

Anesthetic Management in Parturients Susceptible to Malignant Hyperthermia

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Introduction

- Malignant hyperthermia (MH) is an autosomal dominant condition due to mutations in the RYR1 gene coding for the ryanodine receptor.
- Symptoms of MH are caused by unregulated release of calcium ions in skeletal muscle¹.
- The clinical and biological signs of MH crisis secondary to triggering anesthetics are life threatening.
- Parturients who have a past medical or family history of MH present special challenges.



Case Presentation

- 41 y/o G4P3 at 37+7 WGA
- PMHx: Seizure disorder and Obesity
- Pre-operative evaluation with OB anesthesia:
 - Discussed goal of natural delivery, TOLAC
 - Minimal intervention
 - Family history of MH (maternal grandfather and uncle)
- IOL 2/2 Gestational HTN and Fetal Macrosomia
- On admission, symptomatically COVID positive
- One O.R. reserved during labor with malignant hyperthermia precautions
- Successful NSVD without complications



Discussion



- + Parturient MH history should prompt
 - Early anesthetic preoperative evaluation ideally with OB Anesthesia
 - Plan in place for urgent or emergent general anesthesia
- Deliver non-triggering anesthetic
 - neuraxial (epidural or spinal), TIVA
- Ensure MH treatment readily available
 - Recommend delivery at tertiary care centers
- Anesthesia providers may need to **educate** L&D staff regarding increased risks of MH susceptible patients and urgent or emergent cesarean delivery.

References

- 1) Ben Abraham R, Adnet P, Glauber V, Perel A. Malignant hyperthermia. Postgrad Med J. 1998 Jan;74(867):11-7. doi: 10.1136/pgmj.74.867.11. PMID: 9538480; PMCID: PMC2360775.
- 2) Pollock NA, Langton EE. Management of malignant hyperthermia susceptible parturients. Anaesth Intensive Care. 1997 Aug;25(4):398-407. doi: 10.1177/0310057X9702500413. PMID: 9288384.