



CHALLENGES TO ANAESTHESIOLOGIST IN PATIENTS WITH MYASTHENIA GRAVIS

Anaesthesiology

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ABSTRACT

Myasthenia Gravis (MG) is an acquired, autoimmune disorder affecting neuromuscular junction presenting with easy fatigability, progressive weakness, diplopia, difficulty in speaking and swallowing and even ventilatory failure in severe cases. During pregnancy the disease may go into remission or may exacerbate at any time during first, second and third trimesters or postpartum period. We are reporting a case of 26 years multigravida female, known case of myasthenia gravis since 9 years, who underwent caesarean section and developed muscular weakness on second postoperative day. Her neonate also had tachypnoea and hypotonia, both the mother and the baby were managed aggressively and responded well to therapy.

KEYWORDS

Caesarean Section, Myasthenia Gravis, Thymectomy, Pyridostigmine.

Introduction:

Myasthenia gravis (MG) is an acquired, autoimmune disorder affecting the neuromuscular junction presenting with easy fatigability, progressive weakness, diplopia, difficulty in speaking and swallowing and even ventilatory failure in severe cases.⁽¹⁾

The incidence of MG in pregnancy is 1:20 000. The effect of pregnancy on myasthenia gravis is variable. Approximately one third of myasthenic pregnant get better and one third get worse at some time during their pregnancy, while one third do not change.

Anticholinesterase medicines and corticosteroids are the mainstay of medical therapy of maternal myasthenia gravis and require frequent adjustment during pregnancy due to changing requirements and physiologic changes in absorption and excretion. The anticholinesterase medications and steroids have not been found to be associated with significant risk for congenital defects.⁽²⁾

Regarding the newborns, the incidence of transient neonatal myasthenia gravis has been reported between 9-30%. The typical clinical findings are generalised hypotonia and poor sucking. The other manifestations are swallowing and sucking problems and mild respiratory distress.⁽³⁾

We are reporting a case of 26 years multigravida female, known case of myasthenia gravis since 8 years, who underwent caesarean section and developed muscular weakness on second postoperative day. Her neonate also had tachypnoea and hypotonia, both the mother and the baby were managed aggressively and responded well to therapy.

Case report:

A 26 years multigravida, diagnosed case of MG for 9 years, presented to our hospital at the time of delivery. She had a history of thymectomy 8 years back under general anaesthesia for aggravation of her disease. She was on oral pyridostigmine 60 mg three times daily and prednisolone 10 mg per day since thymectomy. And had an uneventful gestational period. Her last pregnancy was uneventful.

In view of meconium staining liquor, an emergency caesarean section

(CS) was scheduled.

After steroid supplementation with 100 mg hydrocortisone i.v. and preloading with 1000 ml Ringer'S lactate solution, a subarachnoid block was instituted with 2.0 ml of 0.5% hyperbaric bupivacaine in L3-L4 interspace using 25G Quinke type spinal needle. Her hemodynamic and respiratory parameters were stable during surgery. A 2.8 kg healthy male child was born and was kept in paediatric ICU for observation. Mother was kept and was monitored for any muscular weakness. Neostigmine 0.75 mg was given intramuscularly 4 hr after surgery with a shift to oral pyridostigmine 60 mg three times a day after reappearance of bowel sounds. On next day of surgery patient complaint of generalised muscular weakness and ptosis. On examination pupils were dilated. Oral pyridostigmine was increased to 90 mg three times a day. Patient responded well to the treatment with improvement in the weakness. Patient was discharged from ward after three days of surgery.

In paediatric ICU, the baby was observed for three days and he developed mild tachypnea, but responded with oxygen therapy only. He was also discharged after 3 days from birth.

Discussion:

MG is most common disorder affecting neuromuscular junction. It is an acquired relapsing and remitting autoimmune disorder associated with acetylcholine receptor deficiency at motor end plate, caused by complement fixing antibodies, its incidence ranges from 1:100000 to 1:50000 (incidence in pregnancy is 1:20000).⁽⁴⁾

MG runs a variable and unpredictable course during pregnancy due to changing requirements and physiologic changes in absorption and excretion. It has been reported to be highly variable and unpredictable in the antepartum period. Outcome in previous pregnancy is not predictive of what the future course might take in subsequent pregnancy. It is recommended that anticholinesterase therapy be continued orally throughout the period of pregnancy. However, erratic gastric absorption during labour may necessitate a shift to equivalent intramuscular dosage. Steroids, though safe during pregnancy, should be reduced to minimal effective dose.

Thymectomy is more beneficial if done prior to pregnancy, as was the case with our patient. Literature supports thymectomy to be beneficial even during pregnancy.^(5,6)

It is important for anaesthesiologist to assess the frequency and severity of myasthenia attacks. The type and dosage of anticholinesterase should be noted and readjusted to obtain optimal symptomatic relief before labour and should be shifted to intramuscular dosage if required. In severe disease, pulmonary function tests and ECG should be considered. Thyroid function tests may be undertaken as high incidence of autoimmune thyroid disorders are associated with this condition.

Both regional and general anaesthesia have been described in literature for caesarean delivery in patients with MG. In patients with ocular and well controlled generalised disease, central neuraxial block is preferable, but in severe disease with bulbar involvement, general anaesthesia with endotracheal intubation is mandatory due to risk of aspiration.⁽⁷⁾

These patients can develop complications in form of myasthenic crisis or cholinergic crisis at any time during pregnancy, labor or postpartum period. Postpartum exacerbation of myasthenic weakness is very common and pupillary size is the only clinical criterion by which one can differentiate between the two conditions (in cholinergic crisis pupils have miosis and mydriasis in case of myasthenic crisis). The treatment for myasthenic crisis is neostigmine and atropine in case of cholinergic crisis.⁽⁸⁾

Conclusion:

Anaesthesiologist has an important role in perioperative period of a myasthenic mother. One should be observant even after delivery of baby and patient should be monitored carefully even after discharge from PACU. The anaesthesia of choice is central neuraxial block in well controlled disease and general anaesthesia in case of severe disease. Anaesthesiologist should avoid long acting muscle relaxants in case of MG patients to avoid confusion between weakness due to muscle relaxants and myasthenic crisis.

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