



Pathology/Biology Section - 2015

H156 Obstruction of Aqueduct of Sylvius Following Spontaneous Intra-Ventricular Hemorrhage and Meningitis in a Premature Infant Leading to Hydrocephalus and Cystic Cerebellar Degeneration With Polymicrogyria: A Case Study With a Review of Literature

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After attending this presentation, attendees will better understand the etiology, pathological findings, genetic associations, clinical features, and forensic presentations of blockage of the aqueduct of Sylvius.

This presentation will impact the forensic science community by raising awareness regarding distant complications and the long-term outcomes of spontaneous intra-ventricular hemorrhage and blockage of the aqueduct of Sylvius.

The aqueduct of Sylvius is the narrowest part of the ventricular system and its obstruction leads to hydrocephalus (dilatation of the lateral ventricles of brain). Obstruction of the aqueduct is usually associated with sporadic stenosis, atresia associated with Arnold-Chiari malformation, gliosis following infection or hemorrhage, vascular malformation, or X-linked hydrocephalus spectrum. A review of the literature led to rare case reports of gliosis related to various infectious etiologies including mumps, toxoplasmosis, tuberculosis, parasitic granuloma, and aspergillus.

A case is reported of a premature eight-month-old girl who developed hydrocephalus and cystic cerebellar degeneration due to obstruction of the aqueduct of Sylvius following the development of spontaneous intra-ventricular hemorrhage and meningitis. The infant was born at 24-weeks gestation by spontaneous vaginal delivery and was 860 grams at the time of delivery. The pregnancy was complicated by chorioamnionitis. The early clinical course of the infant was significant for *Streptococcus agalactiae* and *Escherichia coli* sepsis, meningitis, and Grade III intra-ventricular hemorrhage with placement of an intra-ventricular shunt. Her family at home cared for her and she required tube feeds for nutrition. Early one morning, her mother checked on her and found her apneic. She was pronounced dead on arrival at the hospital. An autopsy revealed no external or internal evidence of injury. There was bilateral acute pneumonia. The brain weight was 387 grams (normal adjusted brain weight=516 grams). The cerebral cortex appeared atrophic and the cerebral hemispheres showed polymicrogyria. On cut surface, there was yellow discoloration of the periventricular white matter. There was obstruction of the aqueduct of Sylvius with dilation of the lateral and third ventricles and cystic degeneration of the cerebellum. Microscopic examination revealed gliosis and hemosiderin-laden macrophages within the periventricular white matter and adjacent to the aqueduct of Sylvius. The cause of death was certified as pneumonia and hydrocephalus as complications of prematurity.

Aqueduct of Sylvius, Blockage, Hydrocephalus