Emergency cesarian section in a patient of myasthenia gravis: Is neuraxial anesthesia safe?

Sir,

A 25-year-old primigravida was brought to our hospital at 3 months amenorrhea with severe respiratory distress, bilateral ptosis, and generalized weakness. She was put on ventilatory support. Later it was learnt that she had generalized weakness since childhood but had not sought medical treatment for the same. There was no prior history of respiratory embarrassment requiring mechanical ventilatory assistance. Her electromyography showed detrimental response, her serum tested positive for anticholinesterase antibody, and was for the first time diagnosed as myasthenic. She underwent five cycles of plasmapheresis following which she could be weaned off ventilator and was also put on prednisolone and pyridostigmine. At 35 weeks, she came to the emergency department with premature rupture of membrane and fetal distress, hence had to undergo emergency c-section. Pre-operative visit revealed that power in all four limbs was adequate. She had no ptosis, dysphagia, or dyspnea. She had taken pyridostigmine and prednisolone in the morning.

She was given ranitidine and metoclopramide injections before shifting to operation theater (o.t.) Inside o.t. after preloading the patient with 500 ml of ringer lactate, she was given spinal anesthesia with 0.5% heavy bupivacane 10 mg at L3−L4 interspace. Sensory blockade ascending till D5 dermatomal level was achieved. She did not experience any difficulty in breathing or swallowing intraoperatively and remained hemodynamically stable. The cesarean section was uneventful. The patient was closely monitored in the post-anesthetic care unit for 2 h, during which recovery of the lower limb motor power was noted. Later, the patient was monitored in the high-dependence unit for 48 h. Her regular dose of oral pyridostigmine medication was resumed 6 h after surgery. Clinically, she did not display any sign or symptoms of exacerbation during the postoperative period in hospital. Both the patient and baby were discharged on the 7th post-operative day.

The course of Myasthenia Gravis in pregnancy as well as its influence on pregnancy outcome is unpredictable. It has been shown that 40% may show exacerbation of myasthenia symptoms.[1] Although possible at any state during pregnancy, it is more likely during the first trimester and the first month postpartum.[2] Myasthenia gravis is not in itself, an indication for cesarean section. However, it would be undesirable for labor to be prolonged and exhausting.[3]

During preoperative visit, information concerning myasthenic symptoms and therapy should be obtained. Physical examination should include particular attention to respiratory and bulbar involvement. Myasthenia gravis is frequently associated with hyperthyroidism, and thyroid- function studies are recommended if there is clinical suspicion of thyroid dysfunction. Recently performed pulmonary function tests will be of value in managing severe respiratory insufficiency, should it develop.

There is little in the literature with regard to the optimum technique of anesthesia for cesarean section in patients with myasthenia. Both regional and general anesthesia have been used. General anesthesia with endotracheal intubation is more appropriate if bulbar weakness or respiratory inadequacy is present as it ensures protection of the airway and adequate ventilation.[4] The main problem lies in titration of neuromuscular blocking agents as well as the risk of anticholinesterase overdose after reversal which may itself cause excessive muscle weakness and need for postoperative ventilation.

Patients with ocular myasthenia or with mild generalized myasthenia not involving the respiratory muscles are suitable candidates for regional anesthesia. Although epidural anesthesia is preferred, some authors prefer spinal anesthesia over epidural as epidural requires larger doses of local anesthetics. There is concern that high blood levels of local anesthetic drugs may interfere with neuromuscular transmission.[5,6] Studies have however suggested that effects of systemic blood levels of local anesthetic drugs on neuromuscular transmission only become significant at levels which cause death in experimental animals.[6] There is no evidence of increased sensitivity of the neuromuscular junction to local anesthetic drugs in myasthenics. However, it is known that local anesthetic drugs given in anti-arrhythmic doses can enhance neuromuscular blockade from both depolarizing and nondepolarizing muscle relaxant. In our case, plain bupivacaine 10 mg was used safely with no excessive block or respiratory depression. Motor block also regressed normally after 1.5 h.

In the post-partum period as many as 30% of pregnant myasthenic patients may have exacerbated symptoms within 3 weeks of delivery.[3] The anticholinesterase requirements may vary and repeated evaluation of ventilation (including measurements of vital capacity), swallowing and speech is recommended. Regional anesthesia also has the advantage that it ensures minimal interference with gut function thus allowing early resumption of oral anticholinesterase therapy.

Though general anesthesia has been used conventionally, neuraxial anesthesia can be safely used if patient selection is proper, and high level of sensory–motor block is prevented.

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