Brain gliomas

Gliomas are intracranial tumors. They come **from their own brain tissue** , so they are also referred to as intrinsic. **It is one of the most important CNS tumors** due to its frequent occurrence . A typical picture is a *hemispherical* tumor growing *infiltratively* . Even with a relatively large size, it does not disrupt brain tissue. The length of the symptom history is "inversely proportional" to the malignancy.

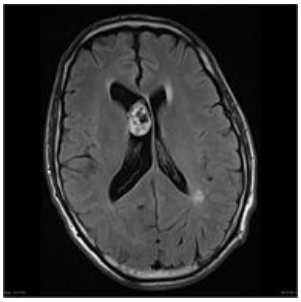
Classification

Tumors of the brain parenchyma are referred to as intrinsic. The vast majority are **gliomas** (tumors of the glia). Tumors from neurons are rare because neurons do not divide after birth (just during the division of the cell, its malignant transformation can occur) and create the permanent structure necessary to preserve memory traces.

Gliomas are divided into:

1. astrocytoma
2. oligodendroglioma
3. ependymoma
4. ganglioglioma MRI - WHO grade I ependymoma

Clinical manifestations



MRI - WHO grade I ependymoma

Gliomas (and intracranial tumors in general) are accompanied by a typical triad of symptoms:

1. focal neurological deficit
2. intracranial hypertension syndrome
3. secondary seizures

Focal neurological deficit

Focal neurological deficits are extinct neurological symptoms that vary according to the location of the tumor. These are paresis , visual field disorders, mental alterations, disorders of symbolic functions (aphasia , dyscalculia), cerebellar symptoms, cranial nerve disorders .

Causes of focal neurological findings:

1. direct damage to brain tissue by tumor (permanent)
2. peritumoral edema (reversible)
3. local compression (not always reversible)

Intracranial hypertension

Causes of intracranial hypertension in intracranial tumors:

1. own tumor volume
2. peritumoral edema
3. cerebrospinal fluid obstruction (in cranial fossa tumors)

Secondary seizures

Secondary seizures are *irritant focal symptoms* . Epileptogenic focus is due to partial damage to neurons at the tumor site. This so-called **secondary epilepsy** , having an organic cause, is also referred to as *lesional epilepsy* . Epilepsy is more common if the tumor grows to a specific location. Patients with tumors damaging the sensitive or motor gyrus are most likely to develop epilepsy and mediotemporal structures. It also depends on the individual's emergency, ie each individual has a different predisposition to epilepsy. Initially, localized seizures (Jackson's epilepsy) appear, later generalized (grand mal), where the patient is threatened with life by brain hypoxia and subsequent accentuation of edema around the lesion. An epileptic seizure can often be the first sign of an intracranial tumor.

Astrocytoma

Astrocytoma is the most common of the glial intracranial tumors , although it can also occur in the spinal cord (especially in children)[1] . Both benign and malignant forms are known. Astrocyte tumors have a typical tendency to **degenerate from more benign to more malignant forms** - so benign astrocytomas are often diagnosed in younger patients and, conversely, malignant in older patients[2]

Oligodendroglioma

Oligodendroglioma is in most cases a benign tumor, but there are also semi-minimal forms. It typically affects adult patients, the most common location being the **frontal lobe**[3] . The prognosis is more favorable compared to astrocytomas, although the probability of recurrence is still very high [4] .

Ependymoma

More detailed information can be found on the Ependymom page .

It is a tumor with a relatively diverse biological behavior, there are both benign and malignant forms. Most often, ependymomas grow intracranially in the **ventricular system** (especially ventricular IV), but it can also occur in the spinal cord (they represent 60% of all spinal intramedullary tumors). Intracranial ependymomas are prevalent in children, whereas spinal ependymomas are prevalent in adult patients[5] [6].

Ganglioglioma

Ganglioglioma is **a rare CNS tumor** , most often located in the **temporal lobe** [7] . It is not purely glioma - it consists of glial and neuronal (ganglional) cells, while the proportions of its components differ in individual patients. In the vast majority of cases, it is a low-grade tumor, although there is also an anaplastic form with highly aggressive behavior and an unfavorable prognosis [8]. It mainly affects younger patients [9] .

Links

related articles

- Meningeoma
- Astrocytoma
- Glioblastoma
- Oligodendroglioma
- Ependymoma
- Schwannom
- Vestibular schwannoma
- Spinal tumors
- CNS tumors (pediatrics)

Source

- ws:Gliomy mozku
- BENEŠ, Jiří. *Study materials* [online]. © 2007. [feeling. 2009]. < http://www.jirben.wz.cz/ >.

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CNS tumors

Brain tumors

primary	glial	astrocytoma • ependymoma • oligodendroglioma • anaplastic ganglioglioma
	neuronal	gangliocytoma • neuroblastoma • central neurocytoma • medulloepithelioma
	meningeal tumors	meningioma
	embryonic	medulloblastoma • atypical teratoid rhabdoid tumor • neuroblastoma
	mixed	pituitary adenoma • craniopharyngeal
	peripheral nerve tumors	vestibular schwannoma
	lymphatic tissue tumors	primary CNS lymphoma
secondary	metastases	

Spinal cord tumors

primary	extradural	benign	osteoid osteoma • osteoblastoma • hemangioma • enchondrum
		malignant	osteosarcoma • chondrosarcoma • Ewing's sarcoma • multiple myeloma • lymphoma • chordoma • fibrosarcoma
	intradural	extramedullary	meningioma • schwannoma • neurofibroma
		intramedullary	ependymoma • astrocytoma • teratoma • oligodendroglioma • lipoma • ganglioglioma • epidermoid tumor • dermoid tumor • hemangioblastoma
secondary	metastases		

Portal: Neurosurgery