



Bleeding and its Types, Organization of Emergency Assistance in Bleeding

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Abstract: *This article provides an overview on bleeding and its types, the organization of emergency care in hemorrhage, and the volume and rate of bleeding will also depend on the size of the injured vessel, whether the wound is superficial or deep cut and crushed. Men are a little more intolerant of blood loss than women, which is related to menstruation in women. Hemorrhage in the elderly is more common, and comorbidities and infectious diseases that occur in them have been studied as changes in the weakening of the vascular walls as a result of blood bile poisoning.*

Keywords: *Circulatory area, hemorrhage, volume of bleeding, infectious diseases, increase in ambient temperature, internal bleeding.*

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Introduction

Hemorrhage is the flow of blood from the circulatory system to the tissues, the external environment, or a cavity. In severe injuries, death can occur due to excessive blood loss. The most life-threatening conditions in patients occur mainly due to excessive blood loss, i.e. due to a sharp decrease in total blood volume in the circulatory system and disruption of oxygen supply to the tissues.

Materials and Methods

A life-threatening condition occurs when the systolic pressure in the arteries drops below 70 mm Hg. Adults have about 4-5 liters of blood, depending on body weight. About 60% of it is in the blood vessels and 40% in the depot organs (liver, spleen, bone marrow). Occasionally, when bleeding occurs at high pressure and at high speed (400–600 ml), death can occur, even if the volume of blood lost is not very large. As the volume of blood, circulating in the arteries does not correspond to the volume of the circulatory system due to a sharp decrease in the volume of blood flowing to the heart during such bleeding. The size and rate of bleeding also depends on the size of the injured vessel, whether the wound is superficial or deep incision, and whether it is crushed. This is because more bleeding can occur from cut wounds than from crushed wounds. Men are a little more intolerant of blood loss than women, which is related to menstruation in women. Bleeding, which is extremely dangerous for human life, occurs in patients with blood diseases (hemophilia, leukemia, thrombocytopenia). Some medications (anticoagulants, aspirin) also play a role in the occurrence of bleeding. Some natural factors, such as high ambient temperature and low

atmospheric pressure, are also important. Different terms are used to refer to bleeding or the accumulation of blood somewhere. A small amount of blood that has accumulated under the skin is called a "petechiae" and the one under the mucous membrane is called a "purpura". The accumulation of blood in a large area under the skin or mucous membranes is called ecchymosis.

Hematoma, epistaxis, gastritis, gastroenteritis, hematomezia during mixed menstruation, hematuria, metrorrhagia, uterine bleeding »Is called. In addition, different terms are used depending on the accumulation of blood in an organ cavity: "hemopericardium" - a collection of blood in the heart sac, "hemathorax" - a collection of blood in the pleural cavity of the lungs, "hemoperitonium" - a collection of blood in the abdominal cavity. There are several practical types of bleeding. Anatomically, it is divided into arterial, venous, capillary and mixed hemorrhage depending on the type of organ. In arterial hemorrhage, the blood is pale red and erupts under great pressure, in the form of a fountain. When arteries are injured, regardless of their size, anemia can occur in the body in a short time and lead to death. The blood flowing through the veins is dark red in color and flows in a rhythmic and slow, "spring" manner. Bleeding due to a large vein injury can be a major risk to human life. When blood flows from the capillaries, a small amount of blood leaks out in the form of drops, evenly, over the entire surface of the wound.

Often, the blood flowing out of the capillaries stops on its own. When parenchymatous (porous) organs (liver, spleen, lungs) are injured, bleeding is very dangerous, because the blood vessels do not close on their own, the bleeding does not stop, and cases of rapid anemia occur. There are external, internal and latent clinical types of bleeding. In the external type of hemorrhage, the blood flowing out due to injury to the vascular wall flows out. In such cases, the injured person himself or his assistants can identify it without any difficulty. The process of internal bleeding is relatively complicated, and the bleeding can accumulate in the shells of any organ or go to the abdominal and thoracic cavities. Internal bleeding can be detected only at the onset of acute anemia and secondary complications. Bleeding from hollow organs is characterized by local and general changes, i.e., the outflow of blood over time and discoloration. For example, vomiting occurs in patients with bleeding from the stomach, and the blood that comes out is the color of coffee grounds. Internal bleeding is chronic, mainly causing acute anemia in the limbs, and it can be very difficult to diagnose without specific blood test results. The concepts of acute or chronic bleeding types are said only in relation to the rate of bleeding and the volume lost. The most dangerous type of bleeding in human life is acute hemorrhage. The human body is unable to adapt quickly to the large amount of blood loss lost in a short period of time, resulting in a relatively high mortality rate. In chronic bleeding, anemia develops slowly, as a result of which the human body gradually adapts to this new condition. Acute, small amounts of bleeding that occur in a short period of time are more dangerous than large amounts of bleeding that occur slowly.

A 30% decrease in hemoglobin in acute bleeding poses a significant risk. However, the general condition of patients who chronically lose 75–80% of hemoglobin may be relatively satisfactory. Clinical manifestations of bleeding Local and general symptomatic changes in bleeding occur. The general symptoms of bleeding are the same regardless of the type of bleeding. Specific (subjective) symptoms of bleeding are cold sweats, weakness, dizziness, shortness of breath, dry mouth. Symptoms may include ringing in the ears, blurred vision, and "ants crawling" on the body. The increase in the above symptoms and patient complaints is directly related to the speed and volume of bleeding. Large amounts of bleeding, acute anemia, i.e., hemorrhagic shock may occur at different severities of the clinic. It should be noted that in the early stages of acute bleeding, the centralization of the circulatory system of the human body keeps arterial pressure relatively stable. That is why we should pay attention to the tachycardia (acceleration of the heartbeat) that begins here, and consider it as the main and first sign of a large blood loss. Local signs (symptoms) of bleeding are directly related to where it is going. In external bleeding, blood is released into the

external environment. In such cases, when examining the patient, attention should be paid to the condition, direction and size of the bleeding wound. However, it is also important to pay attention to which vein, artery, vein, or mixed appearance the blood leaving the wound is. Determining the pulse of an artery by palpating the lower part of the wound with the fingers indicates the integrity of the artery. The imperceptibility of the pulse is indicative of its complete rupture, and the limbs in the lower part of the wound are frozen and pale in color. In such cases, gangrene (tissue death) of the organs (due to lack of oxygen and nutrients to the tissues) occurs. If one wall of the injured artery is damaged, in such cases, hematomas (a cavity where blood collects) are formed around the wound in the form of a stroke. When blood collects in the soft tissue and muscle space, pain, swelling, and limitation of limb movement are observed. When the surface of the formed hematoma is pressed with a finger, a symptom of its recovery is observed as soon as it enters the surface gently and retracts the finger. When blood collects in the joint cavity, hemothrosis, that is, flattening and swelling of the joint surface, is observed. Despite the pain and limited range of motion, it can be moved.

Results and Discussions

When blood collects in the knee joint, the free movement of the knee joint is observed. In such cases, an X-ray of the knee joint shows an increase in the distance between the two bones. Diagnosis of hematoma and hemothrosis is made on the basis of puncture of these joints, i.e., methods of sucking blood from the collected joints through a needle. Once a diagnosis of hemothrosis is made, the joints are first punctured and then immobilized, limiting movement in the joints. There are local and general symptomatic changes in bleeding. The general symptoms of bleeding are the same regardless of the type of bleeding.

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Diagnosis of hematoma and hemarthrosis is made on the basis of puncture of these joints, i.e. methods of sucking blood from the collected joints through a needle. Once a diagnosis of hemarthrosis is made, the joints are first punctured and then immobilized, limiting movement in the joints. Blood collected in the pleural cavity of the chest (hemothorax) is often caused by injury between the ribs or the thoracic arteries. Blood collected in the pleural cavity flows and collects in the angular sinuses. In such cases, the patient may not be bothered by the symptoms of the disease. Moderate amounts of blood collected in the pleural cavity can cause symptoms in the patient of heaviness and chest pain, shortness of breath. In cases where the pleural cavity is completely occupied by blood, i.e. total, the lungs are completely compressed, the heart and interstitial organs are pushed to opposite sides, and large changes in blood movement and respiration are observed. Clinical signs include shortness of breath, bruising, rapid and shallow pulse, decreased blood pressure. A faint sound when the chest is tapped with the fingers, auscultatory (heard through a phonendoscope) very faint breathing on the back of the chest. On chest X-ray examination, the chest is narrowed in exactly the same way, the heart and interstitial organs are tilted to one side or the other. In most cases, the diagnosis is confirmed by puncture of the pleural cavity. In the case of a small amount of blood collected, the pleural cavity is drained by repuncture or tarococentesis, if a large amount of blood is collected, an emergency revision is performed and a thoracotomy is performed to restore the integrity of the blood vessel. Excessive bleeding into the pleural cavity is accompanied by signs of acute anemia. Intra-abdominal bleeding often occurs when parenchymatous organs (liver and spleen) are injured and in extrauterine pregnancies, when the fallopian tubes rupture. In such cases, in addition to the general signs of bleeding, local signs are also important. During bleeding, the abdomen is limited in respiration, in the same plane as the chest. When the abdomen is palpated, its wall muscles are tense, and there is severe pain when pressed with the fingers (Shetkin-Blumberg sign).

Abdominal percussion (impenetrable when tapped with a fingertip, and resonant (tympanitis) in the upper part - gives the sound of an air-filled balloon. In the bleeding clinic, vomiting and nausea are also observed. develops. Blood flowing from injuries of the abdominal cavity pores never stops spontaneously, so emergency surgery is recommended in such cases. If the bleeding is not stopped, the patient may die due to hypoxia (lack of oxygen in the tissues), lack of blood volume in the circulatory system, and hemorrhagic shock. When too little blood is transfused into very sensitive organs, such as the brain, they can stop functioning and die. In the main area of the brain is the fourth ventricle, which houses the centers that control human life activities. Therefore, life-threatening cases occur when blood is transfused into this area. Blood that collects during diastole into the pericardium creates a large negative pressure inside the pericardium, prevents the expansion of the heart chambers, and death occurs due to cardiac tamponade. In some large vascular injuries (large veins of the neck) a state of air embolism occurs.

Adaptation of the organism to external and internal changes during bleeding The human body uses its internal capabilities to overcome the dangerous changes that occur during bleeding. In such cases, the organ is very sensitive to bleeding and is forced to act at the expense of other organs in order to preserve the tissue. Basically, such adaptation efforts are mild in cases of chronic bleeding, but in cases of extremely dangerous acute bleeding, such adaptation may not be achieved.

As a result, deaths can occur due to changes in organs and tissues. Even in ancient times, people were reported to have pressed or bandaged the wound surface to prevent bleeding when they received bodily injuries. Manuscripts that report that ancient Egyptian rulers pressed hot iron on the surface of a bleeding wound have survived to the present day. In the Middle Ages, drops of boiling oil were applied to the wound surface to stop bleeding. In the middle of the 19th century, an attempt was made to stop the bleeding by burning the wound with a Pakelen instrument. At present, these methods are performed using a diathermocoagulation device - an "electric knife". As early as the

third century BC, bonding methods began to be used in ancient Alexandria. Tsels and Galen used methods to suture a bleeding wound surface vein. But these methods were forgotten, and it was only in the sixteenth century that the suturing of bleeding vessels, mainly arteries, was restored by Ambroise Pare.

However, A. Pare suggested amputation of limbs during injuries. He recommended ligaments to reduce pain and prevent bleeding during amputations. In 1616, U. Garvey suggested placing ligaments in different positions to stop bleeding from arterial and venous blood vessels. In 1628, he published his scientific article on the human circulatory system. Only then did bundles begin to be widely used. Basically, these links were made in 1673 by F. Esmarch is common after offering a soft rubber band (tow). In the eighteenth century J.. Hunter suggested suturing the bleeding veins not from the wound area but from the part in the other vascular direction. In order to facilitate suturing of the veins, J. Pean created a clamping tool for the veins. In recent decades, dry cold and laser beams have been used as new methods to stop bleeding from a vein. Methods of stopping bleeding can be divided into temporary and complete cessation. Methods of temporary cessation of bleeding are performed, in most cases, by people who are not involved in medicine. Because of this, everyone must know such methods. Methods of temporary cessation of bleeding are useful in cases where it occurs unexpectedly. In some cases, attempts to stop the bleeding can lead to a complete cessation of bleeding due to the formation of a thrombus in the blood vessel. There are several ways to stop bleeding, but the use of these methods also depends on the condition of the injured vein and the location of the injury. In some cases, several methods can be used to stop the bleeding.

Conclusion

Bleeding from the superficial veins and small arteries can be stopped using compression bandages. A sterile round ball-shaped cotton swab is placed on the wound surface and tied tightly with several layers of gauze. In such cases, the permeability of the compressed vessels is lost and a thrombus forms. In addition, this method can be performed in conjunction with other methods, such as lifting the legs and arms. If the bleeding wound is located at the tip of the foot, in such cases it is possible to use methods of maximum flexion of the leg from the joint.

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