Autism in a Child with Congenital Cytomegalovirus Infection

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A case is reported of early infantile autism associated with a congenital cytomegalovirus infection. The diagnosis of autism is based on the child's failure to develop good interpersonal relationships, poor eye contact, delayed and deviant use of language, and her rote and nonthematic use of objects and playthings. Resistance to change and self-stimulatory behavior were also present. Onset was before 2 years of age. Congenital cytomegalovirus infection was suggested by the presence of an antibody response to the virus, culture of the virus from the urine, sensorineural hearing loss, and inflammatory damage to the retina of the eye. Although over time improvement was noted, at last examination at the age of 5 years her behavior is still markedly deviant. This and other reported cases suggest that congenital viral infection may be an important cause of infantile autism. It is hypothesized that an ability of the agent to establish chronic infection may predispose to behavioral aberration.

INTRODUCTION

It is now clear that early infantile autism is an organic brain syndrome of childhood manifesting a spectrum of developmental disability. It is equally clear that it is a disorder with diverse etiologies and that in the vast majority of cases a precise etiologic diagnosis cannot be made. Genetic predisposition, perinatal asphyxia or trauma, and metabolic disturbance have all been invoked as possible causal agents, and there is evidence that at times

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each may play a role. Congenital infection is a known predisposing agent, and Chess has demonstrated the manifold increase in incidence of autism in children with congenital rubella syndrome (Chess, 1971). Rubella, though, is only one of a number of infectious agents that can prenatally infect the fetus and result in severe central nervous system insult. Toxoplasmosis, syphilis, cytomegalovirus, and herpes simplex are other relatively common prenatal infections. To date only one of these—cytomegalovirus, and in only one case report—has been described in association with a case of infantile autism (Stubbs, 1978). The purpose of this case presentation is to report a second case of this association, suggesting that the relationship is more than coincidental.

**CASE REPORT**

The child was the 5-pound 11-ounce product of a reportedly normal pregnancy complicated by the absence of prenatal care but without known illness or teratogenic exposure. Labor and delivery were normal, as was the neonatal period. Her mother first suspected a problem at age 5 months because of choking and gagging with feeding and the child’s failure to interact actively with her environment. At 9 months of age she was evaluated for developmental delay. She demonstrated hypotonia and absent responses to sound but good visual following on neurological examination. Other positive findings included chorioretinitis of the right eye, a positive urine culture for CMV (cytomegalovirus), elevated CMV titers in both mother and child (Child: CF 1:128, IHA 1:2048; Mother: CF 1:64, IHA 1:2048), but normal skull X rays, spinal tap, EEG, and CT scan of the brain. Audiometrics revealed a hearing loss on the right but was equivocal on the left. A psychological evaluation was not obtained. The presumptive diagnosis was developmental delay secondary to congenital cytomegalovirus infection.

At 11 months of age she was hospitalized for extensive second- and third-degree burns secondary to child abuse. It is not known whether previous abusive episodes had occurred, and little information is available regarding parent-child interaction at that time. She required a 2-month hospitalization and was then placed in foster care, where she remained in only two foster homes until she was adopted at the age of 3 years 9 months. Both foster homes were of good quality. During this time the child attended an infant stimulation program for handicapped children. Behavioral abnormalities noted by her caretakers included absence of eye contact, self-stimulatory behavior, oral exploration of objects, resistance to change, social aloofness, and indifference to praise, with a large amount of independent and oppositional behavior. Initially she would stiffen when picked