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Study of functional disorders of the brain stem in patients with tumors of the base of the posterior cranial fossa and their importance in an operational treatment

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Aim - to improve the results of surgical treatment of patients with a tumor of base posterior cranial fossa: a) minimally invasive, b) with prediction and prevention of intraoperative complications, c) with reduction in the time of the operation, d) with improving in the recovery of patients, e) with reduction in mortality.

Materials and methods. The work is based the analysis of treatment of 165 patients with a tumor of the base of the posterior fossa. By histology tumors were classified on the neuroma – 69 patients (42%), meningioma - 96 patients (58%). Localization was isolated: a tumor of the left bridge - cerebellar angle - 80 patients (49%) and right bridge - cerebellar angle – 85 (51%). In the preoperative period, all patients underwent diagnostic procedures including: CT EEG monitoring of the functional activity of brainstem structures, spiral CT of the brain, MRI and MRA of the brain. Operations were performed in the sitting position under endotracheal anesthesia. Differential-line access, depending on the tumor localization, was used: the median, paramedian, para-retrosigmoid suboccipital brain stem. Removal of tumors was performed using an ultrasonic disintegrator-aspirator, high frequency coagulation, by micro-surgical tools, a microscope and endoscopic neuro video assistance. During the operations CT EEG-DXNT-32 monitoring of functional activity of brain stem structures was performed conducive to timely detection and prevention of the the brain stem dysfunction.

Results. Total removal of tumors was performed in 130 patients (79%), subtotal – in 35 patients (21%). Introduction of above described approach lead to the following results: 130 patients (79%) discharged in good condition, 20 patients (12%) - in satisfactory condition, and only 15 patients (9%) experienced fatal outcome.

Conclusion. Based on available data, we can conclude that the new method of treating patients with posterior fossa tumor and secondary stem violations from the use of differentiated operational approaches, ultrasound equipment, high frequency coagulation, and microsurgical techniques, surgical microscope, endoscopic video assistance, under the constant intraoperative electrophysiological control the functional activity of stem organizational structure pulp using CT EEG-DXNT-32 monitoring system allows to remove the tumor more radically, and minimally invasive, to reduce the time of operation, to predict and prevent intraoperative complications, improve outcomes by reducing the recovery period and reduce mortality.

Diffuse low grade astrocytoma vs gliomatosis cerebri - diagnostic and therapeutic considerations

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Gliomas represent the most common primary brain neoplasm.

Diffuse low grade astrocytoma is one of the most prominent subtype of „low grade gliomas”, on the contrary, gliomatosis cerebri with great certainty behaves like a malignant tumor that is very similar to glioblastoma multiforme.

In spite of the sharp difference of clinical dignity the involvement of the central nervous system , the appearance on MR, and the histological findings may exhibit similarities. Differential diagnosis is extremely important from therapeutic point of view, as well.

In this paper two illustrative case presentations demonstrate the diagnostic and therapeutic approaches to these entities, summerizes the most important differential diagnostic features and therapeutic considerations.

Additionally, the presentation is going to stress the need how important is to know exactly the natural course of a disease. Beside the informations derived from the huge international studies, the data of everyday individual neurosurgical practice is also essential part of clinical science. Further efforts should be made to collect and preserve our daily experiences.