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Case Report

Late Miscarriage and HHV-6 Meningoencephalitis: A Case Report

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Abstract

Human Herpesvirus 6 (HHV-6) is often associated with asymptomatic infections, but in immunocompetent adults is relatively rare. A 24-years old pregnant woman at 16 weeks of gestation presented a meningoencephalitis caused by HHV-6, confirmed by MRI (Magnetic Resonance Imaging) and cerebrospinal fluid (CSF) sample. Acyclovir treatment (750 mg IV for 3 times/die) was started but after hours the patient started a spontaneous labor arose which determined a late miscarriage at 16+5 weeks of gestation without evidence of intra-amniotic infection or chorioamnionitis. The patient was discharged after 3 weeks in good health and without neurological sequalae. The exact role of HHV-6 in the development of late miscarriage and its incidence in late abortions is currently unknown.

Keywords: ***meningoencephalitis, human herpesvirus 6, late miscarriage***

Case report

Human Herpesvirus 6 (HHV-6) is often associated with asymptomatic infections. Primary manifestation in infants can be an exanthema subitum (roseola infantum), a benign rash illness [1], but in adults is relatively rare. Reactivation of latent infection may cause fever, rash, pneumonitis, hepatitis, and, in rare cases, meningoencephalitis [3]. The virus can reactivate in response to stress, immunosuppression, or drugs such as steroids and histone deacetylase inhibitors [4]. In literature, only one case of HHV-6 meningoencephalitis in an immunocompetent pregnant woman is reported. The patient recovered from the disease without any sequelae, her pregnancy was uneventful, and she delivered a healthy baby weighing 3400 g.

An immunocompetent 24-years old pregnant African woman at 16 weeks of gestation presented at emergency room complaining of fever resistant to paracetamol, lipothymia and abdominal pain. The patient, G2 P1, had a silent medical history and a previous vaginal delivery of a healthy baby after an uneventful pregnancy. First trimester screening was negative. Her white blood cells (WBC) count was 15000/µL and the C-reactive protein (CRP) was 19.17 mg/dL. The cervical length was normal, and the uterus was relaxed, with no signs of miscarriage threat. A urinary tract infection (cystitis or pyelonephritis) was suspected and after admission antibiotic treatment with Piperacillina-Tazobactam was started. Antibody testing for Human Immunodeficiency Virus (HIV) and the Sars-Cov-2 swab were negative. Despite antibiotic therapy, the patient presented headache, neck stiffness and persistent fever. In consideration of the clinical features and the negative results of urine culture and hemocultures, a meningoencephalitis was suspected, and MRI (Magnetic Resonance Imaging) was performed. The MRI showed an alteration of signal intensity suggestive of infectious origin. Cerebrospinal fluid (CSF) sample was positive for HHV-6 viral DNA, whereas the search for Herpes Simplex Virus type 1 and 2, Cytomegalovirus (CMV), Enterococcus, Varicella-Zoster Virus, Parechovirus and Mycobacterium tuberculosis were negative. Acyclovir treatment (750 mg IV for 3 times/die) was started. Unfortunately, the day after a spontaneous labor started resulting in a late miscarriage at 16+5 weeks of gestation. Her WBC count was 27000/ µL and CRP level was 25.07 mg/dL. Due to retained placenta, the patient underwent a manual removal of placenta without complications. The histological examination demonstrated that the placental disc weight, cord length and cord coil index were within normal limits for the gestational age with no evidence of intra-amniotic infection or chorioamnionitis. After 3 weeks of treatment and the normalization of WBC count and CRP level, the patient was discharged in good health and without neurological sequalae.

Conclusions

The exact role of HHV-6 in the development of late miscarriage and its actual incidence in late abortions is unknown. In our case the patient did not develop chorioamnionitis, but we assume that the maternal infection trigged the cascade of prostaglandins and consequently childbirth. Given the rarity of this condition, report each case could improve management and counselling of HHV-6 meningoencephalitis during pregnancy and help in clinical choices in the context of differential diagnosis.

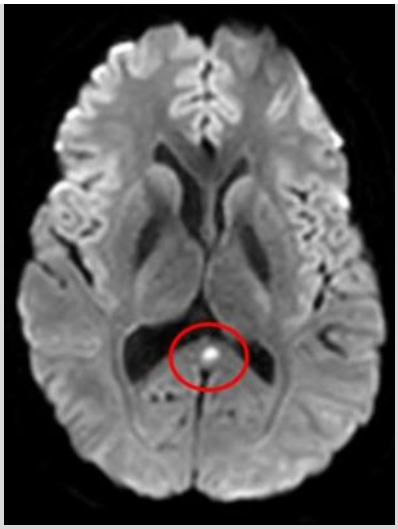

Fig 1: DWI MR image shows a small round area in the splenium of corpus callosum (red circle) characterized by restriction of protonic diffusion (high hyperintensity).

Ethics approval and consent to participate

This paper is a case report, not a research study. Ethical approval was not considered necessary. Consent to write up this case report for publication was obtained from the patient, including any material. All data have been anonymised and cannot be identified.

List of abbreviations

HHV-6: Human Herpesvirus 6; CRP: C-reactive protein; HIV: Human Immunodeficiency Virus; WBC: white blood cells; CSF: Cerebrospinal fluid; CMV: Cytomegalovirus

Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

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Authors' contributions

CIA and AL analyzed and interpreted the patient data. SB was a major contributor in writing the manuscript. RA, DS and VR supervised the working group. All authors read and approved the final manuscript."

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