Regional anesthesia as a safe approach in the Malignant-Hyperthermia susceptible patient scheduled for cesarean delivery

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Background: Malignant Hyperthermia (MH) is an autosomal dominant disorder, which involves calcium dysregulation in skeletal muscle cells. It's characterized by a life-threatening hypermetabolic state that develops following patient exposure to triggers such as volatile anesthetic agents and depolarizing neuromuscular blockers. The main clinical features of MH are: hypercarbia, tachycardia, hyperthermia, acidosis, muscle rigidity and rhabdomyolysis.

Methods: An otherwise healthy, 33-year-old pregnant women with no previous anesthetic history of general anesthesia (GA) was scheduled for labor induction at 41 weeks of gestation, which failed, thus requiring cesarean delivery. However, the patient had family history (first-degree cousin) of MH during GA. We decided to perform spinal anesthesia (L3-L4 level, 27G Quincke® needle, administered 8 mg of hyperbaric bupivacaine 0.5% plus 2 mcg sufentanyl, achieving surgical anesthesia up to T6 level bilaterally). Due to the potential risk of MH, precautions were taken to avoid all possible triggers in the event of a block failure such as:

- **Notifying the anesthetic staff**
- **Removing trigger agents from the operating room.**
- **Changing anesthetic breathing circuit and carbon dioxide absorbent**
- **“Washing out” the ventilator machine with fresh gas flow more than 10L/min during an hour**
- **Securing 2 large bore iv lines**
- **Making Dantrolene available (2mg/kg for immediate iv bolus and 1mg/kg to repeat as necessary until patients response)**
- **Making one staff element incharged of dissolving Dantrolene in 60 ml of distilled water for administration**
- **Other drugs available: sodium bicarbonate, calcium gluconate, insulin...**
- **Storing cold saline fluids for infusion**
- **Awaring ICU in case MH was triggered**

Results: A satisfactory spinal block was achieved, which allowed surgery without complications. Throughout the entire procedure, the patient remained complaint-free and hemodynamically stable without evidence of MH.

Conclusion: Patients susceptible to MH may be submitted to GA if triggers are avoided, but the procedure is not risk-free. While several strategies for MH-prevention under GA exist, regional anesthesia proves to be the technique of choice, not only for its well-known advantages in obstetric surgery, but also because local anesthetics are considered safe in this setting, allowing an uneventful anesthesia with no exposure to MH-triggering agents.