Fact Sheet

HYDROCEPHALUS AFTER HEMISPHERECTOMY

Hydrocephalus occurs in approximately 23% of patients after hemispherectomy. 20% of patients develop hydrocephalus after functional hemispherectomy and 30% after anatomical hemispherectomy. Hydrocephalus can develop ten or more years after surgery and shunts often fail. Parents and the entire educational team should be aware of the signs of hydrocephalus and shunt failure even if surgery occurred several years ago.

What Is Hydrocephalus?

Hydrocephalus is the abnormal accumulation of cerebrospinal fluid (CSF) within cavities called ventricles inside the brain or in the space left behind after brain matter is removed (the resection cavity). It occurs when there is an imbalance between the amount of CSF that is produced and the rate at which it is absorbed. As the CSF builds up, it causes the ventricles and/or resection cavity to enlarge and pressure inside the head to increase. Hydrocephalus is a lifelong condition, for which there is no cure.

Is It Dangerous?

Pressure on the brain can result in short- or long-term effects, including impaired vision, headaches, hearing loss, muscle weakness, seizure disorders and hormonal imbalances. Untreated hydrocephalus poses permanent risks risks to both cognitive and physical development. Left untreated, progressive hydrocephalus can be fatal.

What Are The Signs Of Hydrocephalus?

In a recent, large-scale study, signs of hydrocephalus included:

Headache (44%)
Vomiting (46%)
Diminished level of consciousness (43%)
Imaging (CT scan/MRI) changes (80%)
Cognitive decline (16%)
Behavioral changes (16%)

What Is The Treatment For Hydrocephalus?

The most common treatment for hydrocephalus is a surgical procedure in which a tube called a shunt is placed into the child's body. The shunt channels the flow of fluid away from the brain or spinal cord into another part of the body, where the fluid can be absorbed and transported to the bloodstream. This reduces pressure on the brain, which could, if left untreated, result in permanent brain damage or death.

Shunts are extremely durable, and rarely fail or malfunction due to external causes such as falls or bumps. Almost all children with hydrocephalus can and should participate fully in all school activities, including physical education and most sports, with clearance from their neurosurgeon.

How Long Do Shunts Last?

Shunt systems require monitoring and regular medical follow up. When complications occur, subsequent surgery to replace the failed part or the entire shunt system may be needed. In fact, most people who have shunts will require shunt revision at some point in their lives. Shunt systems have a very high failure rate. Approximately 50% of shunts fail in the first year, and most need to be replaced after ten years.

When there is reason to suspect that a shunt system is not functioning properly (for example, if the symptoms of hydrocephalus return), medical attention should be sought immediately. Generally, it is obvious when a shunt malfunctions. Signs of an overt failure would include recurring, intensifying headache and/or irritability, lethargy, nausea and/or vomiting with loss of appetite, and loss of the ability to look upwards. Subtle symptoms can also suggest a problem with the shunt. These would include an unexplained decline in school performance, pain or redness along the shunt tract, behavioral changes, or fever of an unexplained origin.

References:

Children's Hospital at Montefiore website. Long term care of shunts. http://www.cham.org/services/neurosurgery/neurologicaldisorders/child_hydro/treat/shunt/long_term_care/. Accessed May 4, 2015.

Hydrocephalus Association. A teacher's guide to hydrocephalus. http://www.hydroassoc.org/docs/A_Teachers_Guide_to_Hydrocephalus.pdf. Published August 2002. Accessed May 4, 2015.

Hydro Kids website. Signs that you may need a shunt replacement. http://www.hydro-kids.com/signs. Accessed May 4, 2015.

Johns Hopkins Medicine Neurology and Neurosurgery website. Shunt Procedure. http://www.hopkinsmedicine.org/neurology_neurosurgery/centers_clinics/hydrocephalus/procedures/shunts.html. Accessed May 4, 2015.

Lew S, Matthews A, Hartman A, Haranhalli N. Post-hemispherectomy hydrocephalus: results of a comprehensive, multi-institutional review. Epilepsia. 2013 Feb; 54(2): 383–389.

National Institute of Neurological Disorders and Stroke website. Hydrocephalus Fact Sheet. http://www.ninds.nih.gov/disorders/hydrocephalus/detail_hydrocephalus.htm. Accessed May 4, 2015.

Pople I. Hydrocephalus and shunts: what the neurologist should know. J Neurol Neurosurg Psychiatry 2002;73:i17-i22.

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