Atherosclerosis Occurs due to Loss of Arterial Blood

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ABSTRACT

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Aim

The problem of atherosclerosis cannot be solved for at least the last 100 years. On the contrary, in the 21st century, the incidence of atherosclerosis is increasing. This article describes a new hypothesis for this insidious disease. This hypothesis was first mentioned in articles [1,2].

Method

Study of numerous sources of information posted on the Internet. Discussion of proposed ideas at conferences, publication of original articles in Russian and English-language medical journals.

Results

The problem of human cardiovascular diseases is the number 1 problem for all mankind [3-5]. Coronary heart disease, angina, myocardial infarction, stroke, atherothrombosis and atherosclerosis - all these diseases of the cardiovascular system, which have already become household terms. According to who, these diseases are responsible for more than 50% of deaths in countries such as the United States, Germany and the United Kingdom. All these deaths are the result of the same process - atherosclerotic damage to the walls of blood vessels. For example, unexpected memory lapses and forgetfulness are the first symptoms and manifestations of developing atherosclerosis. Atherosclerosis over the past 30 years is getting younger right before your eyes.

Observations show that growths, plaques, fibrous tissue, and calcification of the walls are gradually formed in the arteries from the inner side. The smallest asymptomatic manifestations of atherosclerosis in the form of deposits on blood vessels can be seen already in six-year-old children. All this over time causes

an increase in the stiffness of the arteries and a narrowing of their internal diameter and consequently, the blood supply to the heart, brain and other organs deteriorates. A person has the first signs of atherosclerosis. For some reason, very often, in parallel with atherosclerosis, a deformity of the veins develops, but of the opposite type: expansion of the internal section and their tortuosity, varicose veins, thrombosis. Why are our blood vessels "clogged"? What causes atherosclerosis and how to counteract it-these are the most serious problems facing modern medicine. In other words, the question of this article can be formed even shorter: why does narrowing of the arteries and dilation of the veins develop? On the question of the etiology of atherosclerosis, there are quite a lot of different theories (namely, theories, not hypotheses!). We will not discuss them in detail here, but we will name the most common theories of atherosclerosis: lipid, parasitic, neuro-metabolic, emotional-stressful. Today, there are at least eight main scientific theories of atherogenesis, none of which has been strictly proved or disproved.

So, there are many theories of atherogenesis. In such cases in medical practice is a disease, do not hesitate to call polietiologicheskoe. This means that its occurrence depends on many different factors. On the other hand, some fairer scientists say specifically: "When there are many theories, it means that there is probably no correct theory at all. And this means that the cause of atherosclerosis is still unknown." However, since the impact of all these factors leads to the same result - atherosclerosis, we can assume that there may be some common link in their action. Without knowing its General link, it is impossible to find adequate measures to prevent an increase in arterial stiffness and narrowing of their internal diameter. The unsuccessful medical practice of

studying atherosclerosis for many years confirms this. You can only influence certain factors of atherogenesis, such as cholesterol in the blood, or install stents in the artery, or use medications containing nitric oxide (NO), or apply other treatment. But there are no great successes yet.

But from the point of view of the New theory of CVD, it turned out that there is such a common link! A common link is arteriovenous anastomoses (AVAs) or vascular shunts. It is through the AVA [6] that arterial blood in some periods of time quickly flows into the venous channel. What are these periods? It turned out that the discovery of AVA occurs imperceptibly for the patient during physical or psychological stress, especially with prolonged inactivity, with violations of the correct lifestyle. During stress, a person's blood pressure (BP) usually rises. In order not to damage the walls of the arteries with high blood PRESSURE in the human cardiovascular system, there are AVAs: AVAs open, blood flows and there is a decrease in blood PRESSURE [6]. These are a kind of "pressure valves" in the system. After a few seconds, the AVA is closed and the blood PRESSURE can rise again. This is how arterial pressure jumps occur. The figure for the articles [7,8] shows ECG graphs with blood PRESSURE jumps, which are obtained on the "Cardio code" device during the opening/closing of large AVAs.

Previously, a New theory of CVD [8] showed that when the Vena cava is overflowed with additional volumes of blood flowing through the AVA, a single or multiple run of the heart pulse along the vascular contour with the return of a mechanical wave to the myocardium is possible. This mechanical wave each time causes an extraordinary excitation of cardiomyocytes. Very often, this is how pathological tachycardia, some other types of arrhythmias and mechanical overload of the vascular system occur. Let me remind you that cardiomyocytes are equally well excited by both electrical and mechanical impulses. So, the leakage of arterial blood through open shunts reduces the volume of arterial and increases the volume of venous blood. An increase in the volume of venous blood after damage or stretching of the venous valves leads primarily to edema and varicose veins of the legs, and then other organs. Gradually, so-called heart failure develops.

With a healthy heart, the right and left ventricles exit due to the Frank-Starling law maintains the corresponding blood emissions, under normal conditions, these fractions are equal. But, with periodically opening AVA, with the help of organizational adjustments, there should be compensation for losses and the return of excess blood from the veins to the arteries by a small increase in blood flow through the small circle of blood circulation. In young people, restoring the balance of arterial and venous blood is painless, because physical activity (walking, running, swimming, gymnastics) contribute to this. In older people, problems are difficult to solve. The need to increase blood flow through the small circle of blood circulation in old age or in physical degradation of a

person sometimes leads to shortness of breath, asthma and other problems, which is why breathing exercises are so useful.

A constant lack of arterial blood can lead to spasms of the arteries throughout the body. Arterial blood flow may be disrupted in the hepatic or renal arteries. Because of this, there is a stagnation of blood in the liver or a small production of the daily volume of urine, or oliguria. In the latter case, diuretics cannot be used, because the course of the disease due to a lack of arterial blood can only be complicated. There are numerous facts that are confirmed in medical practice. Consider the body's adaptation to arterial blood loss. In response to regular blood leaks, the body each time begins to adapt to insufficient, i.e., to the volume of arterial blood that decreases over time and to the volume of venous blood that increases. Spasms of many arteries are forced to occur, because the volume of arterial blood and the internal volume of the entire arterial bed is always equal. These volumes cannot be unequal. This is the natural state of the arterial bed.

When the volume of arterial blood is normal, all the arteries are compressed and unclenched within optimal linear limits under the influence of the blood ejection from the left ventricle.

This condition of the arteries is the least energy consuming. This is exactly what happens in young and physically active people. But when the volume of blood drops due to leaks through the AVA, the stretching and compression of the artery walls occurs with reduced cross-sections of all the arteries. This means that the external layers of the arteries, consisting of a sufficiently rigid "adventitia" and elastic "media" are constantly in a suboptimal state, in a state of mechanical stress, or in a state of holding the optimal diameter of the arteries from their reduction.

When the volume of blood decreases, a force directed to the axis of the arteries, i.e. inside the vessel, begins to act on all layers of the artery walls. The force is applied to the endothelium. Currently, the inner layer of the media is in a stretched, "loose" state. The elastic force of the adventitia layer is directed to the expansion of the artery, and the force of negative pressure to the axis of the vessel, i.e. in the opposite direction. Therefore, it is possible to separate the epithelium from the elastic layer of the arteries. This is what often happens in the aorta: dissection and rupture of the aorta! Under the influence of a negative contribution to blood pressure (due to loss of arterial blood) and a decrease in the internal diameter of the arteries, the work of the smallest vessels feeding the arteries is disrupted. The smooth single-celled inner layer of the endothelium seems to be destroyed in some places due to a decrease in the total internal area of the arteries. The gaps between the endothelial cells are reduced to the limit, some cells crawl on top of each other. This creates the conditions for strengthening the internal walls of the arteries, so the development of atherosclerosis begins. Let me remind you that in young and healthy people, arterial blood is only about 15% of the total blood volume (in the elderly, the percentage

is less), the rest of the blood is in the veins, venous depots, tissues, and capillaries. Therefore, the cardiovascular system is so sensitive to arterial blood loss. The body's natural response is atherosclerosis.

At the beginning of the article, it was said that there are eight main theories of atherosclerosis in official medicine. In the author's opinion, each of these "theories" can only act as a factor that serves the described New theory of atherosclerosis to some extent. The reason is constant loss of arterial blood. Lipid factor-Yes, it is involved as a factor in filling the internal volume of arteries with solid structures to reduce and strengthen this volume (cholesterol, calcium, etc. are used), as well as for the growth of plaques in places where the endothelium is damaged. The parasitic factor is also involved, because there is necrosis and fibrosis mainly in the middle layer of the artery walls due to the deterioration of the "vessels of vessels", due to the forced reduction in the diameter of the arteries. Neuro-metabolic and emotional stress factors are the main factors, since one-time pressure spikes or hypertension in General contributes to an increase in blood PRESSURE, stretching of the artery walls occurs. An increase in blood PRESSURE leads to the opening of AV anastomoses. All this leads to many CVD, this is described in detail in the New Theory of CVD [9-17]. Directly, AVA leads to loss of arterial blood and, as we have already found out, to atherosclerosis.

A. How to Prevent Atherosclerosis?

Apparently, it is necessary to learn how to treat hypertension using natural methods, possibly in combination with medications. It is necessary to monitor the work of the AVA anastomoses, and it is possible to install artificial AVAs in some cases. Apparently, it is necessary to regularly replenish the volume of arterial blood (by transfusing your own purified venous blood) and thus prevent the development of atherosclerosis. Regular exercise, donation, vacuum cans, leeches, and Arabic hijama are useful, but with modern modifications. Breathing practices with breath delays on the exhalation are also useful for increasing CO₂ in the blood and for restoring the balance of arterial and venous blood volumes. The New Theory opens a large space for new developments in the prevention and treatment of CVD.

Conclusions

- a) The article substantiates a new mechanism of pathological arterial spasm of any caliber: it occurs because of arterial blood leaks through anastomoses.
- b) The main medical riddle, the riddle of atherosclerosis, is Revealed. Atherosclerosis occurs due to a trivial decrease in the volume of circulating arterial blood, due to the body's

attempts to keep the diameter of the artery from decreasing by increasing the hardness of the artery walls. The main cause of venous fullness and heart failure is also probably related to leaks of arterial blood into the venous pool.

- c) The Author expects that the information provided in the article will cause great discussion in the medical community. The longer this hypothesis is suppressed in the medical community, the more people will lose their health.

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