Epilepsy Surgery: Functional Hemispherectomy

The cerebrum is the largest part of the brain. It is above the cerebellum and the brain stem. It is divided into right and left hemispheres. The corpus callosum is in the middle of the two hemispheres and connects them.

The left hemisphere controls the right side of the body. In most kids, the brain’s speech and language centers are in the left hemisphere.

The right hemisphere of the brain controls movement of the left side of the body. It may control speech and language in some left-handed kids, as well as in some kids whose left hemisphere is damaged or malformed.

What is a functional hemispherectomy?

A functional hemispherectomy is a surgery done to treat epilepsy. During surgery portions of brain are removed and the corpus callosum is cut. This surgery disconnects the side of the brain that is causing seizures. After surgery, abnormal electrical discharges cannot spread to cause seizures.

The surgery normally takes about 4 hours. Your child will be given general anesthesia so they are in a deep sleep during surgery.

- This surgery is an option for children whose seizures come from one hemisphere of the brain and are not controlled by seizure medicine.
- This surgery can help disorders such as Rasmussen’s Encephalitis, Sturge-Weber Syndrome, hemimegalencephaly, cortical dysplasia, or stroke.

What happens after surgery?

After surgery your child will stay in the ICU for 1 to 2 nights. When ready, your child will be moved to a regular room in the hospital. Your child should be ready to go home within 1 to 2 weeks after surgery.

Will my child have any permanent side effects after surgery?

There are some common side effects from this surgery. Many of these effects may have been present before surgery due to a child’s underlying disorder. Therapists will begin working with your child after surgery to help them get used to these changes. Continued physical and occupational therapies can improve function of the affected side.
After surgery your child will have:

- Hemiparesis. This is weakness and paralysis of one side of the body.
  - A right-sided hemispherectomy will cause your child’s left side to be weak.
  - A left-sided hemispherectomy will cause your child’s right side to be weak.
  - Your child will be able to walk and likely run again after this surgery. A brace may be needed to keep the affected foot from dragging.
  - Your child will be able to move their elbow and shoulder muscles to use their affected arm. They may have trouble using their hand and fingers for fine motor tasks. Things such as buttoning, picking up small items, or holding a pencil may be hard to do.

- Visual field cut. This will be explained more before surgery. Many children will get used to this change.

About 3 out of 10 children will have **hydrocephalus** after this surgery. This is an extra fluid build-up in the brain. A shunt may need to be placed to keep the fluid draining.

**Resources**

The Hemispherectomy Foundation is a very good resource for families. Please take time to explore their website at [http://hemifoundation.intuitwebsites.com](http://hemifoundation.intuitwebsites.com).

*This teaching sheet is meant to help you care for your child. It does not take the place of medical care. Talk with your healthcare provider for diagnosis, treatment, and follow-up.*