

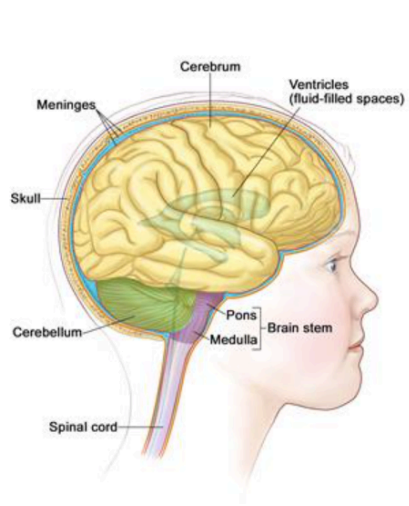
Brain Stem Glioma

What is brainstem glioma?

In childhood brain stem glioma benign or cancerous cells can form a tumour in the brain stem. The brain stem is in the base of the brain connecting with the spinal cord. It controls breathing, heart rate, and the nerves and muscles used in seeing, hearing, walking, talking, and eating.

There are two kinds:

- DIPG (diffuse interstitial pontine glioma) is a cancerous tumour that is hard to treat and all patients die, usually in less than a year. Nevertheless radiation may prolong survival.
- Focal glioma is slow-growing and more localized. It is easier to treat than DIPG with better survival and may respond to either radiation or chemotherapy.



What causes brain stem glioma?

The cause is usually unknown. A small number of patients have neurofibromatosis type 1 (NF1, a genetic disorder), which is associated with focal or slow growing gliomas which can be observed or treated with simple chemotherapy.

What are the signs and symptoms?

The signs and symptoms of brain stem glioma depend on where the tumor is, how large it is and how fast it's grown and may include 1) Inability to move one side of the face or body 2) Loss of balance and trouble walking 3) Vision and hearing problems 4) Morning headache 5) Nausea and vomiting 6) Unusual sleepiness, or lethargy 7) Changes in behavior or school problems.

How is brain stem glioma diagnosed?

- A thorough physical and neurologic examination and history is important.
- MRI (magnetic resonance imaging) scanning with gadolinium helps to see the tumor clearly (and plan for surgery, if needed). If the MRI scan looks like DIPG, a biopsy is usually not done, unlike in more benign brain stem gliomas.



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How are they treated?

Cancerous brain stem tumors (DIPG) are the most common, grow quickly and spread into other brain tissue whereas benign tumours grow slowly and do not. Both benign and cancerous brain tumors may press on surrounding parts of the brain and stop that part of the brain from working the way it should, requiring treatment.

DIPG usually responds to 6-7 weeks of local radiation to the tumour but eventually comes back. New drugs are available on clinical trials and your doctor can discuss that with you.

Benign or low grade gliomas may be observed after surgery/biopsy, or subsequently treated with chemotherapy involving two drugs: vincristine and carboplatin. Sometimes if the tumour continues to grow then radiation may be considered but only in patients who do not have NF-1.