Anaesthetic management of a patient with Charcot–Marie–Tooth disease for staged diaphragmatic plication

Editor—With great interest, we have read the article by Pasha and Knowles.¹ We found it to be a very interesting article as it offers more information on these patients’ anaesthetic management. The authors describe two types of anaesthesia in the same patient and used vecuronium in the first. Under anaesthesia, they describe a possible residual effect with vecuronium. As they mention in their article, there is considerable dispute about the use of neuromuscular blocking agents in these patients. No consensus has been reached on the management of these patients. However, after considering the potential prolonged neuromuscular block that may appear in these patients, we wish to ask about the possibility of using rocuronium, given its greater selectivity with sugammadex.² Moreover, we would like to ask the authors if it was possible for them to monitor the neuromuscular response in the adductor pollicis or corrugator supercilii, and if so, what the results were. The literature describes some cases in which it has been possible to monitor the neuromuscular response with the adductor pollicis or corrugator supercilii in patients with Charcot–Marie–Tooth (CMT) syndrome and severe generalized polyneuropathy.³ ⁴

The authors do not describe if a neurological examination was done before surgery, or any previous surgery and anaesthesia in the patient.

CMT syndrome is a peripheral polyneuropathy that produces autonomic denervation and muscle atrophy until patients become immobilized, as in this case. Pasha and Knowles indicate that the use of succinylcholine in these patients could be safe.⁵ A study by Martyn and Richtsfeld⁶ explained the phenomenon of proliferation of acetylcholine receptors on the muscle membrane in neuropathies, which can cause massive release of potassium on exposure to succinylcholine. In addition, prolonged immobilization may also increase the risk. Hence, we should exercise care, perhaps avoid succinylcholine, and consider rocuronium for rapid sequence induction in these patients.

We had a patient with CMT syndrome for an emergency Caesarean section in whom we undertook rapid sequence induction with rocuronium. We reversed it with sugammadex and saw no residual effect. In our case, there was no possibility of neuromuscular monitoring because it was an emergency Caesarean section and there was no monitor in our operating theatre. After an extensive literature search, we found only two studies where rocuronium was used without any residual paralysis,⁷ although there was one report of prolonged effect, possibly secondary to liver dysfunction.⁸

Finally, Pasha and Knowles¹ considered the risk of malignant hyperthermia (MH) in these patients, which is unfounded because this is a neuropathy, not a myopathy. CMT syndrome is a peripheral demyelinating polyneuropathy that can evolve progressively and severely to produce chronic muscular dystrophy. As described in the literature, the relationship between CMT syndrome and MH is not clear; thus, one could consider that any patient with muscle disease is at increased risk of MH.⁹ Pasha and Knowles have quoted the study by Antognini⁵ for an improbable relationship between MH and CMT syndrome. In that study, MH-inducing agents were administered in more than 100 surgical procedures, and no cases of MH were found. The authors mentioned the small sample size, so they were unable to exclude a potential risk in these patients. Furthermore, there is one case which describes MH in CMT syndrome.¹⁰ Therefore, we must be careful and avoid anaesthetic agents that can cause MH as much as possible.

Declaration of interest
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Dexmedetomidine in peripheral and neuraxial block: a meta-analysis

Editor—We read with interest the meta-analysis by Drs Abdallah and Brull, which concluded that dexmedetomidine prolongs both sensory and motor block after central and peripheral nerve blocks.¹ We would like to highlight some of our concerns about the study.


First, we note that the doses of dexmedetomidine in the included trials vary from 3 to 100 μg. It has been demonstrated in both animal and human studies that the duration of sensory block is related to the dose of dexmedetomidine used. A meta-regression would have been useful to assess the influence of dexmedetomidine dosage on the reported findings.

Secondly, there was no consistency in the local anaesthetic agent used in the trials. Mantouvalou and colleagues showed that the use of intrathecal ropivacaine resulted in a reduced duration of sensory and motor block compared with bupivacaine and levobupivacaine. Subgroup analysis based on local anaesthetic type would have been useful to assess the impact of this factor upon the differences in duration of nerve block.

Thirdly, the data presented in the meta-analysis combine that obtained after both peripheral nerve and neuraxial block. There are differences in the mechanism of action of local anaesthetics using these two techniques. The volumes of local anaesthetic used are also different, which may have an impact upon the duration of block. Hence comparison between the two groups, as demonstrated in Figure 2, is of limited benefit due to the influence of several confounding variables.

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2 Brummett C, Padda A, Amodeo F, Welch K, Lydic R. Perineural dexmedetomidine added to ropivacaine causes a dose-dependent increase in the duration of thermal antinociception in sciatic nerve block in rat. Anesthesiology 2009; 111: 1111–9

**Lack of reduction in overall stroke rate**

Editor—I read with interest the article about intraoperative epiaortic scanning (EAS) for stroke prevention in off-pump coronary artery bypass grafting (CABG). Reducing the incidence of stroke is an important issue in cardiac surgery. However, I believe that several other factors need to be considered as causes for the lack of significant reduction in overall stroke rate.

Interpretation of subgroup results is known to be potentially misleading, even when defined a priori. This is especially true with such low numbers of both patients and incidence of stroke. I believe that the required sample size to indicate statistical significance and a power of 80% in a randomized controlled study with a two-tailed P-value of <0.05 is about 5000 patients.

Displacement of atherosclerotic plaques resulting in embolic strokes can be caused by carotid puncture during insertion of central lines. The authors do mention that Swan–Ganz catheters were inserted, but do not include their incidence of carotid punctures, or record the relationship between carotid puncture and stroke. This is especially important as carotid disease was identified as significantly higher in the EAS group, which could account for the non-significance of the overall stroke rate.

Another issue was the potential conversion from off-pump to on-pump CABG. This is not mentioned as an exclusion criterion and no information regarding any such cases were included in the results. In the literature, the conversion rate is cited between 1% and 16%. If the type of surgery is of importance in stroke rate, then the number of off-pump to on-pump conversions here would also have had an impact on the overall significance.

In order to justify the costs of new equipment (and the support training required), I believe these results require confirmation, preferably in a multicentre study.

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