Cytomegalovirus (CMV) TORCH

Cytomegalovirus is a DNA virus that can cause congenital TORCH infection. TORCH infections are infections that are acquired in utero or during the birthing process. Mothers who contract the disease are typically asymptomatic but can also present with a mononucleosis- like illness. Nonspecific signs common to many TORCH infections include hepatosplenomegaly, jaundice and thrombocytopenia. Common neonatal manifestations include deafness, intrauterine growth retardation, periventricular calcifications, seizures and petechial rash. Infants congenitally infected with CMV are chronically infected and excrete the virus in the urine for prolonged periods. Because the virus is excreted in the urine, congenital CMV infection can be diagnosed via urine culture.



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Signs and Symptoms

Nonspecific TORCH symptoms
Yellow Torch made of liver and trombone-peanut
Nonspecific signs common to many torch infections include hepatosplenomegaly, jaundice and thrombocytopenia.

Intrauterine Growth Restriction (Retardation)
Restrictive-belt on Uterus
Intrauterine growth retardation is defined as poor growth of a fetus while in the mother's womb during pregnancy. Intrauterine growth retardation is a common finding in infants with TORCH infections, including congenital CMV infection.

Deafness
Headphones
Sensorineural hearing loss is the most common sequelae following congenital CMV infection.

Microcephaly
Small-head
Microcephaly is a neurodevelopmental disorder in which the head circumference is more than two standard deviations smaller than the average circumference for the person's age and gender. It is a common clinical feature of cytomegalovirus.

Seizures
Caesar
A seizure is defined as a transient episode of abnormal, excessive neuronal activity. Seizures are common in infants with congenital CMV infection.

Periventricular Calcifications
Pear-vent Calcified-cow
Congenital CMV infection is associated with intracranial calcifications, especially in the periventricular regions. These calcifications occur due to necrosis in the periventricular area because CMV has a predilection for germinal matrix tissue.

Petechial Rash
Tiki-mask with Rash
Petechiae are small, red-purple discolorations on the body caused by broken capillary blood vessels. A petechial rash is a common finding in congenital CMV infection. The rash can also resemble a blueberry muffin rash, also seen in congenital rubella infection.

Blueberry Muffin Rash
Blueberry Muffin with Rash
The term "blueberry muffin rash" was initially used to describe generalized hemorrhagic purpuric cutaneous manifestations observed in infants with congenital cytomegalovirus infection. Classically, this rash presents with non-blanching, blue-red macules or dome- shaped papules, and is similar to the rash seen in congenital rubella.

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Chorioretinitis

Oreo-red-tin-eyes

Chorioretinitis is inflammation of the choroid and retina of the eye, causing symptoms of floating black spots, blurry vision and pain in the eye. Chorioretinitis is commonly seen in congenital cytomegalovirus, along with other TORCH infections.

Diagnosis

Urine Viral Culture or PCR

Urinal Virus Culture-dish or Polly-mirror with Chain Reacting

The diagnosis of congenital CMV infection at birth is usually via detection of the virus in urine within the first three weeks (21 days) of life, because infants shed large amounts of the virus in the urine. Follow-up testing after 21 days confirms the diagnosis. More rapid testing involves detection of the CMV virus in whole blood or plasma, via quantitative polymerase chain reaction (PCR) testing.

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