

Letters to the Editor

Severe masseter spasms in a Rett syndrome during rapid sequence intubation: A succinylcholine severe side effect

Sir,

Succinylcholine is a blocker of neuromuscular transmission widely used for rapid sequence intubation. Despite its potential severe side-effects, its quick onset of action and short-acting make it the treatment of choice for rapid sequence intubation.^[1] Major side effects reported are hyperkalemia, histamine release, increased of intracranial and intraocular pressures and malignant hyperthermia when associated to halothane.^[2] In children, it is known that succinylcholine associated with halothane can be responsible for severe masseter spasm.^[3-5] We report a case of severe masseter spasm related to succinylcholine in a child.

The patient was a 5-year-old girl suffering from Rett syndrome. Before this hospitalization, she did not suffer from apnea, trismus and chronic respiratory failure. She presented a severe form of convulsive encephalopathy. She was admitted in our hospital for respiratory distress. Her first clinical examination revealed a moderate respiratory distress with fever up to 40.2°C. Laboratory studies revealed normal serum chemistry, a C-reactive protein at 200 mg/l (nl < 5 mg/l), procalcitonin at 4.59 ng/l (nl < 0.5 ng/l) and lactacidemia were normal. Tests for influenza A & B were negative. After 48 h, her respiratory condition worsened and required pediatric Intensive Care Unit admittance. After 24 h of noninvasive ventilation, she showed neurological impairment and hypercapnia on arterial blood gases (PaCO₂ 76 mmHg) and needed invasive mechanical ventilation. This first orotracheal intubation by a 4.5 mm cuffed endotracheal tube was done under propofol sedation without any complication. After 3 weeks, we attempted to wean the patient from mechanical ventilation. She was extubated and put on non-invasive ventilation support. After a few hours, she

was severely hypercapnic and developed generalized tonic-clonic seizures and required re-intubation in an emergency. Therefore, rapid sequence intubation was done with ketamine (2 mg/kg) and succinylcholine (1 mg/kg). Cricoid pressure was maintained during all the procedure. Flaccid paralysis was obtained 20 s after administration of succinylcholine, but the mouth could not be opened and masseter muscles seemed to be in spasm. Additional 1 mg/kg of succinylcholine was administered without any significant effect. After 10 min, despite mask-ventilation by a self-inflated bag, the hypoxic cardiac arrest happened, and a small mouth opening allowed us to place a cuffed 4 mm orotracheal tube. This masseter spasm had been noticed by a physician during almost 20 h after use of succinylcholine which was quite surprising. A high dose of midazolam was successfully used to stop generalized tonic-clonic seizures. No other medication or anesthetic gases were used. No hyperthermia was noticed. Post-cardiac arrest laboratory results showed respiratory acidosis with normal lactate level, acute liver cytolysis (ASAT: 2056 UI/L and ALAT: 1109 UI/L), normal kidney function, and subnormal creatinine kinase (125 UI/L).

Twenty-four hours later, dysfunction of the cuffed orotracheal tube required a re-intubation that was performed under vecuronium. No masseter spasm was observed. Normal vaccination status against tetanus was noted in the history.

Protective hypothermia was done during 24 h. Brain magnetic resonance imaging 5 days after the prolonged cardiac arrest did not show post-ischemic damages.

The use of succinylcholine for rapid sequence intubation has shown its usefulness. It increases the safety and success rate of rapid intubation. We describe here, a rare case of a severe masseter spasm during rapid sequence intubation in a patient suffering from Rett syndrome.

Use of succinylcholine in patient suffering from myopathy is not recommended because of a high-risk of rhabdomyolysis and hyperkalemia but to our knowledge, no association between masseter spasm, succinylcholine and Rett syndrome is actually known. However, Rett syndrome is associated with severe dystonia and trismus which could be a risk factor for using succinylcholine.^[6]

Our case report raises some questions about the use of succinylcholine in rapid sequence intubation. Indeed, despite its efficiency, many adverse effects must be known by the young emergency physician to anticipate them. Finally, in this case of severe masseter spasm, use of vecuronium, a non-depolarizing neuromuscular blocker, allowed us a safety re-intubation.

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Conflicts of interest

There are no conflicts of interest.

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