the stainless steel reinforced ILMA upon awakening and the lack of studies on the reliability of the ILMA as a primary airway, especially for surgery of long duration.

In conclusion, as Dr Beriault stated, the conventional LMA is an option for patients with difficult airways and if we follow the example set by our British colleagues, it is an option we should be examining more often.

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Acute causes of circulatory collapse and neurologic dysfunction after trauma

To the Editor:

The management of patients with multiple trauma is a challenging and formidable task. Two of the commonest problems seen in patients with serious trauma are shock and neurologic dysfunction. As a rule, multiple causes are present, and an exhaustive search for all of them is important. For timely identification of the etiologies, I have devised the following acronyms: C.H.E.S.T. T.R.A.U.M.A. for shock or circulatory collapse:

- Cardiac contusion
- Haemothorax
- Embolism (air, fat)
- Spinal cord injury
- Tamponade
- Tension pneumothorax
- Rupture of the heart
- Aortic injury
- Uncorrected blood and fluid loss
- Myocardial ischaemia, arrhythmias, injury
- Adrenal insufficiency, anaphylaxis, acute severe brain injury, metabolic causes, etc.

H.E.A.D.A.C.H.E. for neurologic dysfunction after trauma:

- Haematoma
- Elevated intracranial pressure
- Air or fat embolism
- Diffuse axonal injury
- Alcohol, drugs, diabetes, hypothermia, thyroidism, metabolic causes, etc.
- Concussion
- Hypoxia or hypoperfusion of the brain from hypotension or cerebrovascular insufficiency
- Epilepsy

Note that some of the conditions could precede and/or follow the traumatic event.

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Erratum

Please note, a correction in the appendix of the article "Volume kinetics of Ringer's solution and dextran 3% during induction of spinal anaesthesia for Caesarean section". Published in the May issue of Can J Anaesth 1998; 45: 443–51.

Appendix

The one-volume fluid space model is described by the following differential equation:

$$dv/dt = k_i - k_b - k_r \frac{(v-V)}{V} \qquad \text{[Eqn. 1]}$$

which is solved as a monoexponential solution. Before induction of anaesthesia, it is

$$w(t) = \frac{(k_i - k_b)}{k_r}(1-e^{-kr\ t/V}) \qquad 0 \le t \le t_1 \qquad \text{[Eqn. 2]}$$

and after (a) induction

$$w_a(t) = (w_1(t) - \frac{k_i - k_b)}{k_r} e^{-kr\,(t-t1)/(V-\Delta V)} + \frac{k_i - k_b}{k_r} \qquad t_1 \le t \le \infty \ \text{[Eqn. 3]}$$

where w(t) is the dilution $(v(t)-V)/V$ and ΔV is the change in baseline (target) volume induced by the spinal anaesthesia. k_r is calculated from the measured urine excretion and has different values during and after the induction of the anaesthesia.

The following system of differential equations describes the situation in the two-volume fluid space model:

$$\frac{dv1}{dt} = k_i - k_b - k_r \frac{(v_1 - V_1)}{V_1} - k_t \left[\frac{(v_1 - V_1)}{V_1} - \frac{(v_2 - V_2)}{V_2}\right] \qquad \text{[Eqn. 4]}$$

$$\frac{dv2}{dt} = k_t \left[\frac{(v_1 - V_1)}{V_1} - \frac{(v_2 - V_2)}{V_2}\right] \qquad \text{[Eqn. 5]}$$

The solution of the two-volume model, [Eqn. 4] and [Eqn. 5], can be presented in different ways. Both an analytical solution[7] and a matrix solution[9] have been presented previously. As with the one-volume model,