Acute Exacerbation of Multiple Sclerosis in Pregnancy: A Case Report

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Abstract

Multiple sclerosis is a common neurological disease, which affects young adults. Its course is unpredictable and runs over decades. It is considered as an autoimmune disease in which there is demyelination of the brain and spinal cord. The case presented is a young adult pregnant Nigerian who had a flare up of the symptoms in pregnancy. The patient was managed conservatively during pregnancy and commenced on oxybutynin, methylprednisolone and multivitamins shortly after delivery. The disease continued unabated till patient’s death.

Key words: Multiple sclerosis, pregnancy

Introduction

Multiple sclerosis (MS) is a rare demyelinating disorder of the central nervous system. It is a complex human autoimmune-type disease with predominantly unknown aetiology. Numerous soluble mediators have been implicated and these include interleukin (IL) 4, IL-6, IL-10, IL-12, IL-18, interferon (IFN) gamma. Immunologic destruction of the myelin brain protein (MBP) throughout the nervous system is the main pathology. MS affects young adults; its course is unpredictable and runs over decades. The demyelination seen in MS provides a permitting condition for axonal degeneration, which seems to be causative of permanent neurologic deficit. Stress has been identified as one of the aggravating factors among others especially in the relapsing-remitting MS.

Case report

A 30-year-old Nigerian lady para2+0 presented with a six months history of recurrent left sided headaches, transient hemiparesis, diplopia and weakness. The headaches would last between 2-4 hours of moderate severity and generalized with associated blurring of vision and photophobia. The patient had had two episodes of left sided hemiplegia, which lasted two-three weeks on each occasion with full recovery. One month before presentation, the patient had suffered an episode of transient diplopia and dysphagia of one week duration. She was neither diabetic nor hypertensive, not on any regular medications or family planning method.

Examination conducted revealed a young lady with body mass index (BMI) of 25.7kg/m² conscious and not febrile. Positive central nervous system findings include patchy reductions in pinprick; light touch and temperature sensations in the left arm and the left lower leg below the knee. The patient’s blood pressure (BP) was 120/70mmHg, fasting blood sugar (FBS) was 4.2mmol/l, and haemoglobin was 11.2g/dl. Fundoscopy was essentially normal. Lumbar puncture done revealed nothing significant.

An initial diagnosis of migraine was made and she was treated along that line with dexamethasone and sumatriptan with little or no improvement and to have magnetic resonance imaging (MRI) of the brain.

She was lost to follow-up, only to represent 8 months later with 5 months amenorrhea and worsening state with fever on & off, vomiting.
dysarthria, slurred speech, and diplopia. Neurological examination showed intact consciousness, no meningeal signs, pupils were not dilated, there were nystagmus (vertical and oscillatory), right facial nerve palsy of the upper motor neuron type, left glossopharyngeal nerve palsy, left hemiparesis with generalised brisk reflexes. There were no premature reflexes. A possibility of multiple sclerosis-like syndrome was thought of and planned for brain and spinal MRI after delivery. Termination of pregnancy was advised but rejected. She was then managed conservatively and delivered per vaginam of a life baby boy at 37 weeks. The patient’s condition deteriorated post delivery.

MRI revealed multiple irregular, focal nodular hyperintense areas within the corona radiata bilaterally in the periventricular regions. Similar focal hyperintense lesions were also seen in the pons all suggestive of plaques. The cerebellum appeared normal together with the ventricles, cisterns and sulci. The impression was that of MS involving the pons and coronal radiata.

She was placed on oxybutyllin, methylprednisolone, multivitamins and physiotherapy. Along the line she had recurrent urinary tract infections (UTI) and aspiration pneumonitis for which she was treated. Patient’s condition began to dwindle by the day and this continued till patient’s death.

A post mortem was carried out that revealed multiple sclerosis plaque lesions in the white matter of the cerebellum and the mid- brain. Other findings were pulmonary congestion, bilateral petechial haemorrhages in the kidneys and pyelonephritis scars bilaterally. However histology was not carried out.

**Discussion**

Multiple sclerosis is a rare demyelinating disorder of the central nervous system. It is a complex genetic disease associated with inflammation in the central nervous system white matter thought to be mediated by autoimmune T- cells. Affected individuals have disseminated foci of demyelination in the brain and spinal cord. The prevalence of MS disease ranges from 30 to 100 cases per 100000 individuals. Literature is scanty on the prevalence of MS in Nigeria and indeed Africa.

MS, like other presumed autoimmune diseases, is more common in females and often first manifests clinical symptoms during young adulthood. At its onset, MS can be clinically categorized as either relapsing-remitting MS (RRMS, observed in 85-90% of patients) or primary progressive MS (PPMS). Relapses or “attacks” typically present sub acutely, with symptoms developing over hours to several days, persisting for several days or weeks, and then gradually dissipating. The attacks are likely caused by the traffic of activated, myelin-reactive T cells into the CNS, causing acute inflammation with associated oedema. The ability of high dose steroids to so quickly abrogate MS symptoms suggests that the acute oedema and its subsequent resolution underlie the clinical relapse and remission respectively.

The outcome in patients with RRMS is variable; untreated, approximately 50% of all MS patients require the use of a walking aid within 10 years after clinical onset, although the consequence on prognosis on newer treatment regimens are not as yet clear. Increased attack frequency and poor recovery from attacks in the first years of clinical disease predict a more rapid deterioration. The primary progressive form of MS is characterized from the onset by the absence of acute attacks and instead involves a gradual clinical decline. Clinically, this form of the disease is associated with a lack of response to any form of immunotherapy. This leads to the notion that PPMS may infact be a very different disease as compared to RRMS.

MS often occurs in young women, and the effect of pregnancy on the disease is poorly understood and infact a matter of controversy. In the PREGNancy In Multiple Sclerosis (PRIMS) study of Vukusic et al, it was found out that there were reduction in the relapse rate during pregnancy, in comparison to the year before pregnancy, especially marked in the third trimester, and a significant increase in the relapse rate in the first trimester part post partum. Care of pregnant women with MS is challenging because of the multiple physiological changes associated with pregnancy and the need to consider the impact of any intervention on the foetus. In the absence of a specific immune-based assay, the diagnosis of MS continues to be predicted on the clinical history and neurological examination; that is, finding multiple lesions in time and space in the CNS. The use of MRI has had a major impact on allowing the early and more precise diagnosis of the disease. Management of MS may be divided into two categories consisting of; 1) treatment designed to arrest the disease process and 2) symptomatic therapy. Immunosuppressive drugs remain the cornerstone of therapy in the first modality of treatment, although their efficacy is limited and their chronic use entails considerable risk.

In the present report, diagnosis could not be made early enough due to the loss to follow-up and when she again represented she was already 5 months pregnant. The stress induced by the pregnancy led to acute exacerbation of the disease condition immediately post partum. Had it been that she had not defaulted in the first instance and agreed to termination of her pregnancy when she represented, probably she would have survived. Early MRI is advocated in suspected cases so as to start immunomodulating therapy.

**References**

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