

Acute Disturbance of Blood Circulation in The Head

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Abstract: Acute cerebrovascular accident, commonly known as stroke, is a medical emergency that occurs when blood flow to the brain is disrupted. This can lead to serious complications such as brain damage, disability and even death. Stroke has been a significant health problem throughout history, and researchers, physicians, and scientists have worked tirelessly to better understand and treat the condition. In the past, strokes were often misunderstood and misdiagnosed. Ancient civilizations such as the Egyptians and Greeks believed that strokes were caused by supernatural forces or evil spirits. It was only in the 17th century that the French physician Jacob Winslow discovered the connection between strokes and the brain. Winslow’s groundbreaking work laid the foundation for future research in the field of acute cerebrovascular disorders. In the 19th century, the German neurologist Karl Wernicke made significant contributions to the understanding of stroke. Wernicke identified a specific area in the brain responsible for language, now known as Wernicke’s area. He also discovered that damage to this area can lead to a condition called Wernicke’s aphasia, a language disorder that is common in stroke patients. Wernicke’s research helped pave the way for further research on the impact of stroke on cognitive function. Currently, the number of patients with acute cerebrovascular disease due to environmental and social factors is increasing. According to the data of the World Health Organization, this disease ranks third after cardiovascular and oncological diseases in terms of mortality rate. Incidence is from 1.5 to 7.4 (per 1000 population), death is 10-15 percent, disability is 30-35 percent. It can be seen that at present this issue is not only a medical problem, but it is becoming one of the social tasks.

Key words: ischemia, stroke, thrombus, embolism, hypertension, hemorrhagic, CT, MRI, UTT, thermoregulation.

A **stroke** is an acute disorder of cerebral blood circulation, which is characterized by the appearance of focal or general neurological symptoms. The disease ranks high in the list of the most observed diseases, such as cardiovascular and oncological diseases, in terms of the death rate. Hemorrhagic and ischemic strokes differ from each other. Hemorrhagic stroke is bleeding in the brain. Although stroke occurs suddenly in most people, the symptoms of the disease can be felt in advance. For example, hypertension and atherosclerosis cause a sudden

rush of blood to the brain, often when a person is excited. Hemorrhage destroys the brain tissue and disrupts the relevant functions, the person faints, vomits, the face turns red, breathes often deeply, often wheezing, the pulse is tense and rarefied, the temperature rises, urine and feces are not coming or passing out involuntarily. Ischemic stroke occurs as a result of thrombosis of cerebral vessels, which causes softening of brain tissue - cerebral infarction. After the initial symptoms such as headache and dizziness appear, the patient does not faint, his hands or feet twitch, then paresis or paralysis occurs, the ability to perceive is lost or reduced, and speech is impaired. The patient's color is pale, the pupils are narrow, the pulse is weak, but the temperature is normal. Broken functions can be restored in a few months.

Symptoms of a stroke:

1. Sudden weakness, paralysis of facial muscles (usually on one side of the body); insomnia
2. Loss of speech;
3. Visual impairment of one or both eyes;
4. Dizziness and acute headache;
5. Loss of balance and sudden gait disturbance.
6. Violation of respiratory function, violation of the work of the cardiovascular system.
7. Coma, neuropathies

The main causes of ischemic stroke:

Ischemic stroke is also called cerebral infarction. Ischemic stroke occurs mostly in the elderly after 45-50 years of age. This is the most common type, accounting for about 80% of cases. This type of stroke is a severe lack of blood circulation in a certain area of the brain. Cerebral vascular atherosclerosis, arterial hypotension, angina pectoris, myocardial infarction and other diseases. One of the main reasons is atherosclerosis of cerebral vessels. The disease occurs in the elderly, often in people with heart disease and increased blood clotting. A stroke sometimes occurs during sleep. When the patient wakes up, he feels weakness, weakness in arms and legs, dizziness. In this case, he is conscious and the skin is normal in color. Neurological symptoms develop within minutes or hours, depending on the location of the damaged vessel. When the common or internal carotid artery is blocked, vision is impaired on the side with thrombosis, and movement of arms and legs is impaired on the opposite side. Despite the fact that the death rate in ischemic stroke is low compared to cerebral hemorrhage, the disease is often severe. After the heart signs fall into a ritual, they go into a period of recovery, which lasts for months and years.

Clinical picture:

Acute ischemic stroke is accompanied by repeated strokes and cardiac complications depending on the age of the patient, the size of the pathological focus.

A few days before a stroke, patients experience headaches, weakness, dizziness, blurred vision, and tingling in the hands and feet. The symptoms get worse, and within a day, cramps in the arms and legs appear. The patient does not lose consciousness, he feels foggy in the head. Sometimes the course of the disease happens involuntarily. In moderate ischemic stroke, cerebral edema and focal symptoms are observed without signs of loss of consciousness. In case of severe stroke, loss of consciousness, cerebral swelling, trophic changes, and gross focal defects are distinguished by transient general brain symptoms.

After 10-14 days, the recovery period begins. First, leg and then hand movements are restored, sensitivity, speech, vision, hearing, and mental activity improve.

Hemorrhagic stroke:

Hemorrhagic stroke (intracerebral hematoma). This is a blood injury to a certain part of the brain. It accounts for about 10% of all cases. The main causative factors: heart disease, cerebral atherosclerosis, their combination, aneurysms of cerebral blood vessels, brain injuries, vasculitis, etc. There are two main causes of cerebral hemorrhage. First, there is a rupture of blood vessels, and secondly, there is a violation of the permeability of blood vessels, in which the blood vessels do not rupture.

Clinical picture:

Hemorrhagic stroke begins more often during the day, after the patient's mental state, after severe sadness, unpleasant news, and very strong excitement. The disease often begins suddenly, the patient loses consciousness and falls. The patient has a severe headache, reddening of the face, vomiting, increased body temperature, and falls into a state of sopor or coma. His general condition is very serious, his nose and lips are bruised, and his breathing is wheezing with a shallow sound. High blood pressure – 220/140 equal to or more than mercury column, pulse is accelerated. When examining the nervous system, meningeal signs (neck muscle tension, Kernig, Brudzinsky) are very developed, due to the presence of a tumor in the brain, the face is asymmetric, the nasolabial layer is smoothed, the corner of the mouth is lowered, the pupil is anisocoria, the pupil is bright. The response to the drug is weakened or lost. Loss of swallowing and speech, paralysis of the right or left side of the arm and leg, the foot is twisted outward, when the arms are raised, the paralyzed arm drops quickly like a “whiplash”, the same happens with the leg . Hypotonia with decreased muscle tone, decreased or absent tendon reflexes, pathological reflexes occur in the limbs. Sensation decreases or disappears. Since paralysis is always central, muscle tone gradually increases, tendon reflexes are high, speech is unclear – dysarthria, motor and sensory aphasias are observed. If blood is poured into the ventricles of the brain, then the condition of the patient is very serious – in a coma, vomiting, rapid heart rate, difficulty breathing and seizures, clonic and tonic tremors are observed.

Diagnosis and treatment of stroke:

In modern times, great advances in medical technology have revolutionized the diagnosis and treatment of acute cerebrovascular disorders. Imaging techniques such as MRI (magnetic resonance imaging) and CT (computed tomography) allow doctors to determine the location and extent of brain damage caused by a stroke. This information is crucial in determining the most appropriate course of treatment for each patient. In the field of acute cerebrovascular accident, there are many influential people who have done a lot of scientific work and they have contributed a lot to our understanding of this condition. One such person is Dr. Michael Chopp, a renowned neuroscientist who has devoted his career to studying the effects of stroke on the brain. Dr. Chopping's research has led to the development of new treatments aimed at reducing brain damage and improving recovery outcomes for stroke patients. In addition, leading neurosurgeon Dr. Thomas Wolfe has created innovative surgical techniques for the treatment of acute cerebral circulatory disorders. His expertise in minimally invasive procedures has helped improve patient outcomes and reduce the risk of complications associated with traditional open surgeries. Although significant progress has been made in the diagnosis and treatment of acute cerebrovascular disorders, challenges remain. One of the main challenges facing researchers is the lack of effective treatments for certain types of stroke,

such as hemorrhagic strokes, which are caused by ruptured blood vessels in the brain. Developing targeted therapies for these types of strokes is critical to improving patient outcomes and reducing the risk of long-term disability. In many cases, CT scans can differentiate between stroke and other types of “new” brain hemorrhages. With the help of MRI, it is possible to determine areas of ischemia, as well as to assess the spread of ischemic brain damage. MRT allows to distinguish hemorrhagic stroke from ischemic stroke, as well as to determine the exact location of the affected area and its size. In addition, MRI can rule out other diseases with similar symptoms. In ischemic stroke, a number of additional studies are conducted, including ultrasound examination of the neck and cerebral vessels, echocardiography, cerebral angiography. According to statistics, ischemic stroke is 8-9 times more common than hemorrhagic stroke. Treatment of stroke is aimed at improving the cardiovascular system, restoring respiratory function, reducing cerebral edema and preventing its recurrence and treating its complications.

Medicines that improve blood circulation in the brain – eufhyllin 2.4% 5-10 ml intravenously, magnesium sulfate 25% 5-10 ml intramuscularly with navacaine, papaverine 2% 2 ml, dibazol 1% 2-4 ml intramuscularly. If necessary, surgical treatment is performed. Normal brain function is supported by antioxidants, vitamins, and drugs to improve tissue metabolism. In hemorrhagic stroke, angioprotectors, vasoactive drugs were prescribed. The most effective method in the treatment of hemorrhagic stroke is surgical intervention.

Conclusion:

In conclusion, acute cerebrovascular accident is a complex and multifaceted medical condition that requires a comprehensive approach to diagnosis and treatment. Historical context, key figures, and advances in research and technology have all played a role in shaping our current understanding of the condition. By continuing to support research and innovation in this area, it may help improve outcomes for patients affected by acute cerebrovascular accidents and pave the way for future developments in treatment and prevention strategies. It is necessary to rest, work and eat properly, avoid mental and nervous tension, treat vascular diseases in time. Statistics show that the main reason for the severe form of stroke and its development are unhealthy habits such as physical inactivity and sitting too much. Those who live such a slow life are 2.5 times more likely to have a brain hemorrhage than those who regularly do physical education. Therefore, regular sports can prevent not only stroke, but also other diseases. Also, avoiding harmful habits (alcohol, tobacco products, drugs, etc.) is a factor in preventing the disease. Cardiovascular diseases are 2.5 times more common in people who smoke alcohol and tobacco compared to healthy people.

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