Is it possible to live without cerebellum?

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Cerebellum is a part of the brain responsible for motor control and some cognitive functions. Cerebellar agenesis is a complete absence of the cerebellum. The aim of my research was to find out something more about clinical presentation of patients with cerebellar agenesis. The methods I used involved reading published papers, so I report four cases diagnosed as cerebellar agenesis.

First case report is a 7-year-old girl unable to walk. Her motor development was slow. Her IQ was just under the normal levels, her reading and speaking was not clear and handwriting was not good. Neurological exam showed ataxic walking, dysmetria, dysdiadochokinesia, medial strabismus and briefly increased deep tendon reflex. MRI revealed complete cerebellar agenesis and posterior fossa full with cerebrospinal fluid (CSF).

Second case report is a 24-year-old primagravida. She is in a consanguineous marriage. Ultrasound examination showed absence of cerebellar structures with ptosis of both occipital lobes occupying the anatomical space of the posterior fossa.

Third case report is a 17-year-old boy with history of neonatal hypotonia. He was first observed at the age of 4 because of persistent ataxia. MRI showed absence of cerebellar tissue and empty cerebellar space filled with CSF. His current neurological status shows moderate ataxia, mild dysmetria and mild mental retardation.

Fourth case report is a 24-year-old woman with unexplained vomiting and nausea. She has been experiencing dizziness and walking difficulties. Her motor development was slow. She had unintelligible speech until she was six years old.

In conclusion, clinical presentation of patients with cerebellar agenesis varies. The most common symptoms are walking difficulties, problems with balance, speech difficulties, nausea and dizziness. In some cases, even though they are rare, a person can normally live without cerebellum. Doctors believe that in these cases other parts of brain take over functions of missing cerebellum.

Keywords: cerebellum, cerebellar agenesis, motor development, ataxia, dysmetria

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