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Case Report

Obstetrics and Gynaecology Section

Distinguishing Myasthenia Exacerbation from Severe Preeclampsia: A Diagnostic and Therapeutic Challenge

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ABSTRACT

Myasthenia gravis is an acquired, autoimmune neuromuscular disorder characterized by voluntary muscle weakness. Pregnant patients may have disease exacerbation, respiratory failure, crisis, adverse drug reaction, surprisingly enough remission at any trimester or postnatal period. Concurrence of myasthenia gravis with severe preeclampsia is a dreadful condition raising diagnostic and management issues. We hereby discuss a case of myasthenic woman who developed severe preeclampsia during pregnancy and presented in last trimester with clinical features mimicking signs of impending eclampsia. Keeping in mind the history of myasthenia gravis, urgent neurology review taken and diagnosis of myasthenic exacerbation was entertained. She responded well to injection neostigmine and in this way inadvertent use of magnesium sulphate was avoided.

Keywords: Inadvertent, Magnesium sulphate, Myasthenia gravis, Neostigmine, Thymectomy

CASE REPORT

A 25-year-old primigravida at 36 weeks gestation presented in emergency with complaints of severe headache, shortness of breath, blurring of vision, all limb weakness and leakage per vaginum. She was known case of myasthenia gravis for past 8 years. She had undergone thymectomy 6 years back in view of myasthenia crisis. She was started on pyridostigmine 60mg four times a day along with neostigmine 15 mg and prednisone 15 mg once a day.

On admission patient was confused, her general physical examination revealed blood pressure of 150/100 mmHg, respiratory rate of 26/min, 3+ protenuria by Dipstick method and significant pedal oedema. She did not have previous blood pressure records or any biochemical investigations. She was non-compliant to her medications, had stopped pyridostigmine at fifth month of gestation and was taking neostigmine 15 mg and prednisone 15 mg once a day. Local examination confirmed leakage and obstetrical sonography showed fetal parameters of 32 weeks gestation (growth restriction) with nil liquor. First impression of impending eclampsia was kept in mind; however ptosis along with muscular limb weakness on examination was some unusual features, so urgent neurology review was taken and final diagnosis of myasthenia exacerbation was entertained. Magnesium sulphate was withheld. She was given injection neostigmine 2.5mg intravenous, tab pyridostigmine 60mg added and steroids hiked to 60mg/day. Patient counseled but was not affording for intravenous immunoglobulins. Luckily she responded to neostigmine and supportive treatment. In between decision of emergency cesarean was taken in view of severe fetal distress with meconium stained liquor. She underwent uneventful cesarean under spinal anaesthesia and had a live born baby of 1.8kg. She remained stable in postoperative period, baby did not have any complications except neonatal jaundice and both were discharged in satisfactory condition at tenth postoperative day.

DISCUSSION

The reported incidence of myasthenia gravis in pregnancy is 1:20,000 and females are affected twice as compared to males [1]. Pregnant patients may have disease exacerbation, respiratory failure, crisis, adverse drug reaction, surprisingly enough remission at any trimester or postnatal period [2]. In general, there is no adverse influence of myasthenia gravis on pregnancy, nonetheless increased risk of preterm labour, rare association with preeclampsia and transient neonatal myasthenia has been cited in many studies [3,4]. Transient neonatal myasthenia gravis occurs in 10-20% of cases owing to the passage of maternal antibodies through placenta to fetus [5]. Some rare complications like bone marrow suppression resulting in leucopenia and thrombocytopenia in pregnancy has been mentioned in literature and this could be due to the sharing of autoimmune mechanisms [6].

In index case rare association of myasthenia gravis and severe preeclampsia revisited. There are very few cases reported in literature and most of them have talked about increased maternal and neonatal morbidity. To the best of our knowledge this is the first case which discusses about distinguishing myasthenia exacerbation from impending eclampsia. Myasthenia gravis with severe preeclampsia is a dreadful condition raising diagnostic and management issues [7]. Use of magnesium sulphate, a standard drug used for managing severe preeclampsia or eclampsia is contraindicated in myasthenia gravis. Inadvertent use of magnesium sulphate in such patients has been reported to result in myasthenia crisis, therefore levetiracetamor valproic acid can be used for seizure prophylaxis in these patients and phenytoin is reserved for refractory cases as it can exacerbate weakness [7-9]. In index case increased blood pressure and proteinuria made us to think about impending eclampsia but few clinical features like ptosis, limb weakness, absence of epigastric pain, neurological examination helped us to arrive at correct diagnosis. Although plasmapheresis and intravenous immunoglobulins are indicated for severe exacerbation, less severe cases can be managed by injection neostigmine and supportive treatment as in our case.

There is a conflicting literature regarding effects of thymectomy on the course of myasthenia gravis during pregnancy and post-partum period. In retrospective analysis by Roth et al., it was concluded that thymectomy seems to have unremarkable effect on myasthenia symptoms in pregnancy [10] but, nonetheless, because of improved general state of thymectomized women exacerbations in these patients during pregnancy are well tolerated and better managed. This observation may explain the good outcome of our patient.

Fetal growth restriction may be due to severe preeclampsia in our case as myasthenia gravis does not affect the growth and development of fetus [11]. There is 3 times increased risk of preterm premature rupture of membranes and incidence of cesareans is also two fold higher in myasthenic patients as evident from literature

which is in agreement with our index case [12]. Vaginal delivery as such is not a contraindication for women with myasthenia gravis. Cesarean is indicated for obstetrical indications and choice of anaesthesia for well controlled disease is regional block. In severe disease general anaesthesia with endotracheal intubation is obligatory to avoid aspiration [13]. Acetyl cholinesterase inhibitors i.e. pyridostigmine and neostigmine are not potentially teratogenic and should not be stopped during pregnancy. Breast feeding is not contraindicated except in cases of myasthenia crisis or if patient is taking immunosuppressive therapy.

CONCLUSION

Myasthenia exacerbation or crisis should be kept as differential whenever pregnant myasthenic patient with severe preeclampsia presents with clinical features mimicking impending eclampsia. Progressive neuromuscular weakness, dysphagia dysphonia or respiratory insufficiency out of proportion to bulbar or limb weakness are usual signs of myasthenia exacerbation or crisis while patient of impending eclampsia presents with headache visual disturbances, nausea, vomiting, epigastric pain or progressive oedema. These points can be useful for any clinician facing a dilemma like this. This case reminds about the inherent dangers to mother and baby when association of severe preeclampsia with myasthenia gravis is visited.

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