J Anesth (2012) 26:953–954
DOI 10.1007/s00540-012-1432-4

LETTER TO THE EDITOR

Latent myasthenia gravis revealed by protracted postoperative effect of non-depolarizing neuromuscular blockade

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Received: 1 May 2012 / Accepted: 30 May 2012 / Published online: 20 June 2012

Keywords Latent myasthenia gravis · Non-depolarizing neuromuscular blocker · Anti-acetylcholine receptor antibody

To the Editor:

Subclinical myasthenia gravis (MG) can usually be found by the detection of the anti-acetylcholine receptor (AChR) antibody following a roentgen diagnosis of thymoma. We describe a rare case of latent MG diagnosed by anti-AChR antibody positivity determined consequent to a protracted postoperative non-depolarizing neuromuscular blocking effect in a patient with no preoperative symptoms of MG.

The patient was a 68-year-old woman who underwent bilateral adnexectomy at a hospital affiliated with our department. She had no preoperative symptoms of MG. Preoperative blood examinations, a chest X-ray, and a lung function test were normal. General anesthesia was induced with 80 mg of propofol and 8 mg of vecuronium after the insertion of an epidural catheter; anesthesia was maintained with oxygen/nitrous oxide/sevoflurane (0.7–1 %) combined with 1 % lidocaine (total 13 ml) as epidural anesthesia. Additional vecuronium was not administered. Acceleromyography and bispectral index monitors were not in use at the hospital. Her body temperature was 36 °C during anesthesia. Operation time was 50 min, but she did not begin breathing spontaneously until 65 min after completion of the operation. Although 2 mg of neostigmine and 1 mg of atropine were administered intravenously to reverse the neuromuscular blockade after slight spontaneous breathing was recognized, her spontaneous breathing did not recover sufficiently. Therefore, an additional 1 mg of neostigmine was administered twice. Although her spontaneous breathing was still weak, she was extubated 135 min after completion of the operation and received 5 L/min oxygen through a face mask. Subsequently, she was kept under careful observation in the operation theater because the hospital did not have an intensive care unit. Arterial blood gas analysis indicated 7.18/86 mmHg/181 mmHg ($pH/PaCO_2/PaO_2$) 180 min after the operation. Finally, 200 min after the operation, she regained almost full spontaneous breathing. After a blood sample was obtained for the examination of anti-AChR antibody, on suspicion of MG, she was returned to the ward. At a later date, the sample was found to be strongly positive (90.4 nmol/L) for anti-AChR antibody, and thymoma was revealed on chest computed tomography. She underwent thymectomy at another hospital 2 months after the bilateral adnexectomy.

Only one report, by Wojciechowski et al. [1], is available concerning latent MG causing protracted postoperative apnea with the use of a neuromuscular blocking agent. It is very rare to encounter the need for anesthetic management in a patient with asymptomatic MG, except in anti-AChR antibody positive patients who have been diagnosed with a thymoma. Protracted postoperative apnea usually occurs because of an excessive dose or delayed elimination of an anesthetic, analgesic, or neuromuscular blocking agent. Low body temperature may also cause apnea. But it is unlikely that any of these factors influenced the clinical course of the patient whose findings we have described. The presence of latent MG should be suspected

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when unaccountable protracted apnea occurs after anesthesia. It is of great significance that a thymoma was detected and resected early, before enlargement and invasion, consequent to a diagnosis of latent MG. Unterbuchner et al. [2] have reported that sugammadex can easily reverse rocuronium-induced neuromuscular blockade in a patient with MG. The protracted postoperative apnea may not have occurred if this drug had been used in the patient we have described.

References

1. Wojciechowski AP, Hanning CD, Pohl JE. Postoperative apnoea and latent myasthenia gravis. Value of acetylcholine receptor antibody estimation in the differential diagnosis. Anaesthesia. 1985;40:882–4.
2. Unterbuchner C, Fink H, Blobner M. The use of sugammadex in a patient with myasthenia gravis. Anaesthesia. 2010;65:302–5.