Cognitive visual impairments in brain trauma.

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More than 10 million people all over the world suffer from traumatic brain injury (TBI) every year. The problem of TBI is extremely important due to its influence on various aspects of the patient`s quality of life, including cognitive, behavioral, emotional and physical. The visual analyzer impairment is a quite frequent consequence of the TBI. The most frequent manifestations of visual disorders include defects of the central and peripheral vision, binocular vision and color perception disturbances, impairment of reading and writing, etc. However, there are patients whose visual disorders are associated with impairment of higher levels of perception, which are difficult to diagnose. There are disturbances of the visual-spatial feeling, disorders of processing and analysis of complex visual scenes, difficulties in recognizing certain aspects of the surrounding world, the presence of visual phenomena that are objectively absent. These visual disorders are called cognitive. The difficulties of diagnosing cognitive visual disorders are following: the lack of parallelism between the eye fundus picture and changes in visual functions; features of the lesion of the optic tract - the farther from the eyeball the damage is, the later changes in the fundus occur. The lesion of the central neuron of the visual pathway and the subcortical visualcenters do not appear ophthalmoscopically. Therefore, in the objectification of cognitive visual disorders, an important role is played by modern methods of neuroimaging, such as CT, MRI, fMRI, PET. With the help of these studies, it becomes possible to identify the morphological substrate of visual impairment. In addition, it is advisable to supplement these studies with a neurological examination, neuropsychological testing and health related quality-of-life assessment. Thus, verification of cognitive visual disturbances requires participation of ophthalmologists, neurologists, neuropsychologists, neurophysiologists and psychiatrists. Diagnosis of cognitive visual disorders is impossible without implementation of modern methods of neuroimaging.