**Postoperative hyperpyrexia: Retracing malignant hyperthermia**

Sir,

The malignant hyperthermia (MH) syndrome is an unexpected complication after general anesthesia. Mortality still remains high despite its complex and demanding management. In most reported cases, MH occurred during administration of the triggering agents; however, there are few reported cases in which the onset of MH began in the postoperative period.\[1\] We report a case of suspected MH presenting postoperatively after a written informed consent of the parents of the patient was obtained.

A 4-month-old boy, diagnosed as Chiari II malformation with lumbosacral meningomyelocele and congenital hydrocephalus, was scheduled for a right ventriculoperitoneal shunt surgery. He had previously not received general anesthesia and family history was not significant. Anesthesia was induced with sevoflurane and maintained with fentanyl, air, oxygen, and sevoflurane. Muscle relaxation was achieved with non-depolarizing agent vecuronium bromide. The intraoperative course was uneventful and the trachea was extubated after surgery (duration: 1.5...
Postoperative fever should always raise the suspicion of MH, although MH occurs rarely. Successful management depends on early institution of treatment based upon prompt diagnosis supported by the clinical criteria. Despite the use of modern anesthetic agents, one should be aware of the existence of this life-threatening disease in the postoperative period and this warrants the availability of dantrolene and the other resources in any anesthetic service delivery set-up to effectively deal with this situation.

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Table 1: Evaluation of the present case on the clinical grading scale (adapted from Larach et al. [4])

| Parameter                                                                 | Score |
|---------------------------------------------------------------------------|-------|
| Generalized muscular rigidity                                            | 15    |
| Arterial PaCO₂ > 60 mmHg with appropriately controlled ventilation       | 15    |
| Inappropriately increased temperature > 38.8°C (101.8°F) in the perioperative period (in anesthesiologist’s judgment) | 10    |
| Cardiac involvement                                                      | 3     |
| Arterial pH < 7.25                                                       | 10    |
| Total                                                                    | 53    |

h). Muscle rigidity was noted after about 25 min in the postanesthesia care unit (PACU). At the same time, the patient was found to be febrile. The temperature had reached 42.7°C within 30 min of the postoperative period. The possibility of MH was considered. Dantrolene was not available yet active cooling was started to decrease the body temperature. Blood sample was taken and sent for estimation of creatine kinase level. The patient developed tachycardia and tachypnea, and gradually his respiration became labored. Arterial blood gas analysis showed severe respiratory acidosis. The patient’s trachea was intubated and lungs ventilated with minute ventilation set to compensate for the respiratory acidosis. The patient developed ventricular tachycardia within the next 30 min which was refractory to lignocaine administered in a dose of 1 mg/kg. Subsequently, the patient developed ventricular fibrillation. Despite prolonged cardiopulmonary resuscitation and defibrillation, the patient could not be resuscitated. Blood investigation results received later showed increase in serum creatinine kinase 1230 IU/l and urine was negative for myoglobin.

MH in the postoperative period may be confused with a number of conditions like hypercarbia, hypoxia, neuroleptic malignant syndrome, thyrotoxicosis, and pheochromocytoma. The only definitive diagnostic test for MH is contracture testing. Larach et al. [4] described a clinical grading scale that helps to differentiate MH from other conditions. We arrived at the diagnosis of MH on the basis of the clinical symptoms and clinical grading scale. According to this scale, when the raw score is 50 or more, then MH rank is 6 and the likelihood of MH is almost certain. The present case had a raw score of 53 points [Table 1].

All other pharmacological agents used in the present case are thought to be safe in patients prone to MH, except sevoflurane. Sevoflurane and desflurane are known to be less potent triggering agents and produce a more gradual onset of MH. MH triggered by sevoflurane was first reported in MH-susceptible swine. Therefore, there have been many reports on the intraoperative occurrence of MH with sevoflurane in humans.