Perioperative Management of a Parturient with Neuromyelitis Optica

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Introduction: Devic's disease or neuromyelitis optica (NMO) is a severe inflammatory demyelinating disorder of the central nervous system that involves recurrent episodes of transverse myelitis and optic neuritis. NMO has traditionally been considered a variant of multiple sclerosis, and management of the two diseases was similar. More recently, a specific IgG antibody against the astrocytic water channel Aquaporin-4 (AQP4) has been implicated in the pathogenesis of NMO, and it is considered a unique entity from MS (1). We report the anesthetic management of a parturient with active Devic's disease who underwent general endotracheal anesthesia for elective repeat cesarean delivery.

Case: Our patient initially presented with NMO after a previous cesarean delivery with an epidural, and the association of the neuraxial technique with her disease process was uncertain. General anesthesia was chosen for her repeat cesarean delivery to avoid potential exacerbation of her NMO. General anesthesia was provided successfully for cesarean delivery. She underwent rapid sequence induction with propofol and rocuronium. The intubation was uneventful, followed by maintenance with sevoflurane, nitrous oxide, fentanyl, and hydromorphone. The patient exhibited heightened sensitivity to neuromuscular paralysis, requiring a higher dose of cholinesterase inhibitor for blockade reversal and short-term bimodal positive airway pressure assistance upon extubation. Postoperative pain management was approached aggressively because the patient had been taking chronic opioid analgesia for her disease. Close postoperative follow up was uneventful. The patient experienced no short-term postoperative exacerbation of NMO; self-limited constipation was evaluated by a neurologist and thought to be unrelated to her underlying disease process. At a two month follow-up, the patient denied further exacerbation of her condition.

Discussion: There is a paucity of literature regarding the anesthetic management of patients with NMO. To our knowledge, only two case reports describe the obstetric anesthesia management of patients with NMO: the worsening of NMO with the use of a bupivacaine epidural for labor analgesia converted to anesthesia for urgent cesarean delivery, and the development of NMO following subarachnoid anesthesia with bupivacaine for a repeat cesarean delivery (2,3). The development of NMO after a bupivacaine spinal anesthetic has also been reported in the nonobstetric literature (4). A cause-effect or unmasking relationship between regional anesthesia and NMO is not known, but existing case reports are concerning for this possibility. This case highlights the potential challenges of anesthetic management in a parturient with a rare neurologic disease.