

## Definitions

**cerebrospinal fluid (CSF)** - clear liquid surrounding the brain and spinal cord, acts as a shock absorber

**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

**cervical** - the upper part of the spine; the neck area

**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

**foramen magnum** - arge opening at the base of the skull, through which the spinal cord passes and joins with the brain

**hypertension** - high blood pressure

**posterior fossa** - arge opening at the base of the skull, through which the spinal cord passes and joins with the brain

**syringomyelia (SM)** - neurological condition where a fluid filled cyst forms in the spinal cord

**syrinx** - fluid filled cyst in the spinal cord

**tumor** - an abnormal mass or lump of tissue

## Tumor Causes Chiari And A Syrxinx

Case Studies is a feature designed to highlight interesting patient cases reported in the research. Given the lack of knowledge about CM/SM, much of the published research comes in the form of case studies - doctors describing one or two patients they have seen and treated - as opposed to rigorous scientific studies. While this type of publication doesn't advance the scientific cause as much, it does give us a window into some of the issues surrounding CM/SM, including lasting side effects and related conditions. And hopefully, some of our readers will say, "Hey, that's just like me!" and know they are not alone in what they are going through.

### CASE 1: Tonsillar Herniation And Syringomyelia Secondary To Posterior Fossa Tumor

**Reported In:** British Journal of Neurosurgery, February 2004

**Doctor:** Bhatoe, Dept. of Neurosurgery, Army Hospital, Delhi Cantt, India

**Patient:**

- 36 year old woman
- Headaches for 6 months, vomiting, trouble walking
- Exam showed signs of elevated intracranial pressure, hypertension, and cerebellar compression
- MRI revealed a posterior fossa tumor, with herniated cerebellar tonsils and a cervical syrinx
- Tumor was surgically removed
- MRI 3 months later showed the cerebellar tonsils had returned to their normal position and shape and the syrinx had resolved

#### **Observations:**

- CM/SM due to a posterior fossa tumor is rare, but has been seen before
- The tumor occupies space in the posterior fossa and forces the natural contents out of the skull
- The cerebellar tonsils then block the normal CSF flow and a syrinx forms
- Removing the source of the problem quickly can reverse the herniation and the syrinx.

**Ed Note:** *For many years, Chiari was thought to be only a congenital malformation - meaning you are born with it. Unfortunately, some doctors still believe this is the case and give patients outdated information. This case is but one of many examples of acquired Chiari, many of which have been reversible upon fixing the underlying problem. This case also lends indirect support to the idea that most Chiari cases are due to a small posterior fossa. If a tumor essentially reduces the size of the posterior fossa, a malformation results.*