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CONGENITAL CMV INFECTION WITH SEVERE CLINICAL ISSUES - A COMPELLING CASE REPORT IN NORTH MACEDONIA

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Abstract

Cytomegalovirus (CMV) is one of the most common congenital infections in the world and has a mild or asymptomatic course in immunocompetent patients. Nonetheless, in certain population groups, including newborns, who become infected *in utero* can have significant and, in many cases, even lethal consequences.

However, congenital cytomegalovirus (CMV) is not yet well known in women of childbearing age. In this case report, we present a newborn infant who presented with thrombocytopenia, petechiae, and direct hyperbilirubinemia because of infection with CMV. At first, the diagnosis process pointed to congenital sepsis rather than CMV. The significance of including a TORCH panel in the assessment of atypical presentations in the newborn is manifested in this case.

The process of punctual diagnosis of CMV is of serious importance because untreated infections can lead to lifelong consequences, even death.

Keywords: cytomegalovirus, congenital infection, newborn.

Introduction

Cytomegalovirus is a familiar virus set up in numerous body concealment like slaver, urine and feces and can be transmitted to the embryo through the placenta during gestation.

Utmost mature cases witness minimum symptoms and the CMV infection leaves no consequences [1]. This case report attempts to raise attention to CMV risk among future mothers as well as doctors and nurses. Serious effects can be dodged by giving an antiviral medicine in an immediate form as long as the child is a newborn.
The asymptomatic course favors neglecting to make a diagnosis in infants. The threat of CMV infection during gestation can be averted through applicable hygiene measures. This includes among other downgrading exposure with babies' salver and urine. Precocious finding of CMV can help in avoiding everlasting outcomes [2].

Case Presentation

We present a case of congenital CMV treated in our intensive care unit.

The newborn was examined for acid-base hemostasis; TORCH test and blood cultures were made, microbiological examinations and hemoglobin analysis.

A CT scan of the brain, abdomen and chest was also ordered.

The results showed: hemoglobin 12.9 g/dL, erythrocytes $3.3 \cdot 10^{12}$, MCV of 111,4 fL and MCH of 34.1 pg (*Figures 1-4*).

The newborn had hepatosplenomegaly, icteric discoloration, hematomas and petechiae (*Images 1 and 2*).
It also showed a pH of 7.025 (*Figure 5*) as well as an AST result of 350 U/L, an ALT result of 127 U/L and a LDH result of 3079 U/L (*Figure 6*) on admission.
Figures 1-6 depict various laboratory results showing trends and patterns in the patient's parameters

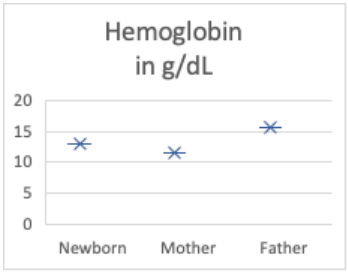

Figure 1.

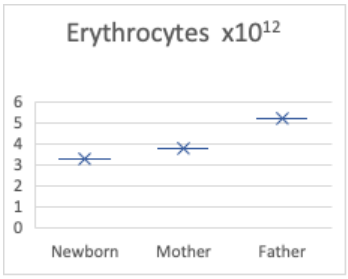

Figure 2

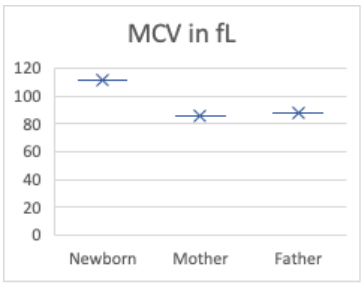

Figure 3

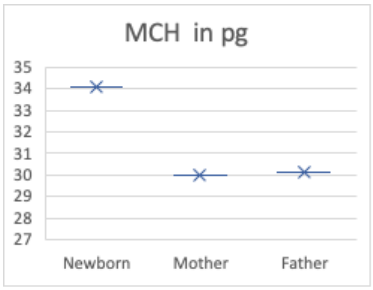

Figure 4

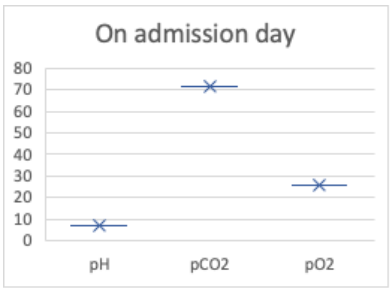

Figure 5

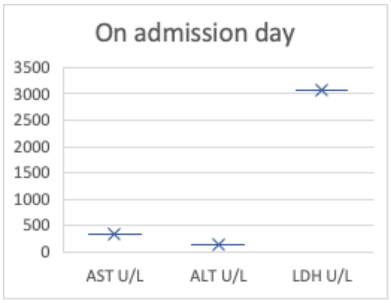

Figure 6

Image 1: Characteristic blueberry-muffin rash

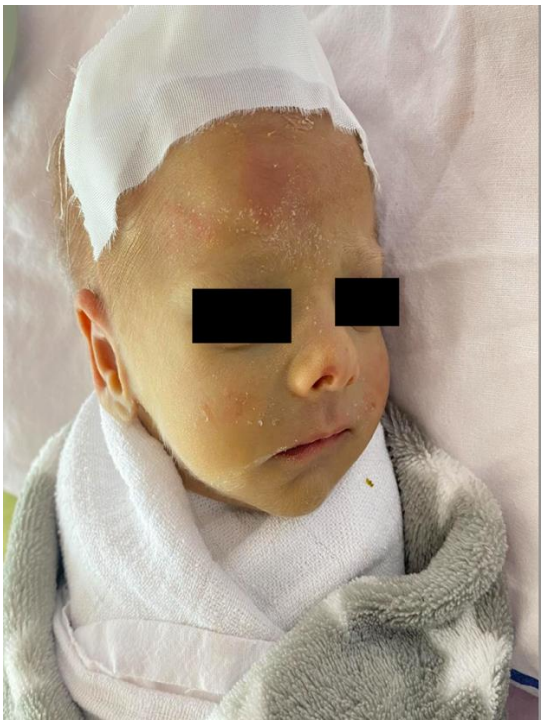

Image 2: Patient on day 21 post-therapy

Following respiratory failure, the newborn was immediately intubated. Results showed respiratory acidosis, leukocytosis, elevated liver transaminases, thrombocytopenia, and elevated direct bilirubin. A prolonged aPTT and a pos. TORCH test for CMV IgM and IgG were also noted (*Table 1*).

Table 1. Positive serological results indicate active infection

TORCH	EBV	CMV IgM	CMV IgG
Hrp.1 React.	positive	positive	positive
Hrp.2 React.	positive	positive	positive

Therapy with ganciclovir was initiated immediately.
In order to diagnose a CMV infection (congenital), a check should be done in the first two weeks of life so that a differentiation can be made between infections *in utero* and perinatal ones.
The most common test for CMV examination of newborns is the PCR saliva test. In newborns who have a congenital infection with CMV, viruses are present in the urine and saliva.
Symptomatic congenital CMV infection is treated with ganciclovir and valganciclovir.

Discussion

CMV infections are often undetected at birth because examinations of pregnant women and newborns have not yet become a routine.
If a pregnant woman exhibits symptoms such as fever, fatigue and swollen glands, one would have to assume a CMV infection. CMV DNA can be detected using PCR.
The fetus should be examined by ultrasound at 18 weeks for possible pathologies[3].
A CMV infection is confirmed if there is evidence of viruses in oral fluid, blood, and urine after birth. Even if viruses are found in the cerebrospinal fluid taken in the first four weeks, this strongly suggests a CMV infection.
Signs of congenital CMV include petechiae in approximately 80%, jaundice in 70%, hepatosplenomegaly in 63%, growth retardation in the uterus in 52% and microcephaly in approximately 50% of patients[4]. In addition, elevated AST levels, thrombocytopenia, and conjugated hyperbilirubinemia strongly suggest CMV infection.

Brain x-ray findings show calcifications in the cerebral ventricles in almost 72% of children with CMV infection[5].

Conclusion

CMV infections still represent the most common infection with serious consequences, both health and socio-economic. Diagnosing a CMV infection in a timely manner could be difficult because most newborns do not experience any symptoms or at least not disease-specific symptoms.

If infants have a non-specific skin condition, such as a rash, they should continue to be examined. The TORCH procedure is presented in our case report as a very important examination in the context of neonatal examinations. We recommend a clinical guideline for North Macedonia as well as a standardized test for CMV, which could lead to a timely diagnosis in order to avoid many long-term consequences.

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