

Glioblastoma Multiforme

Glioblastoma multiforme accounts for 30 percent of all brain tumors and is the most common primary brain tumor in adults. The tumor presents special problems because it is not solid and cannot be removed in one clean piece. The tumor is diffuse, and individual cells tend to escape removal. As a result, the tumor often grows back near the site of the initial mass.

What is a glioblastoma?

A glioblastoma is a malignant tumor that originates from the supportive tissue of the brain and grows from star-shaped, astrocyte cells. Glioblastoma tumors have tentacle-like cells that grow into the surrounding tissue. While there are low-grade astrocytomas, the grade IV glioblastomas are more common. Completely malignant, they can grow very rapidly in the brain in a period of three to six months.

What are the symptoms of glioblastoma?

Headaches, memory loss, seizures and behavioral changes are the most common symptoms, resulting from increased pressure caused by the tumor's rapid growth. As the tumor grows, loss of certain bodily functions may also occur.

What causes glioblastoma?

The cause is unknown.

Who is affected?

Glioblastoma occurs in all age groups, but it occurs most often in older adults. Less than 10 percent of childhood brain tumors are glioblastomas. The tumor is more common in whites than in blacks, Latinos and Asians, and it is slightly more common in men than in women.

What treatments are available?

If a patient has symptoms that suggest a glioblastoma, the patient's physician will work with a team of specialists to confirm the diagnosis. A specialist will conduct a neurological examination, followed by CT scans and/or an MRI. These tests will help determine the size, location and type of tumor. The diagnosis can be confirmed by a biopsy.

Specialists employ multiple strategies in the treatment of glioblastoma

- Chemotherapy
- High-precision radiosurgery, including three-dimensional conformal radiotherapy and stereotactic radiosurgery
- Image-guided neurosurgery
- Intraoperative MRI
- Radiation seed implants
- Surgery

Innovative research at the UC Neuroscience Institute has shown that dual implantation of radioactive seeds and chemotherapy wafers following surgery for recurrent glioblastoma led to promising results. The study, published in the February 2008 issue of the Journal of Neurosurgery, revealed that the simultaneous implantation of radioactive seeds and chemotherapy wafers was well tolerated by patients and provided longer survival compared with the implantation of seeds or wafers alone.



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