

## 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

**hydrocephalus** - an abnormal accumulation of CSF in the skull/brain

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

**posterior fossa** - depression on the inside of the back of the skull, near the base, where the cerebellum is normally situated

## Effects Of Minor Head Trauma

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### Incidental Finding Of Chiari I Malformation With Progression Of Symptoms After Head Trauma

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**Introduction:** The role of trauma in either sparking or aggravating Chiari symptoms is not clear. Anecdotally, many people report symptoms after some type of trauma, even of a minor nature. However, the mechanism by which trauma may spark or aggravate symptoms is not clear and it may be that a trauma makes people aware of symptoms that were already there.

**Patient:** 36-year old woman with a history of headaches got into a car accident. She was the driver - wearing a seatbelt - when she was hit on the driver's side. She lost consciousness briefly and could not recall what had happened. She was taken to an ER, where her vital signs were normal, but she had a headache and hand pain. Her hand was fractured and a CT revealed hydrocephalus. A neurological exam showed abnormal reflexes. MRI showed a 20mm Chiari with no syrinx. Her headache continued to worsen and she vomited several times. She was given medicine for the headache/vomiting and referred to a neurologist and neurosurgeon. Six weeks after the accident, she had a shunt put in to drain the extra CSF in her skull.

**Author's Discussion:** The authors point out that while the role of minor head trauma as it relates to Chiari is not well understood, there are a number of case reports in the literature describing rapid onset/worsening of symptoms after trauma, and even sudden death. Although the evidence is not strong, the authors recommend that Chiari patients who become symptomatic or experience a progression of symptoms should be monitored carefully for a couple of days to make sure there are no complications, especially regarding their breathing or their heart.

**Editor's Discussion:** The role of trauma, for all types of Chiari patients, needs to be investigated further. Does trauma cause Chiari, in the sense that someone who was asymptomatic can become symptomatic? Can it actually cause a herniation to become larger? Can it make symptoms worse over a long-term? If someone is adequately decompressed, is minor head trauma still an issue of concern? Since many of the traumas related to Chiari involve car and work accidents, there are also legal issues to consider, in term of liability. Conquer Chiari is contacted on a regular basis by plaintiffs, defendants, and lawyers when it comes to these types of cases, but with the research lacking, it is a difficult question to address.

--Rick Labuda

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