

Commentary

The report describes a patient with hypertensive hydrocephalus caused by the H2N3 virus, which is an extremely rare condition.^[1] Identification of influenza virus type A in cerebrospinal fluid using polymerase chain reaction method confirmed central nervous system (CNS) involvement. Cerebrospinal fluid biochemistry excluded the presence of meningitis or encephalitis. There was also no associated aqueduct stenosis. The surgically treated coincidental vestibular schwannoma has not been shown to be associated with the hydrocephalus or the neurological symptoms described.

Several pathological observations of viral infections of the CNS resulting in hydrocephalus, such as perivascular inflammatory response, subependymal gliosis and neovascularization, necrosis of ependymal cells and aqueductal stenosis have been described in experimental animals. These findings were associated with viral replication.^[2] Viruses that have been reported to produce hydrocephalus include parainfluenza type 1^[2] and 2,^[3] mumps,^[4] influenza A,^[5] type 12 adenovirus,^[6] reovirus type 1,^[7] and polyomavirus.^[8] Mims have analyzed the intracerebral toxicity for mice of standard and neuroadapted strains of influenza A virus. He described the destruction of the ependymal lining of the ventricles, and a severe inflammatory response originating in the ventricles, but also affecting the ependymal cells covering the choroid plexuses, which eventually produces the frankly hydrocephalic condition seen in mice dying after 6–7 days.^[5] Subsequent to the animal studies a number of children have been reported with hydrocephalus and aqueductal stenosis 5 weeks to 4 years after mumps virus infection.^[9]

Although this report is only the second case described of H3N2 type A influenza virus-related hydrocephalus, clinicians should be aware that influenza virus is a potential cause of brain damage and hydrocephalus. Neuroimaging should be performed early in the presence of signs and symptoms of intracranial hypertension.

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