Could it be?: A Presumed Case of Intraoperative Malignant Hyperthermia.

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INTRODUCTION

Malignant Hyperthermia (MH) is a rare inherited skeletal muscle disorder whereby exposure to volatile anesthetic agents or depolarizing muscle relaxant uncouples normal cell metabolism. Once the cascade of muscle cell lysis begins, the anesthesiologist must react quickly to prevent end-organ damage and death. In our case, tachycardia and masseter muscle spasm (MMS) appeared within 5 minutes of induction. MMS at induction is usually associated with succinylcholine administration. With limited case reports of MMS without succinylcholine during sevoflurane inhalational induction in children under age 10 and short onset time of 5 minutes after induction makes our case unique.

CASE REPORT

• 7 y/o female
• PMHx: A 7 year-old girl without personal and family anesthetic history presented for
  • Scheduled Surgery: BMTs
  • No premedication

Induction:
• Standard ASA monitors
• 50% nitrous oxide in oxygen → titration of sevoflurane to 8%.

• Tachycardia >190 beats/minute
• Tidal volumes dropped
• Oral airway attempted → MMS prevented mouth opening → a nasal trumpet placed
• Adequate BMV (20ml/kg)
• EtCO2 remained >50 mmHg
• MMS continued and rigidity of the extremities developed.
• MH was suspected → IV placed → converted to propofol infusion.
• Axillary skin temperature was 37°C
• Additional anesthesia help was requested
• Circuit was flushed with high-low oxygen
• ABG: pH 7.29, PaCO2 58 and HCO3 25
• Dantrolene 2.5mg/kg was prepared and administered
• BMT procedure was completed
• Adequate spontaneous ventilation resumed, patient not intubated
• Additional PIV, arterial line and Foley catheter
• MHAUS hotline called
• After emergence → transferred to the PICU
• Dantrolene infusion continued
• CK values trended downward
• Vital signs remained stable for 2 days, patient d/c
• RYR1 genetic screen sent

DISCUSSION

Because MH can lead to death if there is a delay in diagnosis or treatment, all anesthesiologists should be vigilant for MH signs. Early signs like tachycardia are often non-specific. MMS can occur after succinylcholine administration, but is associated with only 50% incidence of MH. In this case, the only agents given were inhalational sevoflurane and nitrous oxide. Two arguments against TMJ dysfunction are: the child had no history of bruxism or TMJ disorder and she was very calm pre-operatively. We believe the clinical "nings of tachycardia, increased EtCO2 despite increased minute ventilation, MMS, truncal rigidity, and maintenance of body temperature in a cool environment all occurring 5 minutes after high-dose sevoflurane induction make MH the likely diagnosis.

REFERENCES