CNS tumors

CNS tumors are one of the possible causes of intracranial hypertension . For CNS tumors, it is generally true that the designation is benign, relative to the confinement of the intracranial space and the relatively constant distribution of the individual compartments. Nervous system tumors can be both primary and metastatic . If a CNS tumor is suspected, metastatic origin should be considered (about 20% of patients with malignancy have metastatic brain involvement).

Incidence

2–19 diseases / 100,000 inhabitants / year

age dependence

Division

according to location, size and degree of malignancy (TNM and GMT staging system)

according to the histological picture up to 4 degrees - according to the presence of atypia of cell nuclei, increased mitotic activity, endothelial proliferation and the presence of necrotic changes. *0 changes*

Degree

1 = no change

2 = one change

3 = two changes

4 = three changes

Clinical signs

1. Generalized - intracranial hypertension syndrome (see above)

2. Focal from local tissue damage

3. Bearing remote - conical (see above)

Symptoms leading to suspected CNS tumor

Cefalea (persistent, worse at night and in the morning than in the afternoon, associated with nausea or vomiting or diplopia or weakness)

Personality changes (memory disorders, behavior, concentration, confusion)

Epileptic symptoms (first symptom in ¼ tumors)

Development of focal symptoms

Slow progression (sudden onset of bleeding, decompensation of cerebral edema , hydrocephalus)

WHO classification of CNS tumors

I. tumors of neuriepithelial tissue	
astrocytární Oligodendroglial ependymal chorioid plexus neuronal primary neuroectrodermal	**astrocytoma gr. I – III , astrocytoma gr. IV (gliobl. Multiforme)** **oligodendroglioma** **ependymoma** papilloma, papillocarcinoma ganglioma, gangliocytoma **medulloblastoma**
II. nerve sheath tumors	**neurinoma**, neurofibroma
III. meningeal tissue tumors	**meningeoma**
IV. tumors of vascular origin	hemangioma
V. nádory zárodečných buněk	germinoma, choriocarcinoma, embryonic carcinoma
VI. primary malignant lymphomas	
VII. malforming tumors	**craniopharyngeal**, cysts, lipomas
VIII. vascular malformations	telangiectasia, AV malformations, caverns.
IX. pitutary tumors	**adenomy**
X. local tumors	chord, chemodectoms, chondroma.
XI. metastatic tumors	**carcinomas**, **sarcomas**, **NH lymfomas**

Metastatic processes in the CNS

Dural

Leptomeningeal

Multiple intracranial

Solitary

The most common primary tumors metastasizing to the CNS are ca - lung , breast , Grawitz 's tumor and malignant melanoma .

Auxiliary examinations

CT

MRI

Angiography

Perimyelography (PMG)

Scintigraphy

FIVE

MRI spectroscopy

Biopsy

Search for a primary tumor in case of metastatic disease

Therapy

Targeted treatment of CNS tumors is beyond the scope of this publication. It is part of an interdisciplinary collaboration between a neurologist, neurosurgeon, radiologist, radiotherapist and neurooncologist. The principles of the procedure are general procedures in the care of a neurological patient, and targeted treatment is usually a combination of surgical solution and radiation therapy and possibly cytostatic chemotherapy.

The acute condition is the development of intracranial hypertension syndrome, see the procedure above. In patients with metastatic disease or patients with advanced edema, more corticoids in intravenous or oral form (dexamethasone) come to the fore.

Individual treatments for CNS tumors

- Microsurgery
- Stereotactic operation
- Laser, UZ
- Traditional radiotherapy
- Fractionated radiotherapy
- Radiosensitive substances (oxygen)
- Stereotactic radiosurgery
    - (Gamma knife , linear accelerator)
    - (Interstitial brachytherapy)
- (Boron Neutron Capture Therapy)
- Chemotherapy
- Interstitial chemotherapy
- Intrathecal infusion *(only oligodendroglioma and CNS lymphomas are chemosensitive in adulthood, and medulloblastoma in childhood)*

Differential diagnosis of CNS tumors

Traumatic lesions	▪ Chronic subdural hematoma
Inflammatory lesions	▪ brain abscess ▪ encephalitis
Vascular lesions	▪ ischemic stroke (progressive stroke) ▪ intraparenchymal hemorrhage ▪ AV malformation ▪ aneurysm
cerebral pseudotumor	
Other	▪ Demyelinating disease attack, archnoid cyst, headaches of non-tumor etiology, decompensation of neurodegenrative diseases,...