

Foresee Your Next Patient

Congenital Cytomegalovirus Infection Resulting in Sensorineural Hearing Loss and Nystagmus

Annabelle Alvarez, DO, MPH¹ • Israel D. Alvarez, MD² •
Syed A. A. Rizvi, PhD, MS, MBA³ • Zafar Qureshi, MD⁴ •
Rehana Alam, DO, DPM¹

A 10-month-old girl presented to her pediatrician with uncontrolled movements of the eyes and possible hearing problems. Her mother stated that the child did not react when a fire alarm had gone off at home, which led her to believe that the girl may have a hearing impairment.

History. The girl had been born at 35 weeks of gestation, and the birth had been complicated by premature rupture of membranes with no cervical dilation. The girl's mother reported no health problems during her pregnancy. The girl's birth weight was 2.27 kg, and she had stayed in hospital for 3 days after delivery.

At approximately 2 months of age, the parents noted the girl's eyes moving side to side extremely rapidly. They took her to a pediatric ophthalmologist, who diagnosed nystagmus and esotropia but did not pursue further testing at the time.

Physical examination. At the current presentation, the patient was found to have bilateral horizontal nystagmus (**Figure**), large



The patient had bilateral horizontal nystagmus.

bilateral ear tags, hearing deficit, developmental and speech delays, and short stature.

Diagnostic tests. The patient was tested for TORCH infections—toxoplasmosis, other (syphilis, varicella-zoster virus, parvovirus B19), rubella, cytomegalovirus (CMV), and herpes simplex virus—along with basic laboratory examinations (complete blood cell count, urinalysis, comprehensive metabolic panel, lead levels, and lipid levels). The TORCH panel results returned positive for CMV infection. The patient was referred to a neurologist, an ophthalmologist, and an otolaryngologist.

Magnetic resonance imaging of the brain without contrast at 11 months of age showed no structural brain anomalies, with small porencephalic cysts in the dorsal striatum on the left and a tiny Rathke cleft cyst.

At 13 months of age, her hearing was reevaluated by an otolaryngologist and her vision by ophthalmologist. At that time, the patient was diagnosed with bilateral severe sensorial hearing loss, sensorial nystagmus, esotropia, and cortical visual impairment. She was given prescription glasses to facilitate amblyopia treatment.

Discussion. Nystagmus is the condition in which the eye moves slowly (drift) followed by a fast (jerk) movement, involuntarily from side to side (horizontal nystagmus), up and down

AFFILIATIONS:

¹Dr. Kiran C. Patel College of Osteopathic Medicine, Nova Southeastern University, Fort Lauderdale, Florida

²Alvis Pediatrics, Hialeah, Florida

³Hampton University School of Pharmacy, Hampton, Virginia

⁴UHI CommunityCare Clinic, Miami, Florida

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CORRESPONDENCE:

Syed A. A. Rizvi, PhD, MS, MBA, Department of Pharmaceutical Sciences, Hampton University School of Pharmacy, 100 E Queen St, Hampton, VA 23669 (syed.rizvi@hamptonu.edu)

(vertical nystagmus), or in a circle (rotary nystagmus).¹ Infantile nystagmus or congenital nystagmus is challenging to evaluate, since it could be a diagnosis in itself or a clinical symptom; in both cases, thorough evaluation and proper differential diagnosis are warranted.² Its prevalence has been reported in the range of 1 in 1000 to 1 in 6000.³

CMV is the among the most common congenital viral infections and is the most common infectious cause of congenital malformations.⁴ Congenital CMV infections have caused ocular and visual abnormalities, including chorioretinitis, cortical visual impairment, and optic atrophy due to viral-mediated damage of the hair cells.^{5,6} Most pregnant women with CMV infection do not show any symptoms or report having nonspecific illnesses during pregnancy. However, higher serum levels of alanine transaminase and aspartate transaminase may indicate the onset of CMV infection.⁷

This case highlights the importance of educating women about CMV infection prevention, screening for CMV infection before and during pregnancy, and proper treatment to minimize any resulting abnormalities.^{8,9} ■

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