

a new source of medical waste, and its carbon footprint is certainly not negligible considering the import from emergent countries.<sup>9</sup>

Disposable blade in laryngoscopy seems presently well established in Languedoc-Roussillon. SUBs are a source of medical waste, thus this practice should be re-analysed in a spirit of sustainable development and risk–benefit balance.

## Declaration of interest

None declared.

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## Sugammadex in a parturient with myotonic dystrophy

Editor—Myotonic dystrophy levior (Myotonia congenita levior—Thomsen 2, MCL), an autosomal-dominant disease bound to the chloride channel, is a chronic, slowly progressing, highly variable, inherited multisystemic disease. It is characterized by wasting of the muscles (muscular dystrophy), cataracts, heart conduction defects, endocrine

changes, slow gastric and bowel emptying, and myotonia. Patients with myotonic dystrophy show myotonic responses to succinylcholine,<sup>1</sup> neostigmine,<sup>2</sup> and increased sensitivity to non-depolarizing neuromuscular blocking agents.<sup>3, 4</sup>

The use of sugammadex, a novel drug developed specifically for the rapid reversal of neuromuscular block induced by steroidal non-depolarizing neuromuscular blocking agents, was reported in a patient with myasthenia gravis,<sup>5</sup> Huntington's disease,<sup>6</sup> and also in a woman with myotonic dystrophy.<sup>7</sup>

We report a case of a woman, born in 1980, and diagnosed by a neurologist as having MCL at the age of 25. In the history, there was recorded cervical and low back pain. Physical examination showed the typical facies of myotonic dystrophy with atrophic sternocleidomastoid muscles. Most symptoms of MCL were in the lower limbs, but there was also myotonic reaction in upper arms and forearms. Muscle strength was symmetric. She suffered from paroxysmal tachycardia and the echocardiography showed mitral insufficiency with minimal haemodynamic significance. Her physical status was classified as ASA II.

In 2009, she underwent Caesarean section (CS) in general anaesthesia induced with i.v. thiopental (5 mg kg<sup>-1</sup>), rocuronium (1 mg kg<sup>-1</sup>), and maintained with sevoflurane (1.0 MAC). The newborn was a female, 2800 g, Apgar score 9–10–10. The level of muscle relaxation during CS was monitored via train-of-four (TOF, TOF-Watch SX, Organon, The Netherlands) stimulation mode every 15 s. At the end of the surgery (50 min), there was T0 in TOF stimulation. In this case, active reversal of neuromuscular block with neostigmine was contraindicated due to the depth of blockade and also due to MCL. After 2 h and 30 min of mechanical ventilation in the intensive care unit, muscle strength fully recovered and the patient was extubated.

The same woman, pregnant again with a gestational age of 38 weeks, was undergoing CS. No progression of the MCL had been found during the past 2 yr. Anaesthesia was induced with i.v. propofol (2 mg kg<sup>-1</sup>), rocuronium (1 mg kg<sup>-1</sup>), and maintained with sevoflurane (1.0 MAC). The newborn again was a girl, 3230 g, Apgar score 10–10–10. At the end of anaesthesia, there was T0 in TOF stimulation after 55 min of surgery. For active reversal of deep neuromuscular block, we used sugammadex in a dose of 4 mg kg<sup>-1</sup>. TOF 0.9 was achieved in 2 min. The patient was extubated without any complications and with full muscle strength. Postoperative care was provided in the recovery room for 2 h after operation and she was then transferred to the intermediate care unit of the obstetric department. No exacerbation of myotonia and no recurrence of muscle relaxation were observed perioperatively. On the fifth postoperative day, she was discharged.

In this report, our patient with myotonic dystrophy showed normal recovery of the TOF ratio to 0.9 after the administration of sugammadex (4 mg kg<sup>-1</sup>) from deep blockade (TOF 0) in 2 min. She had normal sensitivity to rocuronium at induction (decrease to ST 10% in 50 s), prolonged duration of neuromuscular block induced with rocuronium

(up to 3 h after administration), and showed normal response to sugammadex.<sup>8,9</sup>

These two episodes in the same patient provide evidence for the benefits of sugammadex in patients with myotonic dystrophy.

## Declaration of interest

None declared.

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## The Hawthorne effect: can it be measured and utilized?

Editor—The feasibility of improving pain management by a systems level approach seems to be obvious; however, there is still a lack of evidence on the effectiveness of such an approach.<sup>1</sup> In their recent paper, Usichenko and colleagues<sup>2</sup> evaluated the impact of a clinical quality management system (QMS), based on procedure-specific, multimodal analgesic protocols, modified to meet the individual patient's requirements, on postoperative pain (POP) in surgical patients. The plausible and expected POP reduction intensity with a simultaneous decrease in analgesia-related side-effects has led to an increased quality of life and patient satisfaction. The authors mentioned, with a good reason, the potential presence of a Hawthorne effect (HE). However, they did not attempt to measure its size in relation to the overall effect of QMS implementation. Therefore, the scientific value of the HE in this study is not clear.<sup>2</sup> We admit that a randomized study design is not feasible in this field of research; however, a longitudinal study is capable to identify the quota of HE since the HE extent is time-dependent (fading over time). A second way to measure the HE is to ask the participants of the study what they believe, that the performance improvement is based on.<sup>3</sup> To our knowledge, the implementation of QMS under the supervision of the German quality and safety monitoring agency requires annual audits and re-certification every 3 yr.<sup>4</sup> It is easy to use these audits to measure the HE magnitude and monitor the motivation of the involved staff. This leads to an interesting questions: if significantly present—can we actively utilize the HE? Performing a longitudinal study could also be used to sensitize and incite the involved staff to improve POP treatment. Supervisors should regularly answer questions like: On which tasks and services they focus? Patients and staff should be asked on which items they are interested? Maximizing the HE could be achieved by implementing questions in the surveys like: What services we should focus in future? And: How can we increase our interest in POP treatment? In conclusion, the HE should not only be regarded as a confounding factor in performance measurements, if we quantify the contribution of HE, we could possibly use it as an additional strategy to improve POP treatment.

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