

Overcoming spatial agnosia in patients who have suffered an ischemic stroke in the right hemisphere

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Annotation

It is known that about 25-30% of all stroke patients exhibit an eclectic syndrome, manifested in a violation or loss of awareness of events and stimuli located on the opposite side of the lesion in the brain. Unilateral spatial agnosia (OPA) occurs in more than 40% of patients with lesions of the right hemisphere and is caused by damage to the frontal-parietal cortex and subcortical structures. The neglect syndrome is associated with a slower and weakened recovery of sensorimotor disorders, limits the effectiveness of rehabilitation interventions and negatively affects daily activities. More than 60% of patients remain with this type of disorder after the end of rehabilitation.

Goal

The development of effective methods to overcome the neglect syndrome in order to improve the effectiveness of rehabilitation and increase the patient's adaptation to social and household activities is an important task. On the basis of SIC, a comprehensive method is successfully used to overcome the non-eclectic syndrome, including classical and modernized neuropsychological rehabilitation. Patients with ONMC admitted to rehabilitation previously underwent neuropsychological examination aimed at assessing the current status of higher mental functions. According to the diagnostic results, unilateral spatial agnosia was revealed in all patients, in which violations in different modalities were noted: violation of visual perception in the form of ignoring or inattention to the left side of space, incorrect direction of scanning visual information; violation of tactile perception - in the form of tactile inattention in the Teuber test (patients distinguished touches separately on each hand, and ignored on the left side, while applying them at the same time); apractagnosic syndrome - in the form of ignoring the left side of the body; violation of holistic mental activity - in the form of anosognosia. Neuropsychological sessions were held in two stages and included individual neuropsychological procedures using classical (sensory and cognitive) methods, which were complemented by computer cognitive trainings. Neuropsychological rehabilitation at the sensorimotor level was carried out using the methods of psychostimulotherapy, basal stimulation, as

well as oculomotor exercises adapted by V. Stepanenko. The main tasks of work at this level are to increase the perception and awareness of the boundaries of one's own body, the position of the body in space, the perception and distinction of individual body parts. Various variants of sensory (somatic) stimulation were used, presented from two sides alternately, in the form of passive stimulation, carried out through touching or vibrational stimulation, affecting tactile and proprioceptive sensitivity. Since functional deficiency in patients with non-eclectic syndrome is noted in the regulatory link, opto-spatial analysis and synthesis, such techniques as collecting objects randomly placed on the table in front of the patient are used within the framework of cognitive (cognitive) rehabilitation; copying drawings of various complexity; proof-reading tests; sequential search for numbers; comparison of similar images; collecting images cut into several parts. In addition to individual sessions with a neuropsychologist, patients were assigned training on a computer system of neurorehabilitation, consisting of repetitive exercises of various levels of difficulty with adaptation of training tasks to each patient according to degrees of difficulty. To overcome OPA, programs were used aimed at: overcoming visual field disorders (visual neglect syndrome); restoration of visual spatial function; restoration of the properties of arbitrary attention. To overcome visual field impairments (left-sided visual disregard), "saccades" and "exploration" trainings were used. In the "saccades", the patient was required to look at the center of the screen, at the sun displayed on the horizon line. After a short beep, a stimulus appears near the sun, to the right or left. The patient had to scan the horizon line to the right and left to determine the location of the object from the central point, and then as quickly as possible press the button corresponding to the direction of the stimulus location. As the tasks progressed, the difficulty level increased and objects no longer appeared on the horizon line or at the same distance from the central object. In the "Exploration" training, a stimulus appeared on the screen in front of the patient, to which he should respond in the future and which must be remembered. Then a circle appeared on the screen, which moved according to the stimuli, as soon as the specified object was inside the circle, it was necessary to react by pressing a button. The restoration of visual-spatial

function was carried out using the programs "spatial imagination" and "visual-constructive skills". In the first case, a row of three or more figures appeared on the screen (the number depends on the difficulty level) and another one on the right side. Among the pictures, it was necessary to choose the same one as shown on the right side. It is important that only one figure from the row absolutely coincided with the one that stands to the side, but its location was different. In the "visual-constructive skills" training, the patient needed to put together a puzzle picture of the parts. To restore the regulatory component of mental activity, the "speed and correctness of response" training was used, in which stimuli appeared in front of the patient and it was necessary to press the button strictly corresponding to the desired stimulus as soon as possible. The correctness and response time were taken into account. Individual neuropsychological procedures

were carried out in an amount of at least 5, lasting 30 minutes, computer trainings from 8 to 10 sessions of 30 minutes each.

Conclusion

Against the background of the above-described neurorehabilitation measures in the condition of most patients, there was a positive trend in the form of a decrease in the severity of the neglect syndrome, an improvement in the course of cognitive activity, an increase in critical

abilities, and stabilization of the emotional background. Based on the data from previous studies that the percentage of left-sided neglect is quite high, as well as the fact that in more than 50% of patients this disorder persists after the rehabilitation process, the integrated approach we have developed for the rehabilitation of patients with non-eclectic syndrome is very promising and can provide significant assistance in overcoming OPA. The combined use of classical and modernized neuropsychiatric techniques has a mutually potentiating effect, increasing the results of rehabilitation of patients with OPA.

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