anaesthesia the normal use of the tube is suction for gastric emptying and, as is illustrated in these case reports, this may lead to hypoventilation with subsequent hypoxia and hypercarbia.

As a result of our experiences we have a number of observations. Firstly, we suggest that the curvature of the nasogastric tubes described is such that it favours tracheal rather than oesophageal passage. Perhaps due to the manufacturing process, or as a result of packaging, the curvature of the distal end is immediately obvious when the nasogastric tube is unwrapped. The current use of low-pressure, high-volume cuffs on endotracheal tubes may facilitate the ease with which the trachea is violated by a nasogastric tube.¹ The triggering of several alarms simultaneously was very distracting and tended to divert attention away from the patient. Finally, we now maintain a high degree of suspicion regarding placement when performing blind nasogastric intubation in anaesthetized patients.

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REFERENCE

- 1 Sweatman AJ, Tomasello PA, Loughhead MG, Orr M, Datta T. Misplacement of nasogastric tubes and oesophageal monitoring devices. *Br J Anaesth* 1978; 50: 389.

Clinical use of peripheral nerve stimulators

To the Editor:

The recent review article on the clinical use of peripheral nerve stimulators was quite thorough,¹ but failed to mention a most useful configuration for facial nerve stimulation, which may not have been previously described. I recommend positioning the negative electrode over the facial nerve trunk just anterior to the earlobe. The positive electrode is placed over the lateral margin of the *contralateral* eyebrow. This configuration causes *direct* muscle stimulation of the (contralateral) musculus orbicularis oculi and musculus occipitofrontalis near the positive electrode, which often will simulate pre-block nerve stimulation and baseline response. At this same time, neuromuscular blockade monitoring occurs via the

stimulated facial nerve's effect on the ipsilateral orbicularis oculi and occipitofrontal muscles. These ipsilateral muscles are now at a maximal distance from both electrodes and also positioned anterior-superior to the current flow. This minimizes/excludes direct muscle stimulation of the ipsilateral muscles. Providing comparative visualization of the direct effects on the contralateral muscles provides a foolproof check that a stimulator malfunction has not occurred. This is also a useful method to teach and differentiate the clinical effects of direct muscular vs neuromuscular stimulation to trainees.

Also worth mentioning is the placement of ulnar nerve electrodes proximal and distal to the sulcus nervi ulnaris on the medial epicondylus of the humerus. This site is readily and consistently localized by trainees and direct muscle stimulation is also minimized. Interposed tissue is furthermore quite minimal even on most obese patients. Caution must be exercised to ensure that the electrodes do not cause direct ulnar nerve compression (which may lead to permanent nerve damage). The arm may also be repositioned during the anaesthetic, which may lead to movement of this loose skin and electrodes away from the ulnar nerve, which is fixed tightly in the sulcus.

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REFERENCE

- 1 Hudes E, Lee KL. Clinical use of peripheral nerve stimulators in anaesthesia. *Can J Anaesth* 1987; 34: 525-34.

Erratum – Heparin reversal protocol

Pounder D.R. *Can J Anaesth* 1988; 35: 321-2.

The following formula, for y_d , the amount of heparin remaining in the circulation, contained an error (n substituted for 2):

$$y_d = \frac{x_d - x_0}{n} \left(\frac{y_1}{x_1 - x_0} + \frac{y_2}{x_2 - x_0} \right)$$

The correct formula is:

$$y_d = \frac{x_d - x_0}{2} \left(\frac{y_1}{x_1 - x_0} + \frac{y_2}{x_2 - x_0} \right)$$