Endoscopic third ventriculostomy (ETV)

Hydrocephalus

Cerebrospinal fluid

Cerebrospinal fluid (CSF) is a clear, watery fluid that the body is always making in the spaces of the brain called the ventricles.

- CSF flows out of the ventricles and circulates around the brain and spinal cord.
- The blood vessels of the brain reabsorbs CSF into the bloodstream.

Functions of CSF

- CSF acts as a cushion to protect the brain and spinal cord from injury.
- CSF delivers nutrients to the brain.
- CSF removes waste products from the brain tissues.

Hydrocephalus

If CSF cannot flow normally, fluid builds up inside the ventricles. This causes the ventricles to enlarge and increases the pressure inside the brain. We call this hydrocephalus. There are 2 types of hydrocephalus.

Obstructive hydrocephalus

Something is blocking the usual flow of CSF.

Absorptive hydrocephalus

The brain cannot re-absorb the CSF that it is making.

Without treatment, the ventricles will get too large. This puts pressure on the delicate brain tissue. Pressure can damage brain tissue and cause serious health problems, including death

Endoscopic third ventriculostomy

Endoscope

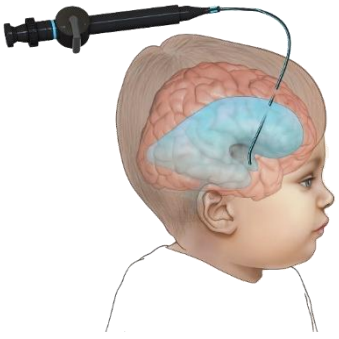
A thin tube called a scope. We use the scope perform the ETV.

Third Ventricle

The space in the brain that stores CSF. It is now blocking the CSF from flowing out.

Ventriculostomy

The opening that we make in the floor of the third ventricle. This allows CSF to flow out of the blocked 3rd ventricle and into the area below the base of the brain. CSF then flows up and over the brain where it reabsorbs into the bloodstream.



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Endoscope in the third ventricle

Goal of surgery

To keep the CSF volume balanced in the ventricles. The amount of CSF flowing out of the ventricles will be equal to the amount of CSF made in the ventricles.

With an ETV procedure, the change in the ventricular size is slow and takes time to see on imaging.

ETV surgery

The most common site of CSF blockage is the narrow path between the third and fourth ventricles of the brain.

We make an opening in the bottom or "floor" of the third ventricle.

Post-operative care after an ETV

We will closely monitor your child.

Incision and dressing

There will be a small incision on your child's head. The stitches will dissolve. We do not need to remove them.

Pain medicine

Your child may have some discomfort for the first few days after surgery. The neurosurgery team will order pain medicine as needed.

Activity

Your child can return to normal activity when the team tells you it is okay. This is usually at your 1 month follow-up appointment.

Do not allow your child to exercise, play sports, or rough play until your team approves.

Shower or bath

Your child may shower or wash over incision sites 48 hours after surgery.

- You may wash your child's hair with soap and water 48 hours after surgery.
- Do not let incisions get under water until your doctor approves.

Follow-up appointments

We will schedule all follow-up appointments before you go home.

Problems and complications

The most common complication is the failure of the ETV to drain CSF. The endoscope makes an opening on the floor of the third ventricle. Scar tissue can form over this opening and seal it off.

If the ETV fails, your child may need another ETV, or a different type of shunt for managing hydrocephalus.

Warning signs of an ETV problem can appear quickly. Call your provider or nurse if you see the following:

Infants:

- Full, tense fontanel or head enlargement
- Bulging scalp veins
- Swelling or redness along shunt tract
- Unusual vomiting, fussiness or sleepiness

- Less interest in eating
- Downward looking of the eyes

Older children:

- Headaches, vomiting, fussiness, tiredness
- Loss of previous abilities
- Constant downward looking of the eyes

Neurosciences

For locations and contacts visit:
https://www.cookchildrens.org/services/neurosciences/

or

These instructions are only general guidelines. Your healthcare provider may give you special instructions. If you have questions or concerns, please call your healthcare provide