



NATIONWIDE CHILDREN'S
When your child needs a hospital, everything matters.™

Helping Hand™

Health Education for Patients and Families

Optic Gliomas: Optic Pathway Glioma of Childhood

Childhood optic pathway glioma (glee OH ma) is a slow-growing brain tumor that forms along the optic nerve. Optic gliomas are the most common type of brain tumor in children under the age of 10.

The optic nerve relays what the eye sees to the brain along a pathway. Glial cells surround and protect the optic nerve. When they malfunction and grow abnormally, they form a tumor called an optic glioma. The tumor can press on the optic nerve, block the pathway of image signals to the brain and affect vision.

Risk factors

There is a close link between optic pathway glioma and neurofibromatosis Type 1 (NEER-oh-fie-bro-ma-TOE-sis) (NF1), a genetic disorder of the nervous system. About 15% of children with NF1 will have an optic pathway glioma sometime during their lifetime. This is why children with NF1 should have routine eye exams.

Signs and symptoms

You may see the following in your child:

- squinting
- involuntary eye movement
- vision loss in one or both eyes
- eye bulging outward
- changes in endocrine functions

Diagnosis

Tests and exams used to diagnose optic gliomas:

- An eye exam to check vision.
- A physical exam is used to look for signs of NF1.
- A magnetic resonance imaging (MRI) scan takes a picture of the brain and optic nerves.

Staging

There is no staging system for childhood optic pathway glioma. It is extremely rare for these tumors to spread to other parts of the body beyond the eye. However, the tumors may grow and cause problems to the brain structure.

Treatment

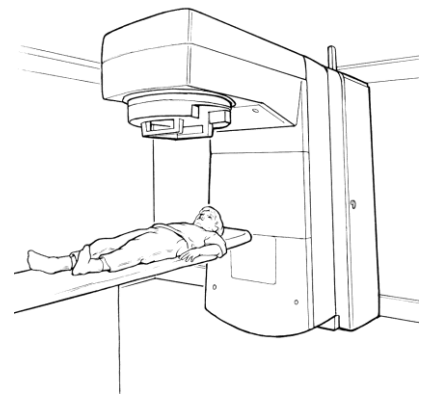
Treatment depends on the size and location of the tumor, your child's age and overall health. Most children do not need to be treated right away. These tumors in children with NF1 grow very slowly. The decision to start treatment depends on the growth of the tumor and if there has been a loss of vision or effect on the endocrine system.

There are three different treatments for optic pathway gliomas:

- **Chemotherapy**, which is the use of drugs to destroy or slow the growth of cancer cells.
- **Radiation therapy** which uses a high dose X-rays to shrink or destroy cancer cells (Picture 1).
- **Surgery** to take out a part of the tumor. It is not usually done but can be useful in some unique cases.

Your child's treatment will be managed by a pediatric oncologist which is a doctor that specializes in the treatment of children with cancer. This doctor may refer your child to other health care professionals such as a:

- geneticist
- psychologist
- ophthalmologist
- radiation oncologist
- pediatric neurosurgeon (brain surgeon)
- other doctors who specialize in the type of treatment your child needs



Picture 1 Child receiving radiation therapy.