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MODERN METHODS OF DIAGNOSTICS AND DIFFERENTIATED APPROACH TO COMPREHENSIVE TREATMENT OF INTRACEREBRAL TUMORS OF THE CEREBRAL HEMISPHERES

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Abstract: Glial tumors of the brain in the structure of neuro-oncological diseases, despite the significant progress achieved in the diagnosis and treatment of this nosological category, still remain an urgent problem. Epidemiological data on primary tumors of the central nervous system vary from 7.42 to 13.9 per 100,000 population per year. The incidence of glial tumors is high among people of working age with rates from 40 to 65% of all tumors of the central nervous system [1,2,3,4].

Despite the advances made in the field of neurooncology, a number of issues still need to be detailed, including the use of modern methods of radiation diagnostics not only for diagnostic purposes, but also in planning surgical approaches, as well as a more detailed study of the complex treatment of glial brain tumors, which includes surgery, radiation and chemotherapy [5,6,7].

Keywords: clinical observations, degenerative-dystrophic diseases, muscles, complex exercises, rehabilitation.

Introduction

The purpose of this dissertation was to study the clinical and neurological features, the importance of modern methods of radiation diagnostics, the effectiveness of complex surgical treatment, radiation and chemotherapy of intracerebral tumors of the cerebral hemispheres.

Materials and methods: The study included 75 patients with intracerebral tumors of the cerebral hemispheres, who were treated in the neurosurgical department of the clinic of the Samarkand Medical Institute in the period from 2012 to 2015, of which 48 patients were under their own observation and 27 - an analysis of materials from archival case histories was conducted. All patients underwent surgical intervention. When distributing patients with brain tumors of the cerebral hemispheres by age, we used the generally accepted WHO classification (2007). The age of patients ranged from 4 years to 64 years, with an average of 35.7 ± 13.9 years.

According to age, all patients with intracerebral tumors of the cerebral hemispheres were divided into 3 groups (Fig. 1).

IOBPGM were most often detected in patients aged 19 to 45 years, who accounted for 61.3%. They were followed by patients aged 46 to 64 years - 24%. In our study, IOBPGM were least common in patients aged 4 to 18 years, who accounted for 14.7%.

The distribution of patients by gender was as follows: 57.7% were men and 49.3% were women, i.e. there was an equal incidence of IOBPGM in both genders.

All patients with tumors of the cerebral hemispheres were divided into 10 groups

depending on the localization of the neoplasm, namely, in 22 patients (29.3%) the tumors were localized in the temporal lobe, in 13 (17.3%) - in the frontal lobe, in 9 (12%) - in the parietal lobe, in 8 (10.7%) - in the frontotemporal lobes, 6 patients (8%) - in the fronto-parietal and parieto-temporal lobes, 5 (6.7%) - in the temporo-parietal lobes, as well as 2 patients (2.7%) in the fronto-parieto-temporal, temporo-occipital and parieto-temporo-occipital lobes of the brain.

IOBPGM were predominantly located in the right hemisphere in 52% of patients, and in the left hemisphere they were found in 48% of patients.

The duration of the disease from the appearance of the first symptoms to the correct diagnosis was on average 1 year 7 months. Surgical intervention was performed in all 75 patients, 68 operations for primary tumors of the IOBPGM and in 7 patients operations were performed due to tumor recurrence. Operations were performed under endotracheal anesthesia. Bone-plastic trepanation was performed in 69 patients, and resection trepanation was performed in 6 patients. Tumor removal was performed by conventional methods using mono- and bipolar coagulation, vacuum aspirator.

After surgery, the tumor tissue was subjected to histological examination to verify the tumor structure. Based on the current morphological classification of WHO (2007), tumors were distributed by histological structure. It should be noted that the stages (degrees) of intracerebral tumors are determined according to the classification of Daumas-Duport S. et al. (1988), which takes into account 4 main criteria of malignancy of astrocytic tumor (nuclear atypism, mitoses, endothelial proliferation and necrosis): grade 1 - absence of these signs; 2 - presence of one of them; 3 - presence of two signs and grade 4 - presence of at least three signs;

Table 1. Distribution of patients depending on the histological structure of tumors.

Morphological diagnosis	Number of observations	
	abs.	%
Protoplasmic, mast cell and fibrillary astrocytoma (WHO Grade II)	31	41.3
Anaplastic astrocytoma (WHO Grade III)	21	28
Oligodendroglioma (WHO Grade II)	9	12
Pilocytic astrocytoma (WHO Grade 1)	8	10.7

Anaplastic oligodendroglioma (WHO Grade III)	3	4
Glioblastoma multiforme (WHO Grade IV)	2	2.7
Anaplastic ependymoma (WHO Grade III)	1	1.3
Total:	75	100

As can be seen from Table 1, in our patients the most common types were protoplasmic, fibrillary and mast cell astrocytomas (Grade 11) - 41.3%. They were followed by anaplastic astrocytomas (Grade III) - 28%, oligodendrogliomas (Grade II) - 12% and pilocytic astrocytomas (Grade I) - 10.7%.

Diagnostic methods

Timely diagnosis of brain tumors is considered a very important link in neurooncology. Late referral of patients to a neurosurgeon or referral in advanced stages of the disease can lead to serious consequences. The advent of CT and MRI studies of the brain makes it possible to accurately diagnose brain tumors.

In our study, all patients underwent a full comprehensive examination: clinical-neurological, neuro-aphthalmological, neuro-otiatric, clinical-laboratory, and radiation diagnostics.

All patients underwent clinical examination with subsequent dynamic observation of the patients' condition taking into account their age and clinical course. The patients' condition was assessed in accordance with the formalized medical history (scientific chart). Table 2 shows the Karnovsky scale, which was used for the dynamic assessment of the condition of patients with IOBPGM.

Clinical examinations included examination by a neuro-ophthalmologist, otoneurologist and psychiatrist in the pre- and postoperative periods.Clinical and instrumental examination methods play a significant role in establishing a diagnosis and choosing treatment tactics.

I. Neurophysiological methods:

EEG was performed on the Medicor device (Hungary) for almost all patients with epileptic syndrome (60%). All of them had changes in the bioelectrical activity of the brain. Thus, diffuse changes were detected in 22 (29.3%) patients, local changes - in 27 (36%) examined. Irritation of the stem structures of varying severity at different levels of the brain stem was noted in 15 cases (20%). It should be noted that the manifestations were associated with diffuse changes in 11 (14%) patients. Focal changes in the EEG in the overwhelming majority of cases were observed in patients with motor and generalized seizures. Diffuse changes (and their combination with focal changes) were more often recorded in patients with generalized seizures. Interhemispheric asymmetry on EEG was detected in 30 (57.7%) patients, which was manifested by more pronounced cortical irritation and epileptoid activity was recorded on the side of the pathological process.

EEG revealed characteristic changes in localization, in the form of general cerebral and local changes.

Results: In 46 (61.3%) cases, the neoplasm was removed totally. In 20 (26.7%) cases, the neoplasm was removed subtotally, and partial removal was performed in 7 (9.3%) patients. In 2 (2.7%) cases, biopsy was required due to the deep localization of glial tumors.

Surgical removal of the tumor was performed in all 75 patients (68 primary operations and 7 after tumor recurrence). The operations were performed under endotracheal anesthesia. The tumor was removed by conventional methods using mono- and bipolar coagulation, vacuum aspirator, most of the operations were performed by the traditional open method and, according to indications, microsurgical technique was used.

During the operation, not only the localization but also the functional significance of the tumor location zones was taken into account so that the surgical access was physiologically permissible and did not cause additional damage to functionally significant conduction pathways (FSCP).

1. Complex treatment of patients with IOBPGM with surgical intervention, radiation and chemotherapy helps to extend the median life expectancy of patients and improve their quality of life.

2. A study of the follow-up of 31 patients with glial tumors showed that the median survival time in the group of patients with highly differentiated glial tumors was 30.8 months, and in the group of patients with poorly differentiated glial tumors - 28.2 months, i.e., on average, respectively, 2 months and 13 months are higher than the literature data.

Conclusions:

1. Timely diagnostics with a thorough examination of neurological symptoms and the use of modern methods of radiation diagnostics contribute to the early detection of intracerebral tumors of the cerebral hemispheres (ICTs).

The analysis of the research work allowed us to assess modern trends in the diagnosis and treatment of IOBPGM, the feasibility and validity of various treatment methods. This information is the basis for a differential approach, choosing the optimal treatment option for a given group of patients**References**

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