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ANALISIS OF COMPLICATIONS AFTER CLOSED BRAIN INJURY

Abstract: Traumatic brain injuries are common, leading to disability in patients and decline in quality of life. The most common complication of brain injury is: asthenic, autonomic- dystonic, cerebrospinal fluid, Parkinsons, oculostatic, vestibular, epileptiform and others.

Key words: consequences of craniocerebral trauma, amnesia, cognitive function, disability, complication.

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Introduction

Objective: To identify diagnostic markers to determine the severity of postoperative complications of closed brain injuries of varying severity.

Tasks: 1. To determine the presence of complications 6 months, 1 year and 2 years after closed brain injury.

2. To study how the degree of disability after a brain injury depends on the duration of the injury and the severity of the injury.

3. Development of disability criteria in patients with closed brain injury.

Relevance of the topic: Closed brain injuries are statistically the most common type of injury and one of the leading causes of disability.

I.Introduction

Brain injuries occur mainly in men between the ages of 21-45. Brain injuries are common among law enforcement officers, and the incidence of temporary incapacity for work due to complications is high. Brain injury accounts for 30-40% of all injuries and is the number one cause of disability and temporary incapacity for work (G. J. Akhanova). In 64% of cases it occurs in the form of joint injuries. Complications of injury vary: from mild dizziness to severe death. Although the recovery period after a concussion is 1-3 months, it can cause a variety of complications. Incomplete post-traumatic treatment can lead to increased complications. Alcohol consumption should

be stopped during the recovery period as this can lead to epileptic seizures. Brain injuries can lead to disability in 40% of cases.

II.Analysis

Classification of closed brain injuries: According to the severity of closed brain injuries are divided into: mild, moderate, severe brain injuries. According to the clinical form: cognitive, motor, other functional disorders. Brain injuries:

1. Concussion.
2. Mild, moderate, severe degree of brain damage.
3. Diffuse axonal injury of the brain.
4. Brain contusion.
5. Head crush.

Complications of closed brain injury are divided into several groups:

Cognitive dysfunction: observed even in mild brain injuries, the patient feels dizziness, decreased mental activity. In moderate and severe injuries, amnesia, visual acuity, hearing loss, rapid fatigue are observed.

Speech and swallowing disorders: observed in moderate to severe injuries. In severe brain injuries, there may even be complete speech disorders.

Musculoskeletal disorders: In moderate brain injuries, muscle spasms and paralysis of the neck muscles may occur. In severe injuries may be partial

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paralysis, loss of sensation, paresis of the limbs, impaired coordination of movements.

Pain syndrome: It is observed even in mild brain injuries. Chronic headaches are associated with moderate to severe brain injuries.

Mental Disorders: Often seen in severe brain injuries. Patients may or may not be able to tolerate impaired bodily functions, complete or partial loss of cocktail abilities. The result is mental disorders of varying degrees and types. Apathy, irritability, depression can be observed.

Brain injury is serious for everyone. Timely and targeted rehabilitation measures are needed to prevent complications of brain injury. The effectiveness of rehabilitation depends on the nature and extent of the injury and the speed of care. Young people have a greater chance of full recovery.

In minor injuries, all functions of the body are fully restored. But getting a permanent brain injury (e.g. in boxers) can lead to dementia or encephalopathy over time.

After 6-12 months of moderate injuries, complications disappear, and the percentage of disability decreases.

Severe injuries account for 60% of patient deaths, with 90% of survivors partially or completely losing their ability to work. Nearly 100% of injuries result in further neurological and psychiatric disorders.

One of the most common complications of brain injuries is loss of skills. This leads to the inability to continue the profession.

Stages of closed brain injury:

Table 1.

Clinical form of UNHCR	Acute period	Intermediate period	Remote period
Concussion	Up to 2 weeks	2 months	2 years and more
Mild degree of brain damage	3 weeks	2 months	2 years and more
Moderate level of brain damage	4-5 weeks	4 months	2 years and more
Severe lat eating	6-8 weeks	6 months	2 years and more
Diffuse axonal injury of the brain	8-10 weeks	6 months	2 years and more
Brain contusion	3-10 weeks	6months	2 years and more

Complications of Lixterman brain injury fall into two groups according to the degree of change in brain function and morphological changes:

1. Undeveloped: local or diffuse atrophy of the brain, cerebral cortex scars, subarachnoid and intracranial cysts, aneurysms, cerebral bone defect, intracranial foreign body, cerebral nerve damage, etc.

2. Developing: hydrocephalus, basal cerebrospinal fluid, subdural hygroma, chronic subdural hematoma, porencephaly, cerebral arachnoiditis, epilepsy, parkinsonism, autonomic and vestibular dysfunction, arterial hypertension, cerebrovascular disorders.

Some authors cite asthenic, vegetative-dystonic, cerebrospinal hypertension (or hypertensive-hydrocephalus), parkinson's, oculostatic, vestibular, epileptiform and other syndromes from the clinical-syndromic point of view. M.M.Odinak and A.Y.Emelyanov cites the main posttraumatic neurological syndromes (vascular, vegetative-dystonic, liqurodynamic, focal, posttraumatic epilepsy, asthenic, psychoorganic). A.Y.Makarov divided brain complications into four groups:

I. According to the pathogenetic properties:

1. Direct complications: hemiparesis, aphasia, hemianopsia, vestibulopathy, skull defect, asthenic syndrome, etc.

2. Indirect complications - vegetative dystonia, posttraumatic arterial hypertension, early cerebral atherosclerosis, neuroendocrine syndromes, late forms of posttraumatic epilepsy, psychoorganic syndrome.

II. According to clinical forms and morphological changes:

- 1) tissue;
- 2)) liquor;
- 3) 3) vein;

III. According to the main dominant syndrome:

- 1) vegetative-dystonic;
- 2) vein;
- 3) liqurodynamics;
- 4) cerebral foci;
- 5) posttraumatic epilepsy;
- 6) posttraumatic narcolepsy;
- 7) vestibular;
- 8) neuroendocrine;
- 9) asthenic;
- 10) psychoorganic

IV. According to the nature of the disease:

1) underdeveloped-cerebral-cortical scars, bone defects and intracranial foreign bodies, cerebral-focal syndromes.

2) developing: cerebral atrophy, hydrocephalus, epilepsy, cochleovestibulopathy, vegetative dystonia, posttraumatic arterial hypertension, early cerebral

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atherosclerosis, psychoorganic syndrome, etc. In terms of medical expertise and medical rehabilitation, L.S.Gitkina and co-authors distinguish the following complications:

The first group includes deficit syndromes: neurological (muscle paresis, aphasia, sensory disturbances, vision, hearing impairment) and psychopathological (psychoorganic syndrome - intellectual-mnemonic decline of the person, critical mental disorder);

The second group includes neurotic disorders - asthenic, hypochondriac, depressive, neurasthenic, psychopathic;

The third group - vegetative-vascular disorders;

The fourth group - other neurological disorders (hypertensive, epileptic, vestibular, hyperkinetic).

Consequences of UNHCR:

1. Healing. The patient does not complain, and as a complete recovery, the patient continues his labor activities as usual.

2. Mild asthenia. There will be rapid fatigue, but memory and concentration will not decrease, and he will work in his previous job without any complaints.

3. Mean asymmetry. It is accompanied by a decrease in memory. The patient works in the previous workplace, only the work productivity decreases.

4. Rough asthenia. The patient quickly becomes physically and mentally exhausted. Memory and attention are impaired. Frequent headaches, discomfort. Group 3 corresponds to disability.

5. Significant impairment of mental and / or motor functions. The patient can serve himself. 2-group disabled.

6. Severe impairment of mental, motor, or visual functions. The patient needs the care of others. 1-group disabled.

7. Vegetative conditions.

8. Death.

III.Results

We studied patients with closed brain injury in three groups. We determined the percentage of complications at 6 months, up to 2 years, and two years after injury. Patients underwent clinical examination, ophthalmological examination, brain MRI, exoencephalography, electroencephalography, neuropsychological examination. A total of 70 patients were monitored.

Table 2. Percentage of post-traumatic complications by injury duration.

Complications	Up to 6 months	Up to 2 years	After 2 years
Headache	95%	58%	26%
Dizziness	75%	48%	35%
Arachnoid cyst	4.2%	4.2%	5.4%
Talvasa syndrome	2.8%	2.8%	2.8%
Sleep disorders	5.6%	2.8%	2.8%
Asthenia	2.8%	1.4%	2.8%
Asthenoneurotic syndrome	40%	35%	30%
Encephalopathy	2.8%	1.4%	34%
Intracranial hypertension	15%	2.8%	2.8%
Increased blood pressure	1.4%	1.4%	31.4%

Headaches are more common after closed brain injuries, mainly due to increased intracranial pressure in the 6 months after the injury, stress headaches after 6 months, and venous encephalopathies after 2 years. Headaches among law enforcement officers are also caused by stress / tension at work. There are also chronic headaches after a brain injury. A headache

that lasts more than 15 days and less than 3 months is called a chronic headache (according to the international classification of the Society for the Study of Headaches. Realfeld R.// BMG, 2004.-328.-119). The intensity of the headaches was studied on a special scale. Headaches averaged 70 points.

Table 3. Disability rate is a percentage of the severity of a brain injury.

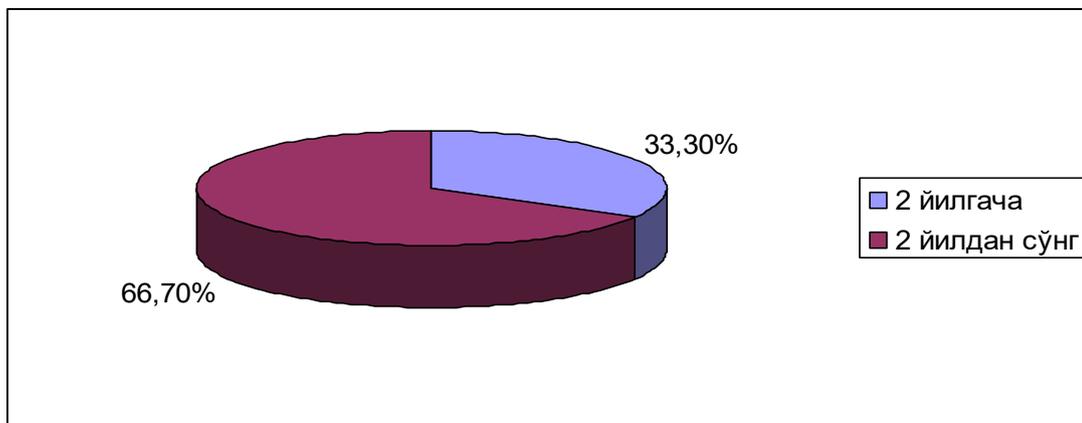
Injury type	1 group disability	2 group disability	3 group disability
The concussion is moderate	-	45%	1.4%
Concussion is severe	-	63%	-
Brain damage	30%	70%	-

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As can be seen from the table above, patients with closed brain injuries are generally recognized as a group 2 disability.

Figure 1. Percentage of disability depending on the year of injury.



As clinical and functional criteria for the diagnosis of disability in brain injuries, we took the following:

1. Severe persistent complications of skull injury - lower paraplegia, strongly expressed tetraparesis, a sharp decrease in muscle strength with minimal active movement in all joints of the legs (up to 1 point), inability to move independently, with minimal movement, vestibular-cerebral disorders, from the absence of all toes, amputation of both legs with hand cramps III degree, circulatory failure III degree, strongly expressed sensory disturbances (practical or

absolute blindness of a single or loving eye; visual acuity correction 0.03-0, visual field 0-10 degrees.

2. Stable but mild complications of brain injury - impaired strength and range of motion of the arms and legs, hyperkinesis, pronounced tone disorders, epileptic seizures, memory, pronounced decline in intelligence, lethargy.

3. Residual complications after concussion - organic damage to the nerves of the brain, postcommunication neurosis in a stable residual state after treatment, hormonal dysfunction, metabolic disorders, rare paroxysmal syndromes, vestibular seizures, rare epileptic seizures, sensory disturbances.

Table 3. Analysis of lost working days in connection with brain injuries.

	2018-year	2019-year
The total number of sick leaves opened	15	16
Days of general incapacity for work for a year	551	121
Average index	36.7	7.6

The table above shows that in 2018, a total of 15 patients were diagnosed with brain injuries, of which 4 patients had severe joint injuries and were incapacitated for an average of 100 days. On average, each patient with a brain injury lost 36.7 working days due to complications. In 2019, no serious brain injuries were observed. Therefore, complications were also relatively less, with 121 working days lost during the year. On average, each patient with a brain injury was declared incapacitated for 7.6 working days.

IV. Conclusion

1. The most common complications after closed brain injury were found to be headache, dizziness, intracranial hypertension, asthenoneurotic syndrome, asthenoneurotic syndrome, headache, dizziness for up to 6 months and up to 2 months. The main cause of headaches is tension headaches, intracranial hypertension for up to 6 months, and headaches after two years are caused by venous encephalopathies.

2. The rate of concussion is 45% in moderate, 63% in severe, 30% in group 1 and 70% in group 2. Primary disability identified in the last three years was 33.3% in the 2 years following brain injury and 66.7% after 2 years.

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3. The main cause of disability is post-traumatic encephalopathy, asthenoneurotic syndrome, psychopathic condition, and requires comprehensive conservative, psychological rehabilitation measures

aimed at preventing the occurrence of these complications in order to reduce the incidence of disability in the future.

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