Hydrocephalus – Causes, Symptoms and Treatment

Hydrocephalus is a condition in which there is too much CSF in the ventricles. This occurs when the natural system for draining and absorbing extra CSF does not work right. The ventricles enlarge to accommodate the extra fluid and then press on different parts of the brain, causing a number of different symptoms. Hydrocephalus has many different causes. Some people are born with the condition, while others develop it during their lives.

Causes

Possible etiologic factors include head injury, subarachnoid hemorrhage, meningitis, and CNS tumor. Although each of these conditions may cause hydrocephalus, how they are related to subsequent NPH is unclear.

Hydrocephalus is usually the result of a brain infection or a malformation in the fetus prior to birth. Although the baby's head may not appear abnormally large at birth, it expands rapidly from month to month. If untreated, the baby usually dies by the end of the second year. If the blockage of CSF is only partial, the child may live for a number of years or may even live a normal life span.

Hydrocephalus is due to a problem with the flow of cerebrospinal fluid (CSF), the liquid that surrounds the brain and spinal cord.CSF moves through pathways of the brain called ventricles. It also flows around the outside of the brain and through the spinal canal. Higher-than-normal amounts of CSF can occur in the brain if the flow or absorption of CSF is blocked, or if too much CSF is produced. The build up of fluid puts pressure on the brain, pushing the brain up against the skull and damaging or destroying brain tissues.

Symptoms

Symptoms of hydrocephalus recur after successful ventriculoperitoneal (V-P) shunt placement, shunt malfunction should be suspected and evaluation for mechanical failure pursued. Catheter migration should be recognized as a correctable cause of shunt malfunction.

Hydrocephalus symptoms vary with age, disease progression, and a person's tolerance to cerebrospinal fluid (CSF). For example, an infant's ability to tolerate CSF pressure differs from an adult's. The infant skull can expand to accommodate the buildup of CSF because the sutures (the fibrous joints that connect the bones of the skull) have not yet closed.

A large head that may get bigger very quickly. Usually a baby with congenital hydrocephalus will have a noticeably bigger head than other babies the same age. A slightly bulging soft spot (fontanelle) on top of the head that doesn't go away when the baby is held upright. A baby may also have larger-than-normal areas between the skull bones.

Treatment

Surgical correction is the only treatment for hydrocephalus. Usually, such surgery consists of insertion of a ventriculoperitoneal shunt, which transports excess fluid from the lateral ventricle into the peritoneal cavity. A less common procedure is insertion of a ventriculoatrial shunt, which drains fluid from the brain's lateral ventricle into the right atrium of the heart, where the fluid makes its way into the venous circulation. Periodic lengthening of the shunt is necessary to accommodate growth in children. A clogged malfunctioning shunt will have to be replaced.

Hydrocephalus can pose risks to both mental and physical development. Many children diagnosed with the disorder benefit from rehabilitation and educational programs, and go on to lead normal lives. Don't be afraid to ask your doctors, nurses or therapists about the treatments your child will receive. If treatment includes medication, be sure your child takes it exactly as your doctor has ordered. And remember to bring your child to all follow-up appointments requested by our doctors or other medical staff.

About the Author