

determine the greater or lesser effectiveness of the directed search for the correct solution of a standard cognitive task. repeated excursions along already used channels, each time searching a new pathway to achieving the step-wise result, The Emotion will be positive only when the brain has sufficient level Information, Knowledge, Skills, their presence depends on I.Q. for Rats or Cognitive Abilities, what exactly and determine test CA. GAS includes concept Distress and Eustress, animals which on weak irritant - the labyrinth or the problem chamber and form Distress - 70 %, and only 30 % form in such situation Eustress.

Results of behavioral tests showed that negative emotion and defect of level Information, Knowledge, Skills decries levelCognitive Abilities, a contrary - positive emotion and high level Information, Knowledge, Skills highlevelCognitive Abilities.

#### **References**

1. Grigor'ev N.R, Cherbikova G.E., Yuriev E.Yu. Problem chamber for measure evolution level of cognitive abilities in rats. The Patent RF. №2432902. 2011.
2. Grigor'ev N.R, Cherbikova G.E. Experimental research model for the search of activity and cognitive abilities in rats. International J. of Psychophysiology. 2008. 69 (3): 250.
3. Grigor'ev N.R., Batalova T.A., Cherbikova G.E., Kirichenko E.F., Sergievich A.A. Typological Features in the Behavior of Rats. Neuroscience and Behavioral Physiology. 2008. 38(6): 597 - 603.
4. Grigor'ev N.R, Cherbikova G.E. Influences of stress on primary mental abilities of rats. The 9<sup>th</sup> Sino-Russia Biomedical Forum/ Harbin-China. P. 200-201.

## **The principles of medical care of the patients with metastatic brain tumors**

*Karnaukh A.I.*

Amur State Medical Academy, Blagoveshchensk, Russia

**Abstract.** The frequency of metastatic tumors of the brain; the sources of the metastatic spread were analysed in this work; the possibilities of methods of neurovisualization in the diagnosis and surgical removal of secondary tumors of the brain were shown. The low of the revelation of metastatic tumors dictates the necessity of the union of neurosurgeons, oncologists, chemotherapeutists and radiologists to render the assistance to patients with the secondary injury of the central nervous system.

**Key words:** metastatic tumors, the frequency of occurrence, sources of metastatic spread, surgical treatment.

Exact figures of tumors morbidity of the brain are not clear and according to Russian oncologists they make up about 15 per 100000 of the population a year, this significantly exceeds the morbidity of primary tumors of the brain [5]. According to the data of the cancer-register of the USA the morbidity of metastatic tumors of the brain achieves 35 per 100000 of the population [1, 2, 3]. At present the majority of patients with disseminated cancer does not consult neurosurgeons and the number of them in the neurosurgical hospital does not exceed 8-10% among all intracranial neoplasms. Till recently this group of patients was considered to be with no prospects and got only the symptomatic treatment. At present due to the introduction of new modern methods of neurovisualization there appeared the possibility of the exact diagnostics of the character, localization of secondary injury of the brain using the choose of optimal methods of treatment. It allows to reduce risk factors and indices of mortality during surgical removal of metastases from the brain including the located functionally significant zones [4, 6].

**Materials and methods.** The aim of this investigation was to study the frequency of metastatic tumors in the brain, the sources of metastatic spread, to estimate possibilities of surgical treatment. The analysis of the patients with the disseminated cancer of the brain in the Amur regional oncological dispensary (AROD) and of the patients with the presumable diagnosis of the tumor of the brain admitted to the neurosurgical clinic of the Amur regional clinical hospital (ARCH) for 1997 – 1999, 2005 and 2009 was made; at the examination and during the treatment in the latter ones metastatic process was revealed

In the AROD 614 patients with the IV clinical stage of cancer were registered in March 2010; 54 (8,8%) cases of them had metastatic injury of the brain and spine; their structure looked like: metastases of the brain made up 27,8% (15 cases), of the spine - 68,5% (37 cases), of the brain and spine - 3,7% (2 cases). During diagnostic investigation of patients with metastatic injury of the central nervous system the primary focus was revealed in 81,5% (44 cases), in 18,5% the primary focus was not diagnosed.

The primary focus of the metastatic spread in the spine was marked in 83,3%. More frequently metastases in the spine are observed in patients with breast cancer (32,4%), with lung cancer (13,5%), but in kidney cancer, in cancer prostatic gland, endometrium and thyroid gland metastases are decreasing.

The primary focus of metastatic spread in the brain was determined in 73,3% of patients. More frequently metastatic spread in the brain is observed in 26,7% of patients with lung cancer, in 13,4% of patients with breast cancer, in urinary bladder, kidney tumors, melanoma. However in 26,7% of patients the primary focus was not observed.

**Results and discussion.** The morbidity of metastatic tumors of central nervous system make up 6 per 100000 of the population, this is significantly lower than in the statistic data and testify to their low identification. The medical documents of the Amur regional oncological dispensary the data about solitary or multiple metastases of the brain are absent. Although just this fact at present is the most important one in the choice of the methods of treatment of secondary tumors of the brain. As a rule solitary metastases diagnosed by spiral computed tomography (SCT) or by magnetic resonance tomography (MRT) are subjected to the surgical treatment.

The majority of patients with the disseminated cancer do not come to the neurosurgeons. The data of the neurosurgical department of the Amur Regional Clinical Hospital testify that the metastatic character of the oncopathologic injury is revealed during the preoperative examination or histological verification of the removed tumor. According to the neurosurgical clinic data metastatic tumors occur from 8,1% till 15% of cases. The number of patients with secondary tumors increased by 2 times for the last years. During neurovisualization of the brain in 40% of cases there were found the solitary metastases and in 60% of cases – multiple nodes. MRT was the method of choice for the diagnosis of the secondary injury of the brain, as SCT reveals metastases in the posterior cranial fossa and small tumor in brain hemispheres. In contrast to gliomas intracerebral metastases more frequently had round forms and usually were well limited from the cerebral substance. The surgical removal of solitary metastases was not difficult. Radical removal of metastatic foci was carried out in all patients, it was confirmed by SCT and MRT. The surgical removal of the tumor led to the regress of neurological disturbances, to the disappearing of the hypertensive syndrome. The attempts to reveal multiple metastases were not successful, they led to the death in the post-operative period, or to the increase of neurologic disturbances.

Having analyzed the above mentioned data, we ask the question: «How long can the patients with metastatic injuries of the brain live after the surgical treatment?»

According to the data of AROD in 2009 year 1337 patients with tumors of different localization died. 3,8% (51 cases) of them had tumor of the brain and spine including metastatic ones. The live span of the patients without operations makes up 65 days. The average live span of the operated patients makes up 147 days, it is by 2,5 times higher.

**Conclusion.** Thus metastatic brain injuries must be verified by the data of neurovisualization (SCT and MRT). In cases of solitary metastases the operation must be performed even in cases

when the main focus is not removed; it allows to improve the life quality and life span of patients with metastatic injuries. In cases of multiply metastases chemotherapy, radial therapy and symptomatic therapy are necessary.

However patients with metastatic injuries of the brain need the perfect neurosurgical help. The union of oncologists, neurosurgeons, chemotherapists and radiologists allows to improve the revelation and to provide the succession in the work of all specialists participating in the complex therapy of this numerous and complicated group.

#### References

1. Alexeev A.G., Nasher A.A., Danilov V.I. et al. The state and problems of rendering neurosurgical help to patients with metastatic tumors in central nervous system / Reports of the V Congress of neurosurgeons of Russia. – 2009. – P.245 – 246
2. Baumert B., Steinauer K., Lutolf U.M. Therapy of CSN metastases // Ther. Umsch. – 1999.- Vol. 56, N6. – P.338-341.
3. Bindal R., Sawaya R., Leavens M. et al. Surgical treatment of multiple brain metastases // J. Neurooncol.- 1994. – Vol.79.-P.210-219.
4. Karnaukh A.I., Kunitsky O.A. Surgical treatment of the metastatic cerebral tumors. // Diagnostics and treatment of the malignant cerebral tumors. – Blagoveshchensk. – 2006. – P. 89-91.
5. Loshakov V.A. Intracranial metastatic tumors/ Clinical neurology. – Vol III, 2004. – C. 402 – 407.
6. Loshakov V.A., Pronin I.N., Golanov A.V. et al. Tactics of treatment of cerebral metastases in functionally significant zones of the brain / Materials of V Congress of neurosurgeons of Russia. -2009.- P.281.

## Comparative analysis of the outcomes of patients with diskogenic radiculopathy, operated by different ways

*Karnaukh A.I., Phomin A.V., Konkova D.Y.*

Amur state medical academy, Blagoveshchensk, Russia

**Abstracts:** There is a comparative analysis of the outcomes of patients with diskogenic radiculopathy, operated by conservative methods and the vertebral motor segment stabilization with implants – cavity titanium cages. The patients, operated with cage stabilization had more evident stato-dynamic disturbances, which were the main reason of invalidization and permanent disability. Putting the cage was appropriate only in case of the vertebral motor segment instability.

**Key words:** an intervertebral hernia, the vertebral motor segment, vertebral stabilization, cage.

Vertebral neurological lesions are the most spreading chronic human disease, manifesting in the period of the labor activity (at the age of 25 -55 years) and often leading to the temporary disability. Neurological complications of the spinal osteochondrosis as an invalidated reason have got the second place after the vascular cerebral diseases and left behind neurooncology and craniocerebral trauma[2].

The statement to the operative intervention in patients with diskogenic radiculopathy on account of the disk hernia compression is the effect lack from the conservative in-patient department treatment during two months. The patients are promptly operated in case of the compressive radiculopathy or radiculomyelopathy and cauda –syndrome caused by the media hernia. The vertebral motor segment instability is one of the reasons of unsatisfactory results