed by high class research, but should be cogent of the context of the day-to-day practice that affects those patients most at risk of the complications they seek to minimize.

Declaration of interest

G.B. and K.J. are involved with the development of a new device aimed at limiting tracheal tube cuff pressure.

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Declaration of interest

M.W. and A.G. have been involved in the development and evaluation of a new cuffed paediatric tracheal tube in co-operation with Microcuff GmbH, Weinheim, Germany. A.G. has a consulting agreement with Kimberly Clark, Health Care, Atlanta, GA, USA. M.W. has a consulting agreement with Covidien, Athlone, Ireland.

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Concomitant levosimendan and esmolol infusion in ischaemic cardiogenic shock

Editor—Beta-adrenergic blockers and positive inotropic therapies are considered alternative strategies for the management of patients with heart failure. Inotropes improve haemodynamics, but have been associated with an increased risk of death and cardiac events with the possible exception of levosimendan.

We recently treated a patient with acute myocardial infarction (AMI) complicated by cardiogenic shock with simultaneous continuous infusion of levosimendan and esmolol.

A 56-year-old male had a massive anterior AMI at 6 a.m. on a cruise. Onboard thrombolysis reduced the ST segment elevation. At 7:45 a.m., the patient was transported to the nearest hospital where clinical examination showed: arterial pressure (AP) 70/40, heart rate (HR) 145 beats \( m^{-1} \), central venous pressure (CVP) 16 mm Hg, and peripheral oxygen saturation (\( S_pO_2 \)) 88%. Echocardiography showed an ejection fraction (EF) <20%, a restrictive diastolic pattern (the \( E/E' \) ratio >13 and the \( E/1/e' \) ratio >3, consistent with mild mitral insufficiency. Non-invasively measured (Flo Trac/VigileoTM, Edwards Lifesciences, Irvine, CA, USA) cardiac index (CI) was 1.8 litre \( m^{-1} \) \( m^{-2} \). After tracheal intubation and positioning of a fiberoptic intra-aortic balloon pump (IABP), levosimendan (0.1 \( \mu g \) \( kg^{-1} \) \( h^{-1} \)) and norepinephrine (0.3 \( \mu g \) \( kg^{-1} \) \( h^{-1} \)) were started. A percutaneous transluminal coronary angioplasty of the proximal left anterior descending (LAD) was performed with good results. TOE pulsed Doppler sampling of LAD showed an increase in flow velocity of 30% under IABP. Brain natriuretic peptide (BNP) concentration was 1240 pg \( m^{-1} \).

Owing to tachycardia (HR >140 beats \( m^{-1} \)) and a restrictive filling pattern, we decided to use beta-blocker treatment. After 2 h of levosimendan administration, i.v. esmolol was slowly titrated until the HR decreased to 70 beats \( m^{-1} \). TOE control showed an improvement of the \( E/E' \) and \( E/V_p \) ratio, and a 60% increase in LAD flow velocity, suggesting a net improvement of IABP effect after