

## Definitions

**cerebellar tonsils** - portion of the cerebellum located at the bottom, so named because of their shape

**cerebellum** - part of the brain located at the bottom of the skull, near the opening to the spinal area; important for muscle control, movement, and balance

**cerebrospinal fluid (CSF)** - clear liquid which surrounds, and protects, the brain and spinal cord

**Chiari malformation** - condition where the cerebellar tonsils are displaced out of the skull area into the spinal area, causing compression of brain tissue and disruption of CSF flow

**magnetic resonance imaging (MRI)** - diagnostic test which uses a large magnet to create images of internal body parts

**psychosis** - a general term for a state of mind in which thinking becomes irrational and disturbed; can be characterized by hallucinations and delusions

## Chiari Causes Psychotic Episode

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**Introduction:** Although it has not been researched extensively, most experts believe that Chiari can cause neuropsychological problems, such as depression and trouble with memory and thinking. In addition, one study found that Chiari patients showed abnormal EEG brain activity, even with mild symptoms.

**Patient 1:** 30 year old woman who suffered from 4 acute, psychotic episodes in the previous three years. The episodes were accompanied by altered consciousness, confusion, disorientation, agitation and insomnia and each episode occurred either during her premenstrual or menstrual period and included epileptic type events. She also showed signs of cranial nerve involvement and reported ringing in the ears. There was no history of infection or head injury which could explain the psychotic episodes and repeated drug and alcohol tests were negative. An EEG showed some irregular brain activity and an MRI finally showed a Chiari malformation. The doctors chose to treat the woman with a number of drugs to control her psychotic behavior and epileptic episodes. They also prescribed diuretics and had her restrict her water and salt intake (it appeared that she was only symptomatic due to swelling from water retention). The woman recovered from her episodes after a few days each time and did not remember them.

**Authors' Discussion:** The authors stress that Chiari can neuropsychological symptoms that vary from person to person and can be intermittent in nature.

**Editor's Discussion:** This case highlights yet again how varied the symptoms of Chiari can be and is, hopefully, an extreme example of the neuropsychological effects that can accompany the compression and CSF disruption. Understanding the neuropsychological impact of Chiari, both cognitive and emotional is critical to improving the experiences and outcomes of patients.

--Rick Labuda

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