Chiari Malformation

National Institute of Neurological Disorders and Stroke (NINDS)

Source

National Institute of Neurological Disorders and Stroke (NINDS). Chiari Malformation Information Page.

Chiari malformations (CMs) are structural defects in the base of the skull and the cerebellum, the part of the brain that controls balance. When part of the cerebellum extends through the opening at the base of the skull, the cerebellum and brain stem can be pushed downward. The resulting pressure on the cerebellum can block the flow of cerebrospinal fluid (CSF, the liquid that surrounds and protects the brain and spinal cord) and can cause a range of symptoms including dizziness, muscle weakness, numbness, headache, and problems with hearing, balance, and coordination. Symptoms may change for some individuals depending on buildup of CSF and any resulting pressure on tissue and nerves. CMs are classified by the severity of the disorder and the parts of the brain that protrude into the spinal canal. The most common is Type I, which may not cause symptoms and is often found by accident during an examination for another condition. Type II (also called classic CM and Arnold-Chiari malformation) is usually accompanied by a myelomeningocele--a form of spina bifida that occurs when the spinal canal and backbone do not close before birth, causing the spinal cord to protrude through an opening in the back. This can cause partial or complete paralysis below the spinal opening. Symptoms of Type III--the most serious form of CM--include those seen in Type II, in addition to additional severe neurological defects. In CM Type IV, parts of the cerebellum are missing, and portions of the spinal cord may be visible. Other conditions sometimes associated with CM include hydrocephalus, syringomyelia (a fluid-filled cyst in the spinal cord), and spinal curvature.