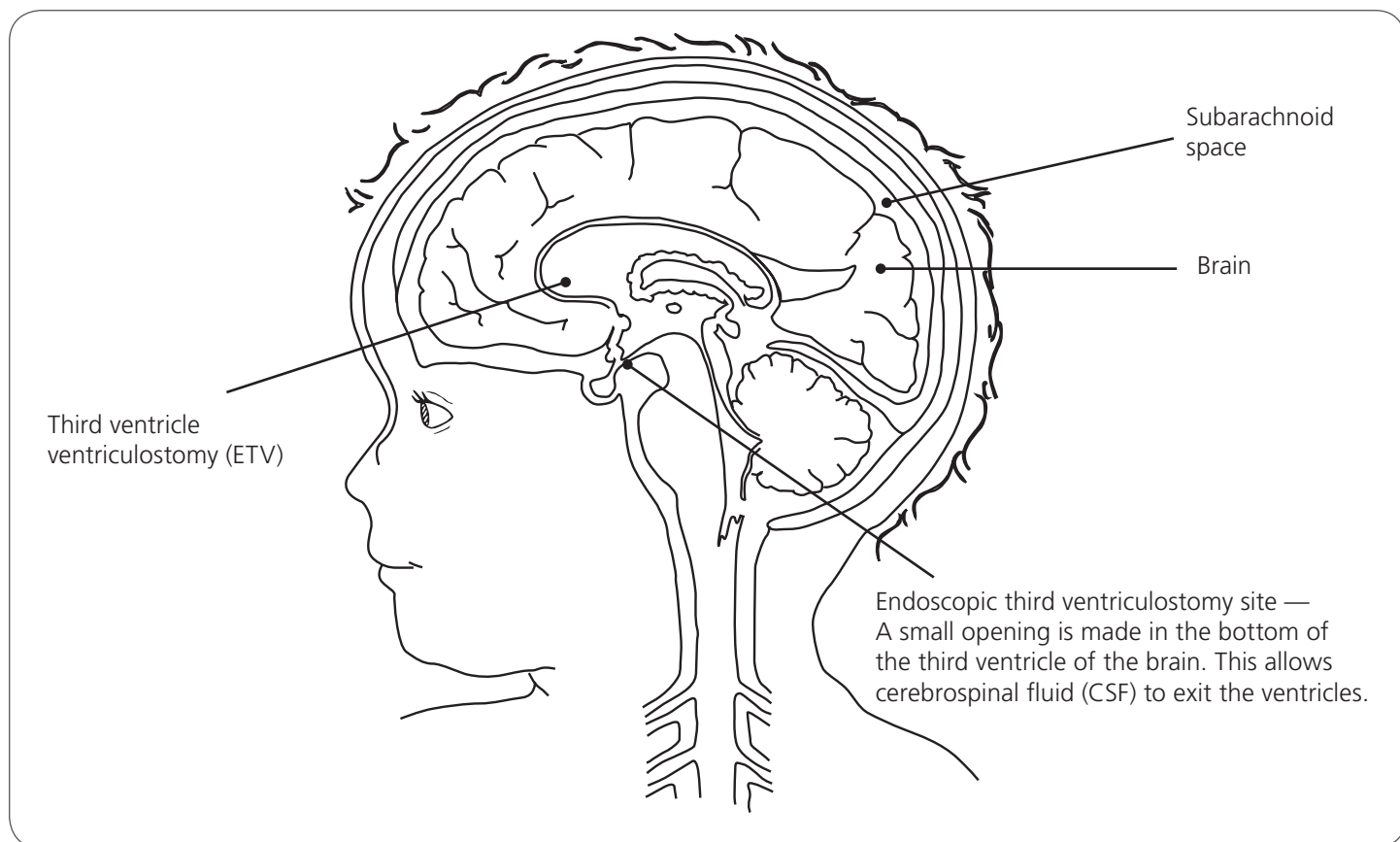


Let's Talk About...

Endoscopic Third Ventriculostomy (ETV)



What is an endoscopic third ventriculostomy?

Normally, a fluid called cerebrospinal (ser-EEbrow-SPINE-all) fluid (or CSF) passes around the brain. If the fluid pathway is blocked, there needs to be some way for the fluid to get out. Endoscopic third ventriculostomy (ETV) is a procedure to help. The neurosurgeon makes a small hole in the bottom, or “floor” of the third ventricle. The third ventricle is a chamber inside the brain. This hole lets the cerebrospinal fluid (CSF) flow out of the blocked ventricle and into an area around the brain called the subarachnoid space (see the picture). The fluid can then move normally and is absorbed into the blood stream.

During ETV the surgeon passes a tiny, flexible camera (about $\frac{1}{4}$ inch wide) through a small hole in the skull (a “burr hole”) into the ventricle. The camera lets the neurosurgeon see pictures of the ventricle on a television monitor. Then the surgeon can see the area to make the opening. If the child has a shunt (a flexible tube in the child’s CSF system), the surgeon may use the path used by the shunt.

Why does my child need an ETV?

An ETV is a treatment for hydrocephalus (highdrow-SEFF-ah-luss). Hydrocephalus is when there is too much fluid in the brain because the fluid is blocked. When the fluid is blocked, the pressure can build up. An ETV lets the CSF bypass the blockage and reduces the pressure in the brain.

The ETV keeps the pressure in the brain normal without a permanent shunt. Usually, this is a onetime procedure. Occasionally patients need more than one procedure due to closure of the ETV. After 6 months the risk of the ETV closing is very low.

What happens after surgery?

Your child may go to the pediatric intensive care unit (PICU) after surgery where she will be watched very closely by nurses and monitors, but most often will be admitted to the Neuroscience Trauma Unit.

Your child may have an external ventricular drain (EVD) after surgery. This is temporary and is removed at the bedside. If there is pressure in the brain after surgery, the EVD can be opened to relieve the pressure. Once your child shows no signs of increased pressure in the brain, the EVD will be removed. Your child may be observed for 24 hours after the removal of the EVD. Your child may have an MRI or CT scan to check the size of the ventricle in the brain after the procedure.

Are there any possible complications after surgery?

Your child will receive every safety measure during surgery. There are still some possible complications.

These include:

- **Bleeding:** There can be bleeding when the surgeon makes a hole in the ventricle floor if there is damage to the wall of the ventricle, or damage to the arteries. Other problems that may result from bleeding are problems with body temperature, sleep, and appetite. Extensive bleeding, from injury to blood vessels, can lead to death, but is extremely rare.
- **Short-term memory loss:** Areas that control memory may be damaged, which may lead to short-term memory loss. This is usually temporary.

- **Hormonal functions:** The area in the third ventricle where the surgeon makes the hole is responsible for hormonal function. For this reason, there is a chance of diabetes insipidus (DI). This is different than sugar diabetes. DI is a problem with fluid control in the body. This is usually temporary.
- **Reoccurrence:** After ETV surgery, your child may develop increased intracranial pressure later. Remember, an ETV treats hydrocephalus, but does not cure it. Your child still has hydrocephalus even though she does not have a shunt anymore. The hole made by the doctor can close up again. If the hole closes, increased pressure will come back.

How do I know if the ETV hole has closed up?

Watch your child for signs that the ETV hole has closed up. This will be like a shunt malfunction. Signs may include having a headache, vomiting, being irritable, being sleepy, vision problems, and losing coordination or balance. Infants may have a swollen, raised soft spot. They may be fussy, irritable, have a high-pitched cry, and have feeding problems.

If your child has the above symptoms or if you have concerns, call your doctor or go to the nearest emergency room. You can get a medic alert card for your child for prompt medical attention in case of an emergency. Call the Hydrocephalus Association at 415.732.7040 for a free card.

What do I do if I have questions or concerns?

If you have questions about this information, talk with your nurse, the nurse practitioner, or neurosurgeon involved in your child's care. Once you go home, you can call the phone numbers listed on your child's discharge instructions. For general health concerns, please follow-up with your child's pediatrician or primary care provider.