MINISTRY OF HEALTH OF THE REPUBLIC OF BELARUS
INSTITUTION OF EDUCATION
"GOMEL STATE MEDICAL UNIVERSITY"

Department of Pathological Anatomy

FORENSIC EXAMINATION OF SUBSTANTIAL EVIDENCE OF BIOLOGICAL ORIGIN.

Educational-methodical recommendation
for 5th year students of medical and physical science faculties
in the discipline "Forensic medicine"

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FORENSIC EXAMINATION OF SUBSTANTIAL EVIDENCE OF BIOLOGICAL ORIGIN.

(total lesson time - 6 academic hours).

RELEVANCE OF THE TOPIC

The knowledge acquired on this topic is necessary for a deeper understanding of the patterns of development, interrelation and interdependence of pathophysiological and pathomorphological changes. Familiarization with the basic methods for determining the presence, type, group, sex and other signs of objects of biological origin (blood, secretions, hair, muscles, bones, etc.) and the basic principles of the examination of the disputed origin of children (establishing relationship).

THE OBJECTIVES OF THE LESSON

To acquaint students with the basic methods for determining the presence, type, group, sex and other signs of objects of biological origin (blood, secretions, hair, muscles, bones, etc.). Show the basic principles of forensic cytological examination. To acquaint with the basic principles of the examination of the disputed origin of children (establishment of kinship).

TASKS

1. Give a general description of material evidence of biological origin.
2. To be able to give a definition of physical evidence, their characteristics and classification of blood traces.
3. To be able to distinguish the principles and possibilities of examination of saliva, hair, sperm and other biological objects.
4. Be able to explain the rules for the production of forensic biological, forensic histological, medico-forensic and forensic chemical examinations.
5. To be able to answer the questions that are resolved in the examination of material evidence of biological origin.
6. Be able to distinguish between normative documents governing the production of expert examinations of material evidence.

KEY LEARNING QUESTIONS

1. Normative documents governing the production of expert examinations of material evidence.
2. Laboratory research methods for the examination of corpses in cases of sudden death.
3. Rules for the production of forensic biological, forensic histological, medico-forensic and forensic chemical examinations in the Republic of Belarus.
4. Classification of traces of blood according to the form and mechanism of their formation.
5. Principles for determining the presence of blood, its sex, species and group affiliation.
6. Other issues to be resolved during the examination of blood.
7. Principles and possibilities of examination of sperm, saliva, hair and other biological objects, issues to be resolved during examination, basic research methods.
8. Characteristics of the concept of antigen secretion.
9. Forensic research in forensic medicine.

MATERIALS FOR CONTROL OF THE TOPIC ASSEMBLY

Terminology

Azoospermia is the complete absence of sperm in the semen.

Blood spatter is an accumulation of blood of varying volume and mass, formed under the influence of additional kinetic energy and its own mass of blood, which is less than the surface tension force along the perimeter of separation.

Material evidence is any object of material origin that can serve as objective evidence of an event or incident of a criminal or non-criminal nature.

Excretion is the ability to release blood antigens in the biological fluids of the human body (semen, urine, sweat, saliva, etc.).

Allocator - an individual in whose biological fluids, using quantitative methods, antigens of his own blood group are detected.

The hemagglutination reaction is an immunological reaction of adhesion and precipitation of erythrocytes as a result of the interaction of their antigenic structures with antibodies of complementary serum.

Genotypic identification is the establishment of the identity of biological objects based on DNA research.

DNA typing - determination of DNA profiles of biological fluids and tissues to identify their identity.

Identification is the establishment of the identity of an identifying object to a specific person according to the distinctive features that characterize it.

Immunofluorescence reaction is a method of qualitative and quantitative determination of antigens or antibodies in tissues or biological fluids. In this case, antibodies are marked (directly or indirectly) using a fluorescent dye, followed by examination of the drug in a luminescent microscope.

Inertial deformation of blood traces - a modification of blood traces under the influence of centrifugal and centripetal forces (when waving a bloody object).

Puddles of blood are large accumulations of blood resulting from heavy and / or prolonged bleeding due to gravity on non-absorbent horizontal or slightly sloping surfaces.

Smears are traces of blood that result from the dynamic contact of a blood-stained with a trace-sensing surface due to friction and absorption.

A non-excreting agent is an individual in whose biological fluids the antigens of his own blood group are detected only with the help of highly sensitive qualitative techniques.

Imprints are traces of blood formed as a result of static contact of a bloody object with a trace-sensing surface due to pressure and absorption.

Sexual X-chromatin - found only in the cells of the female body, formed by the maternal or paternal X-chromosome, which is in an inactive state, is located in the form of a lump at the inner surface of the karyolemma.

Sexual Y-chromatin is inherent only in male cells, formed by distal sections of the long arms of the Y-chromosome and is defined as a clearly contoured little body located in the nucleus and adjacent to the inner surface of the karyolemma.

Blood streaks are strip-like traces, uniform in width, formed under the influence of gravity and the phenomenon of wetting on steep surfaces and surfaces with a significant slope.

Traces of blood - any amount of blood found in the environment outside the body of a person or animal.

Traces of blood drops are spots formed as a result of free (without imparting additional acceleration) drops falling from a certain height. In this case, the source of bleeding is always located above the level of formation of this trace.

Florence test - a reaction for preliminary detection of sperm on various objects, based on the formation of light brown crystals when the semen interacts with a specific reagent.

Strassmann's method is a technique for establishing the amount of liquid blood in traces, based on determining the dry residue of blood in a spot with subsequent recalculation for liquid blood.

Barcode is a strictly individual sequence of amplified DNA fragments detected by electrophoresis with their subsequent visualization during the polymerase chain reaction.

DNA extraction is the process of isolation, extraction of DNA from biological objects.

Evidence.

Objects of biological origin and the procedure for research as material evidence.

When investigating crimes, great importance is attached to material evidence. According to Article 96 of the Code of Criminal Procedure of the Republic of Belarus, “objects that served as instruments and means of committing a crime, or retained traces of a crime, or were objects of criminal acts, as well as money and other valuables obtained by criminal means, and all other objects and documents that can serve as a means of detecting a crime, establishing the factual circumstances of a criminal case, identifying the perpetrators or refuting charges or mitigating the responsibility of the accused. "

However, many subjects from among the "dumb witnesses" can "speak" only after the appropriate research carried out by an expert, ie a specialist in a specific field of knowledge.

Only objects of biological origin are subject to forensic research: blood, hair, semen, saliva, sweat, nasal and vaginal discharge, urine, meconium, cheese-like lubricant, human milk and colostrum, fragments of various tissues and organs.

Investigation of objects of biological origin in specialized institutions of the State Committee for Economic Expertise of the Republic of Belarus. Research, in accordance with the "Rules of Forensic Medical Examination of Material Evidence", is carried out by doctors who have received special training.

A forensic examination of material evidence is carried out only on the basis of a decision of an investigator, an inquiry officer or a court ruling. Material evidence comes to the expert institution together with the decision of the investigator on the appointment of an expert examination.

The order lists all material evidence to be examined. They are delivered packed and sealed. At the end of the examination, the material evidence, together with the expert's opinion, shall be returned to the investigative or judicial authorities that ordered the examination.

The success of any expert research is determined not only by the experience and knowledge of the expert as a specialist, but also by the state of the object to be investigated. This fully applies to material evidence that must be seized, packed and sent for examination.

The discovery and seizure of various material evidence is carried out by the investigator, who can involve specialists in these actions. If the presence of objects of biological origin is assumed, a doctor is still a specialist.

Detection, seizure and direction of material evidence to forensic laboratories.

When identifying various traces and particles, it is necessary to take into account their location, depending on the type and nature of the incident, as well as their safety in various conditions of detention.

The fundamental basis for the correct seizure of material evidence is the complete need to preserve the found traces.

Special techniques and rules for the seizure of various material evidence with traces of blood and other biological objects have been developed and applied in practice.

Taking blood from the scene.

Pay attention to the possibility of keeping traces of blood in "hidden places": on the edges of pockets and sleeves of clothes, in the seams and under the lining; in floor crevices, under skirting boards, in recesses and joints of furniture pieces, door handles, water taps, instruments of crime, vehicles, etc.

The removal of traces similar to blood and objects-carriers (material free from traces of blood) is carried out after the completion of the investigative examination.

Carrier items (clothing, bedding, instruments of crime, etc.) with traces similar to blood are seized in their entirety. If it is impossible to direct the whole object with traces of blood, then you have to send parts of it. When sending parts of an object with traces of blood for examination, care must be taken to ensure that the expert has at his disposal a sufficient amount of material free of traces of blood (carrier object). The subject-carrier is necessary for the expert to produce control studies.

Blood is removed from paintings, statues of artistic value, from walls, furniture, etc., either by careful scraping or by washing off. Scraping must be done very carefully so as not to lose particles of the scraped blood. The blood is collected on a sheet of blank paper. Which is packaged like a pharmacy powder, on which they inscribe where, when and by whom the scraping was taken.

The blood is washed off by applying gauze or filter paper moistened with water or saline to the stain, pressed against the stain for a while or rubbing slightly until the blood dissolves and it is absorbed into the gauze or filter paper. In this case, together with the blood in the seized trace, there is a substance of which the object-carrier of the trace consists, the substance of a gauze swab, and the liquid with which it is moistened. To study the possible influence of these substances on the reactions used in the study of blood, it is necessary, together with the trace, to send samples of these substances to the laboratory in a package separate from the trace. Gauze swabs should be dried at room temperature away from heating appliances, then packaged.

Blood stains on the ground, sand and other similar objects are removed together with the soil to the full depth of blood soaking, carefully wrapped in paper or some other packaging

material. For control, the same areas of soil, not soaked in blood, taken next to the blood stain, are sent to the laboratory.

If blood is found in the snow, then it is taken with the least amount of snow on a gauze folded in several layers, located at the bottom of the plate. After that, the gauze is dried at room temperature and sent for research; for control, a piece of this gauze without blood is taken and packaged separately.

It must be remembered that if objects with blood stains are in a wet state, then they must be dried before being sent for research, otherwise they can rot, and the research will be ineffective.

Traces of blood, sperm, etc. are removed from the body with gauze swabs or adhesive tape slightly moistened with water. To remove the subungual contents, the part of the nail plate that is not associated with soft tissues is cut off with sharp scissors, the remnants of contamination are scraped off with a sharpened stick or removed onto adhesive tape.

Blood samples from living persons are taken from a finger or from a vein (4-5 ml.) In a medical institution, sent in a sealed Pasteur pipette.

Items such as glass, knife, ax, etc. placed between sheets of cardboard, plywood or other dense material, you can use boxes that are suitable for capacity, fixing material evidence in them in such a way as to exclude friction of traces against the walls. If the knife was found in the unfolded state, then it cannot be folded, and if it is folded, the blade is not removed from the slot of the handle.

During the initial examination of material evidence, the investigator finds and describes traces similar to blood. Types of blood traces: drop, splashes, drips, drips, puddles, soaking, blots, prints.

Establishing the presence of blood.

Preliminary determination of the presence of blood at the investigated object is a prerequisite for the subsequent determination of its species and group affiliation and the solution of other issues. The methods proposed for this purpose are divided into indicative (preliminary) and evidence-based.

Indicative (preliminary) methods. These methods do not prove, but only suggest the presence of blood in the object and are mainly used when examining the scene of the incident. They are not strictly specific, they can give a positive result with a number of substances not related to blood, however, a negative result is possible under some conditions and in the presence of blood.

Research in ultraviolet rays. Ultraviolet blood stains are usually dark brown and velvety in appearance. In cases where the coloring matter in the spot under the influence of external influences has turned into hematoporphyrin, such spots in ultraviolet rays have an orange-red color.

Objects examined in ultraviolet rays are placed on the site of a mercury-quartz lamp and examined in the dark. Gradually moving the platform, examine the entire surface of the object. Places suspicious in appearance to blood are, if possible, trimmed with threads and marked with a serial number, or a label is tied to them, on which the number is indicated. Such a study makes it possible, in some cases, to detect suspicious spots in areas that have been washed out.

Indicative chemical reactions. Such reactions are a test with hydrogen peroxide, determination of the peroxidase properties of blood, chemiluminescence.

The hydrogen peroxide test is based on the ability of blood to decompose hydrogen peroxide to form water and free oxygen. Hydrogen peroxide decomposes mainly under the action of catalase contained in the stroma of blood corpuscles. Prepare a 3% hydrogen peroxide solution. A drop of such a solution is applied to a suspicious spot with a glass rod or pipette and the appearance of foam or oxygen bubbles is observed. The formation of white foam or the appearance of oxygen bubbles is regarded as a positive result of the reaction. Hydrogen peroxide quickly decomposes in the light, so it is stored in a dark glass vessel and must be checked for activity before testing.

The reaction to the peroxidase properties of blood is based on the ability of blood, with the peroxidase contained in it, to carry oxygen from one substance to another. The reagents used consist of a mixture of substances that release and take oxygen. In the absence of blood or peroxidase, the reagent does not change its color. In the presence of blood or peroxidase, the process of oxygen transfer and oxidation of the oxygen receiving substance occurs. In this case, the reagent changes its color. The peroxidase reaction is usually named after the oxygen-receiving substance (indicator). The reaction with benzidine is widely used to detect blood peroxidase. A mixture of 1% alcohol solution of basic benzidine and 5% hydrogen peroxide solution is applied to the cotton wool. Cotton wool is applied to a stain that looks like blood.

A chemiluminescence reaction is recommended for detecting blood when examining poorly lit areas of the scene. 0.1 g of luminol and 0.5 g of sodium bicarbonate are introduced into 1 liter of distilled water. Perhydrol is added to this solution before use at the rate of 10 ml per 1 liter of solution. A few drops of the solution are applied to the suspicious area or sprayed with a solution from a spray bottle. If the reaction is positive, a flash of blue light lasting up to 65 seconds and the formation of a white foam are observed.

Evidence-based methods. Evidence-based methods of the blood origin of the stain are based on the detection of hemoglobin and its derivatives - hemochromogen and hematoporphyrin in it using spectral studies and microcrystalline reactions.

Sending material evidence for research.

After seizure, in the presence of attesting witnesses, and packaging, material evidence is sent to the forensic biological laboratory of the Department of Forensic Medical Examination with the following documents: accompanying relation (which indicates: to whom, for what purpose and what is sent); a resolution on the appointment of an expert examination, which sets out the circumstances of the case; issues to be resolved; a list of objects aimed at research with an indication of their belonging; the content of the testimony of witnesses, the accused, the victims regarding the origin of the material traces available on the objects; a copy of the protocol of the inspection of the scene of the incident, a copy of the conclusion of the forensic medical examination of the corpse, a copy of the examination of a living person, and other documents.

Blood test.

The most frequent object is blood and ranks first in the work of forensic biological departments.

Reasons for conducting a blood test and issues that are resolved during the examination.

Reasons for the examination of blood: in case of murder, sexual crimes, transport injury, poisoning, infanticide, etc.

When examining blood in the process of examination, the following issues can be resolved:

1. Are there traces of blood on the physical evidence?
2. Does the blood belong to a person or an animal?
3. Can the blood belong to a specific person (victim, suspect), or is it excluded from these people?
4. What is the sex of the blood?
5. Does the blood belong to an adult or a baby?
6. What area of the body is the bleeding from?
7. How old are blood stains?
8. What is the amount of blood on the evidence?

Establishing the presence of blood.

Often, due to contamination of the object or due to a change during washing, decay, with a long stain, the color of blood stains changes sharply and becomes green, yellow, etc. In these cases, to detect suspicious blood traces, they usually resort to examination in ultraviolet rays of a mercury-quartz lamp. Blood stains look dark velvety brown, blood stains that have changed under the influence of external factors give an orange glow, research in ultraviolet rays and chemical tests for blood enzymes are indicative methods of research. However, it is irrational to produce them in laboratory conditions, since they are not evidence-based, and the effect on the blood is not indifferent. At the scene, you can use these methods when there is a lot of blood.

Of the evidence-based methods for determining the presence of blood, absorption spectroscopy is used, based on the ability of hemoglobin and its derivatives to absorb light waves of a certain wave and form absorption spectra.

With significant effects on blood, emission spectral analysis is used (its presence is determined by the inorganic composition of blood).

Recently, various modifications of chromatography have been used to determine the presence of blood.

Species affiliation of blood.

It is established using the immunological method - precipitation reaction. Precipitating sera are used that can react only with a certain protein (human, cattle, small ruminants, dogs, cats, etc.). If a precipitate (sediment) was formed in the extract from a blood and serum stain precipitating human protein, then, therefore, there was human blood in the stain. The precipitation reaction can be carried out in a liquid medium and in agar (gel).

Determination of the origin of blood from a specific person.

Determination of the blood group by various systems: erythrocyte, serum, enzyme, inherited. The determination of the blood group is based on the agglutination reaction. This reaction makes it possible to exclude its origin from a certain person, but makes it possible to establish the belonging of blood to a certain person.

Recently, the method of genotyposcopy ("genomic identification", "DNA fingerprinting", "gene fingerprinting") has been successfully used. It was found that the composition of chromosomes (nuclear structure containing genes located in a linear sequence) includes a complex of a protein with deoxyribonucleic acid (DNA). A DNA molecule consists of two

strands, each of which is characterized by a specific sequence of purine and pyrimidine bases. Along the chain, like beads on a string, the bases are located: cytosine, guanine, adenine, thymine. The genetic properties of a chromosome are determined by the sequence in the arrangement of the bases. The reliability of the results is great and makes it possible to talk about the blood belonging to a certain person.

Determination of the sex of blood.

In the blood, sex differences are noted in the nuclei of leukocytes. In blood leukocytes there are sex-specific formations, some of which are inherent in the female genetic sex (X-chromatin), others - in the male (Y-chromatin). Studies are performed by the cytological method.

Blood belonging to an adult or an infant.

The baby's blood contains fetal (fetal) hemoglobin, which is resistant to the action of acids and alkalis. In addition, the baby's blood contains a special protein - fetoprotein.

Establishing the source of bleeding.

The main research method is morphological or cytological, providing for the determination in the blood traces of the cellular elements of a certain organ (respiratory tract, uterine mucosa, etc.). A method for determining the enzymatic activity of menstrual blood is used, recently a serological method for studying menstrual blood using antifibrinogen serums has appeared.

Determination of the age of blood stains.

The method is based on the conversion of hemoglobin under the influence of environmental factors into other compounds into methemoglobin, hematoporphyrin, etc., but this is only an approximate method.

A method for determining the activity of enzymes (cholinesterase, leucine aminopetidase, etc.) in blood, depending on the age of blood stains, has been proposed. For example, serum cholinesterase activity persists for 3-5 months.

Hair research.

The reasons and the main issues to be solved during the examination of the hair.

The need for a forensic medical examination of hair arises when it is found on a tool of injury, vehicles, on clothes and on the body of suspects and victims of various crimes and in other cases when hair can be material evidence in a case.

Usually, when examining hair, the following issues are resolved:

1. Are the objects sent for research hair?
2. Does the hair belong to a person or an animal? If to an animal, then to which one?
3. If the hair belongs to a person, then from which area of the body?
4. What is the group and type of hair?
5. Are there any damage or changes to the hair?
6. Is the hair delivered as material evidence similar to hair samples taken from a certain person (victim, suspect)?

Establishing the presence of hair.

In order to resolve these issues, various methods of studying hair are used, aimed at identifying the features of their morphological structure and other properties (physicochemical, biological, mechanical).

In the structure of the hair, a root and a shaft are distinguished. The root ends with a thickening called the hair follicle. Hair grows from the bulb located in the thickness of the skin. On the cross section of the hair shaft, three layers are distinguished: the outer layer is the cuticle, then the cortical layer, and the core or medulla is located in the center.

The belonging of the investigated object to hair is established by identifying one of the structural elements of the hair: cuticle or core.

Determination of the species of hair.

Differentiation of human and animal hair is based on the structural features of the cuticle, cortical layer and core. If it is not possible to differentiate the hair morphologically, then one of the methods of studying the species specificity of keratin proteins can be applied.

Determination of the group of hair.

It is carried out by identifying them in the rods, and in the presence of the bulb of antigens of the AB0 system.

Determination of the sex of the hair.

At the heart of the diagnosis of determining the sex of hair is the difference in the chromosome set of males and females in chromatin formations, which are detected by the cytological method.

Determination of the regional affiliation of the hair.

Taking into account the length, thickness, shape and cross-sectional area, the location of the pigment and a number of other properties, a judgment is made about the regional affiliation of the hair (from the head, eyebrows, eyelashes, pubis, etc .).

Determination of hair damage.

It is important to establish the method of hair separation (pulled out, fell out, mechanical action, etc.). Characteristic changes remain on the hair when exposed to flame, with gunshot injuries, exposure to blunt and sharp objects.

With the help of emission spectral analysis, changes in the macro- and microelemental composition of hair were established depending on the color, sex, age of a person, race, a number of diseases, the influence of dyes, professional contact with metals and other factors.

Determination of the similarity of hair.

The decision on whether the hair belongs to a particular person is carried out by means of comparative microscopy with the samples submitted for examination, and it is possible to draw a conclusion only about the similarity or difference of the hair.

The method of genotyposcopy ("gene fingerprinting") of hair in the solution of identification has great prospects.

Hair removal from the scene.

Hair is detected by close examination with the naked eye and using a magnifying glass. If damage is done to the scalp, you should carefully inspect the injury tool, as the victim's hair may remain on it.

In case of sexual crimes, the victim's hair can be on clothes, underwear, or the body of the offender.

Hair is removed from the object, either with your fingers or with tweezers with rubber or cork tips, and placed in a bag of clean paper, and then in an envelope, which is sealed and sealed.

In case of transport injuries, regardless of localization, it is necessary to remove hair samples from the head (frontal, parietal, occipital and temporal - right and left).

Study of human secretions.

When investigating crimes, invaluable assistance is provided by the study of various human secretions: sperm, saliva, sweat, vaginal contents, urine, feces (including meconium), colostrum, milk, etc.

In addition to the main question about the presence of certain secretions on material evidence, depending on their nature, the expert-biologist may be asked questions about the species, group and sex.

The presence of certain secretions is judged by the identification of their characteristic morphological elements (spermatozoa - in sperm spots, characteristic elements of milk, etc.), or by the results of special reactions (to sweat, urine, saliva).

The species identification is carried out by the detection of a species-specific protein, the group identification is by the identification of antigens of the AB0 system, the determination of the sex of the secretions by the cytological method.

The most frequent object of research is sperm, in the process of carrying out the examination it is necessary to resolve such issues as the question of the presence of sperm and the belonging of the sperm to a particular person.

Establishing the presence of sperm.

Semen traces as material evidence almost always appear in examinations carried out in connection with sexual crimes - rape, sodomy, sexual assault, etc. The study of traces suspicious of sperm always begins with establishing its presence on certain objects submitted for examination, and only after that its group affiliation is determined in order to resolve the issue of the possibility of its origin from a particular person.

Numerous so-calledative or preliminary tests for the presence of sperm (ultraviolet luminescence, microcrystalline and chemical reactions) have only limited auxiliary value and are practically not used.

Microscopic examination of the sperm is a medium containing morphological elements - spermatozoa, which are a characteristic and specific component of the seminal fluid, as well as prostate bodies that resemble starch grains. In semen, nonspecific elements can also be present in varying amounts - cells of cubic, columnar and squamous epithelium, leukocytes, lecithin grains, choline crystals, etc.

There are three main parts in the sperm: the head, neck and tail. When sperm dries out, as well as when some reagents, including detergents, are exposed to the stain, the tail of the sperm

can be destroyed. In such cases, the diagnosis of the seed origin of the spot is based on the detection of sperm heads with a cylindrical neck in it.

The most common preliminary test for establishing the seed nature of the studied spots is the reaction of delayed agglutination of erythrocytes by phytagglutinins of potato juice, developed by LO Barsegyants (1967). The principle of the reaction is that ascorbic acid (vitamin C) contained in potato juice is a kind of phytagglutinin that interacts with human erythrocytes, regardless of their antigenicity according to the AB0 system. Sperm testosterone, contained in the sperm and seminal plasma, actively blocks the agglutinating effect of vitamin C. In this regard, agglutination of the latter does not occur in the extract from the sperm spot after adding the potato extract and then the test erythrocytes. This reaction contributes to the identification of traces similar to semen, and is especially valuable in cases of its presence in a mixture with blood stains, when it cannot be detected either visually or with the help of ultraviolet rays. The response is not strictly sperm-specific, however; a false positive result can be observed in the presence of menstrual blood, breast milk, and in a number of other cases. Therefore, regardless of the positive (absence of agglutination) or negative (agglutination of erythrocytes) its result, it is necessary to solve the question of the presence or absence of sperm in the investigated spot by other evidence-based methods. and in a number of other cases. Therefore, regardless of the positive (absence of agglutination) or negative (agglutination of erythrocytes) its result, it is necessary to solve the question of the presence or absence of sperm in the investigated spot by other evidence-based methods. and in a number of other cases. Therefore, regardless of the positive (absence of agglutination) or negative (agglutination of erythrocytes) its result, it is necessary to solve the question of the presence or absence of sperm in the investigated spot by other evidence-based methods.

In addition to potato juice, the phytagglutination reaction can be carried out with seeds of leguminous plants, juice from onions, rose hips, etc., and in this case it is advisable to use the precipitation reaction according to O. Ouchterlony (1953).

The main evidence-based method for establishing the presence of sperm is morphological, based on the microscopic detection of sperm in the investigated spot.

Spermatozoa can be destroyed in sperm traces not only under the influence of the vaginal microflora, but also as a result of various external factors acting on the stain. In addition, in some pathological conditions (oligo- and azoospermia), spermatozoa are either completely absent in the traces of sperm, or are contained in a very small amount, which complicates their morphological study.

If sperm is not detected in a spot suspicious for semen, it is necessary to conduct a study by other evidence-based methods, which are described below.

D.D. Jalalov (1974) to establish the presence of sperm developed a method of chromatographic detection of the main biochemical components of sperm - choline and spermine, as well as acid phosphates and some amino acids. Although all these components are not detected strictly specific for sperm, they in their totality, while simultaneously being detected in the studied spots, play the role of an identifying feature of their seed origin.

As an auxiliary reaction when traces of sperm are found, V.I. Charny (1965) suggested a reaction to acidic prostate phosphatase.

Evidence-based methods for the presence of sperm are morphological studies - the detection of whole spermatozoa or their heads with microscopy, the establishment of a sperm-specific enzyme LDH, spermine and choline proteins, and a specific p30 protein.

Determination of group-specific antigens of the ABO system and assessment of research results is carried out with the obligatory consideration of the phenomenon of excretion. It is genetically related to antigens of the ABO system and lies in the fact that people secrete group antigens in different ways: some - intensively and they are called "excretors" or "strong excretors", others - weakly, their antigens are not found in the secretions at all, such people are referred to as "non-highlighters" or "weak highlighters".

To establish the category of allocation of specific individuals, samples of their saliva are sent to the forensic biological laboratory.

Currently, the genotyposcopy method is successfully used to identify a person's personality by sperm. With its help, it is possible to establish the origin of sperm from a specific person by mixed spots.

Examination of organs and tissues or their individual parts. The principles of determining the species, group, sex and even identification of a person's personality are the same as in the study of human blood and secretions.

The research carried out in the forensic biological department is drawn up in the form of a conclusion, in which answers to the questions posed are given. At the end of the investigation, the material evidence is carefully packed and returned together with the conclusion to the investigator or the court.

Establishing the presence of saliva.

In forensic medical expert practice, the presence of saliva has to be established on cigarette butts, mail envelopes, various dishes, on the clothes of the rapist and the victim in the event of a fight, on pieces of tissue if they are suspected of being used as a gag, and in a number of other cases.

Saliva spots on exhibits are usually whitish or yellowish in color. When irradiated with ultraviolet or visible blue, they fluoresce in a whitish-bluish color. In the presence of dirt and various impurities (for example, blood), saliva stains do not fluoresce.

Establishing the presence of saliva in spots is based on the identification of a digestive enzyme in them - amylase, which breaks down polysaccharides to simple sugars. Amylase is found not only in saliva, but also in other secretions and in human blood. However, the extremely high activity of amylase in saliva in comparison with that in the blood and in various secretions allows, subject to a certain research technique, to achieve full specificity of the reaction for detecting saliva in the spots under study.

Since the reaction to amylase usually requires a significant amount of material, when examining butts, preliminary determination of the presence of saliva is not produced, but the group antigens of the AB0 system are immediately identified. In all other cases, preliminary determination of the presence of saliva is mandatory. In particular, this applies to the study of postal envelopes, since when sealing them, not saliva can be used, but an additional layer of glue, which, by nonspecifically affecting serological reagents, can cause an erroneous interpretation of the results of determining the group belonging of saliva.

To establish the presence of saliva on the dishes, a piece of gauze moistened with isotonic sodium chloride solution is carefully wiped on the outside and inside of the edge of the glass, cup, etc. Gauze is examined for saliva in the usual way, only by adding 2 ml of starch solution to the reaction, taking into account the insignificant amount of saliva remaining on the dishes.

Establishing the presence of urine.

In forensic practice, it is sometimes necessary to establish the presence and group affiliation of urine. The object of the examination can be both the liquid in which the presence of urine is suspected, and the traces of urine left on the material evidence. Finding traces of urine on items of clothing found elsewhere can help identify the person to whom it belonged.

Urine contains both inorganic and organic substances. Of organic substances, the most informative for forensic medical examination are urea and creatinine, which are constantly contained in urine, on the identification of which the establishment of the presence of urine on the objects under study is based.

Urine stains fluoresce blue-blue when exposed to ultraviolet irradiation; when illuminated with visible blue light, they appear lighter than the surrounding background.

Establishing the presence of sweat.

In the practice of forensic medical examination, it is often necessary to establish persons who owned or who could use certain items of clothing, hats, etc. In these cases, traces of sweat are examined.

Inspection of garments in ultraviolet light is recommended as an indicative test for sweat traces, with sweat and grease stains often showing bluish fluorescence.

The test method for the presence of sweat is the reaction to the amino acid serine, which is contained in it in significant quantities. The reaction to serine is quite sensitive, and a positive result can be obtained by examining 5–10 mg of material with fresh and 15 mg with old spots of sweat. It is not recommended to introduce a large amount of material into the reaction, since in this case serine may be detected, which is not contained in sweat, but in blood or secretions, in which it is also present in small quantities. The detection of serine depends not only on the age of the formation of sweat traces, but also on its amount in the stain. Therefore, in each examination, the reaction to serine is carried out with different spot sizes, in order to obtain the most clear reaction results.

Serine can also be found in traces of blood mixed with sweat. Serine can detect sweat on clothes that have been soaked in a detergent or baking soda solution, but washing them with soap will completely remove sweat from the stain. Washing or wetting clothes with gasoline and kerosene, and ironing them with a hot iron does not interfere with the detection of serine. Determination of the presence of sweat in spots on physical evidence is always carried out in parallel with the examination of a known sweat spot.

Establishing the presence of vaginal discharge.

When examining material evidence presented for examination in connection with various sexual crimes, it is of great importance to find traces of vaginal discharge (vaginal secretion) on them, which in some cases can be a serious confirmation of the commission of a crime. Of particular importance is the establishment of an admixture of vaginal secretions in the traces of sperm found on material evidence, without which it is difficult for an expert, and sometimes impossible, to correctly assess the identification value of the group antigens of the AB0 system identified in them.

Inspection of the scene.

The concept of the scene.

The scene of the incident is understood to be a site or a room where an event that is subject to an investigative examination directly occurred.

Usually such an event is considered to be a crime (murder, rape, burglary, etc.). However, the concept of "incident" is broader than the concept of "crime", since the incident also includes suicide and accident.

According to the established investigative practice, the fact of the discovery of a human corpse is considered an incident. Therefore, the place of discovery of a corpse is always considered to be the scene of the incident, regardless of where the death of a given person occurred.

Legal regulation of the inspection of the scene, participants in the inspection.

Inspection of the scene and the corpse at the place of its discovery is an urgent investigative action.

Article 203. Grounds for the inspection

The reason for the inspection of the scene of the incident, corpse, terrain, premises, dwelling and other legal possession, objects and documents is the availability of sufficient data to believe that in the course of these investigative actions traces of a crime and other material objects may be found, other circumstances of importance have been clarified for a criminal case.

(as amended by the Law of the Republic of Belarus of 20.12.2007 N 297-3)

The second part of Article 203 is excluded. - Law of the Republic of Belarus of 20.12.2007 N 297-3.

Article 204. Procedure for conducting inspection

1. Inspection is carried out at the place of production of the investigative action. If it takes a long time to carry out the inspection or the inspection at the place of detection of traces of a crime and other material objects is significantly difficult, the objects must be seized, packed, sealed and delivered without damage to another convenient place for inspection.

2. When necessary, during the examination, scientific and technical means are used, measurements are taken, plans and diagrams are drawn up, casts and prints of traces are made. If possible, the traces themselves are removed along with the object or part of it.

3. Only those objects that may be related to a criminal case or materials are subject to confiscation. The seized objects are packed, sealed and signed by the investigator, the person conducting the inquiry, and the persons participating in the inspection. In the case of the bulkiness of the seized objects, which excludes the possibility of their packing and sealing, the seized objects must be described in detail in the protocol of the investigative action, indicating the individual signs that allow them to be identified, and fixed with the use of technical means of recording the progress and results of the investigative action at the place of detection.

(part three of Article 204 as amended by the Law of the Republic of Belarus dated 05.01.2016 N 356-3)

4. Everything found and removed during the inspection must be presented to the participants in the inspection.

5. The investigator, the person conducting the inquiry, has the right to involve a suspect, accused, victim, witness, and also a specialist to participate in the examination.

(as amended by the Law of the Republic of Belarus of 13.12.2011 N 325-3)

6. Persons participating in the examination have the right to draw the attention of the investigator, the person conducting the inquiry, to everything that, in their opinion, can help to clarify the circumstances of the consideration of applications and reports of crimes, the circumstances of the criminal case.

(as amended by the Laws of the Republic of Belarus dated 13.12.2011 N 325-3, dated 05.01.2015 N 241-3)

7. Inspection of a dwelling and other legal possession is carried out only with the consent of the owner or adults living in it or by order of the investigator, the body of inquiry with the sanction of the prosecutor or his deputy, which must be presented before the start of the inspection, and with the participation of attesting witnesses. If a dwelling place or other legal possession is the scene of an incident or storage of instruments and means of committing a crime, other items with traces of a crime, as well as substances and items for the storage of which criminal liability is provided, and their inspection is urgent, then it can be carried out by decree investigator, body of inquiry without the sanction of the prosecutor, followed by sending him within 24 hours of a message about the examination.

(as amended by the Law of the Republic of Belarus dated 05.01.2016 N 356-3)

8. When inspecting a dwelling and other legal possession, the presence of an adult living in it must be ensured. If it is impossible for him to be present, representatives of the organization that operates the housing stock, or the local executive and administrative body are invited. If it is impossible to ensure the presence of these persons during the inspection of a dwelling or other legal possession that is the scene of an incident or storage of instruments and means of committing a crime, other items with traces of a crime, it is allowed to conduct an inspection without the participation of these persons.

14. The seized instruments and means of committing a crime, objects, documents and valuables are presented to the persons involved, packed and sealed at the place of search or seizure, signed by the investigator, the person conducting the inquiry, and other persons involved.

(as amended by the Laws of the Republic of Belarus dated 13.12.2011 N 325-3, dated 05.01.2016 N 356-3)

“The investigator inspects the scene of the incident, terrain, premises, objects and documents in order to detect traces of a crime and other material evidence, to clarify the situation of the incident, as well as other circumstances that are important for the case.

In urgent cases, an inspection of the scene may be carried out prior to the initiation of a criminal case. In these cases, a criminal case is initiated after the inspection of the scene of the incident. Inspection of the scene is the only investigative action in respect of which the law makes an exception and allows it to be carried out before the initiation of a criminal case.

Article 226. Grounds for the appointment of an expert examination

1. Expertise shall be appointed in cases where special knowledge in science, technology, art or craft is required during the production of an inquiry or preliminary investigation.

Consultant Plus: note.

Instructions on the procedure for considering information, statements (messages) about the death (death) of citizens, going to the scene on the indicated facts and sending corpses for research was approved by the resolution of the Investigative Committee of the Republic of

Belarus, the Ministry of Internal Affairs of the Republic of Belarus, the Ministry of Health of the Republic of Belarus dated 25.09.2013 N 210/436/99.

2. Prior to the initiation of a criminal case, in accordance with Article 173 of this Code, it is allowed to appoint a forensic medical examination to determine the causes of death and the severity of bodily injury and other expert examinations, the conclusions of which may be of significant importance for resolving the issue of initiating a criminal case. Examinations related to the application of measures of procedural compulsion in relation to individuals cannot be appointed.

Article 227. Procedure for appointing an expert examination

1. Having found the appointment of an expert examination necessary, the investigator, the person conducting the inquiry, shall issue a resolution on this, which indicates the grounds for the appointment of the expert examination; the name of the expert or the name of the organization in which the examination is to be carried out; questions posed to the expert; materials made available to the expert. The decision of the investigator, the person conducting the inquiry, on the appointment of the expert examination is obligatory for execution by the persons, organizations to which it is addressed and in whose competence it is included.

(as amended by the Laws of the Republic of Belarus from 20.12.2007 N 297-3, from 13.12.2011 N 325-3)

2. The examination is carried out by specialists of expert institutions, other state or non-state organizations, or by other competent persons appointed by the investigator, the person conducting the inquiry.

(as amended by the Laws of the Republic of Belarus from 20.12.2007 N 297-3, from 13.12.2011 N 325-3)

3. Conclusions of departmental inspections, acts of audits, expert consultations available in a criminal case do not exclude the possibility of appointing an expert examination on the same issues.

4. Prior to sending the decision for execution, the investigator, the person conducting the inquiry, are obliged to familiarize the suspect, the accused with it, except for cases when the accused is on the wanted list, their legal representatives, as well as the victim and witness subject to expert examination and explain to them the rights established by Article 229 of this Code. A protocol is drawn up about this, which is signed by the investigator, the person conducting the inquiry, and the person familiar with the decision.

(as amended by the Laws of the Republic of Belarus from 05.05.2010 N 122-3, from 13.12.2011 N 325-3)

5. The decision on the appointment of a forensic psychiatric examination and the expert opinion are not announced to persons if their mental state makes it impossible.

6. The investigator, the person conducting the inquiry, has the right to be present during the examination.

(as amended by the Law of the Republic of Belarus of 13.12.2011 N 325-3)

Thus, an investigator, a specialist in forensic medicine, witnesses of at least two people, a forensic specialist, employees of the operational unit, a cynologist with a search dog are involved in the inspection of the scene. Other specialists may be involved, if necessary.

Stages of inspection of the scene.

There are many options, methods and techniques for inspecting the scene. It is determined by the nature, the area of the territory to be examined, the nature of the crime and other circumstances.

When examining the scene of an accident, it is necessary to observe the rule of two stages: static and dynamic. In the static stage, the movement of objects and their parts is excluded (the location of objects and traces is fixed), in the dynamic stage, objects and their parts can move for a more complete inspection.

At the very beginning, a general survey of the scene of the incident is made, and after drawing up a plan of the diagram, it is photographed (orientation and survey photography is a static part of the inspection).

In the dynamic stage, various objects and traces are examined, the order of movement in this case can be in a spiral from the center to the periphery (eccentric method) and from the periphery to the center (concentric). The "center" of the scene is a corpse. Everything related to the event must be identified and recorded in the protocol.

Additional and repeated inspections of the scene.

Distinguish between primary, additional and repeated inspection of the scene. The initial inspection of the scene is carried out immediately or as soon as possible after receiving a report on the commission of a crime.

An additional inspection is appointed when it is established during the investigation that individual objects at the scene of the incident were not examined or not inspected in sufficient detail. Re-examination is appointed when the initial examination took place in unfavorable conditions or was carried out poorly, etc.

Upon arrival at the scene, the forensic physician must establish whether death has indeed occurred. In the presence of basic signs of life (breathing, palpitations), it provides available resuscitation measures (artificial respiration, chest compressions) until the arrival of an ambulance doctor.

Tasks of the doctor when examining a corpse.

When examining the scene of the incident, a specialist in forensic medicine must:

- establish the fact of death;
- determine the prescription of death;
- to establish the presence, localization, nature and mechanism of damage, and other data relevant to investigative actions;
- advises the investigator on issues related to the external examination of the corpse at the place of its discovery and the subsequent conduct of a forensic medical examination;
- assists the investigator in detecting traces similar to blood, semen or other secretions of a person; hair, various substances, objects, tools and other objects;
- facilitates their removal;
- draws the attention of the investigator to all the features that are relevant for the given case;
- explains what it does.

The results of the inspection of the scene and the corpse, the time of the beginning and the end of the examination of the corpse, are recorded in the protocol of the inspection of the scene, drawn up by the investigator. make comments and additions to be included in the protocol. The protocol, after reading, is signed by the participants in the inspection of the scene.

Equipping a doctor to examine the scene of the incident.

For visits to the scene of an incident, a specialist in forensic medicine must have: thermometers (mercury, electrothermometers); dynamometer for pressing on cadaveric spots; metal rod to determine the presence of an ideomuscular tumor; a device for electrical stimulation of skeletal muscles; neurological hammer; solution of pilocarpine and atropine; syringe and needles; chronometer; paper and plastic bags, bottles, boxes and other types of packaging; slides; rubber gloves; special protective clothing; disinfectant solutions.

The sequence of examination of the corpse.

A specialist in forensic medicine, when examining a corpse at the scene of the incident, is obliged to establish and inform the investigator for entry into the protocol:

— location and posture of the corpse;

— clothing and footwear of the corpse, its condition and damage, the presence of traces similar to blood and discharge;

— general information about the corpse (gender, age, physique, skin color, special signs - scars, tattoos, physical disabilities);

— the presence and severity of early cadaveric changes, indicating the time of their study; the degree of cooling of areas of the body open and closed by clothing (to the touch), the temperature in the rectum and the surrounding air;

— the presence, location of cadaveric spots, their color, the degree of restoration of the original color of cadaveric spots under dosed pressure;

— severity of rigor mortis in various muscle groups;

— signs of tissue experience (the reaction of striated muscles to mechanical stress, the nature of the pupillary reaction to the introduction of chemicals - pilocarpine and atropine);

— the presence of late cadaveric changes, the degree of their severity and localization;

— the presence of damage (localization, shape, size, nature of the edges, and other features;

— the presence on or near the corpse of traces similar to blood or other traces, their nature, location, direction, shape, their distance from the corpse, from surrounding objects; when located on a wall, tree, etc. - the distance from the floor, soil;

— is there a smell from the mouth (alcohol, etc.) when pressing on the chest;

— signs of possible independent movement of the victim after injury or movement of a corpse;

— the presence of insects on the corpse and clothing, their character, the places of greatest accumulation.

Features of the examination of the corpse at the scene of various types of death.

An important requirement for the examination of corpses and places of their discovery is a differentiated approach to examination in cases of various types of death.

In case of damage with blunt and sharp hard objects.

At the scene of the incident, near the corpse, various objects, tools, weapons that have caused damage can be found. Discovered items are carefully examined in order to identify traces of blood, hair, tissue fibers, etc.

The detection of traces of blood and their relationship with the nature and extent of injuries on the corpse often play a decisive role in reconstructing the circumstances of the trauma. The damage to clothing and a corpse is described in detail. It is prohibited to remove objects fixed in the wound.

The correspondence of the damage to the clothing to the damage to the skin is noted.

Pay attention to the presence or absence of injuries on the hands of the corpse, characteristic of struggle or self-defense.

When falling from a height.

When falling from a height, the corpse and the place of its discovery and the place from which the fall occurred are subject to inspection. It is necessary to fix the posture of the corpse and its location relative to the object from which it could fall.

When examining a corpse, one should look for injuries that are not characteristic of a fall from a height and caused by an unauthorized hand (stab-cut, cut wounds, etc.). Damage characteristic of a fall from a height is described.

When examining the place from which the fall occurred, one should look for signs of a struggle (overturned furniture, scraps of clothing, traces of blood, etc.).

In case of a car injury...

In addition to examining the corpse, a car, a section of the road, and objects with which a collision occurred is subject to a thorough examination.

When examining a corpse, it is necessary to accurately fix its position relative to the surrounding objects and in relation to the car and its tracks. Description of clothing and footwear, presence and fixation of traces - wheel tread pattern, paint, glass shards, etc. Description of injuries on a corpse, especially traces characteristic of an automobile injury.

When inspecting the car, they note the presence of traces of interaction with the victim's body (scratches, dents, broken headlights, etc.) and the presence of traces of biological origin (blood, hair, skin particles, brain matter, etc.) in the area of the indicated damage.

In case of rail injury.

It is necessary to fix the posture and position of the corpse in relation to the railway track (rails) and the embankment. Description of damage and overlays on clothing (lubricants, antiseptics, ballast particles, etc.).

The damage is described in detail, contamination of the edges, skin around the damage with lubricants and other substances is noted.

When examining a section of a railway track, attention is paid to traces of body dragging, detection of traces of biological origin (blood, pieces of soft tissue, etc.) on the track, sleepers, rails. Railway transport (diesel locomotive, wagons, etc.) is examined in detail.

In a plane crash.

Inspection of the scene of the incident, corpses and their parts presents particular difficulties and, as a rule, is carried out by a team of experts. During the inspection, the exact location and relative position of all detected objects (corpses and their remains, aircraft wreckage, clothing) are recorded. Determine the belonging of individual parts of the corpse, their anatomical names, traces of the action of the flame. All detected objects are marked and placed in separate packages. Unseparated corpses are examined and described according to the usual rules.

For gunshot injuries and explosive injury.

Weapons with fingerprints may be found at the scene of the incident, therefore, it is necessary to remove the weapon with rubber gloves. The smell of burnt gunpowder can be felt from the barrel bore, and traces of blood, particles of brain matter, hair, etc. can be detected at the muzzle end of the weapon, both outside and inside. In such cases, it is advisable to put a paper cap on the muzzle. Bullets, casings, shot, wads, etc. found at the scene are seized as important material evidence. It is necessary to fix weapons and other physical evidence in relation to the corpse and other fixed landmarks. Attention is drawn to the number of gunshot injuries to clothing and body, their correspondence to each other, signs of input and output gunshot injuries; for traces of a close shot, muzzle prints of the weapon; soot on the hands of the fingers; the presence of bullets, shot, wads, etc. in clothes.

With an explosive injury.

When examining the scene of the incident, the investigator must establish the fact of the explosion, find the remains of the explosive device, the place (epicenter of the explosion) and its consequences. Pay attention to the multiplicity and massiveness of damage to the body and surrounding objects. It is necessary to fix the exact position of the corpse (corpses) and its torn off parts, not only in relation to fixed landmarks, but also in relation to the explosive funnel (the epicenter of the explosion).

All fragments found at the scene, parts of an exploded device, explosive particles and other foreign objects must be removed.

When hanging.

The position of the corpse should be noted; when fully hanging - measure the distance from the floor (ground) to the feet and the place of attachment of the free end of the loop and at the place of its attachment. The nature of the loop, its localization on the neck, the type of loop, the number of turns, the material, the nature of the knots, etc. are described in detail. It is better not to remove the noose from the scene, but send the corpse to the morgue directly with it. It is necessary to check for the presence of objects that were used as a stand, and traces of feet or shoes on them; the condition of the clothes on the corpse; the presence of traces of struggle and self-defense on the clothes and body of the corpse; localization of cadaveric spots and their correspondence to the posture of the corpse.

When drowning.

When examining clothes and shoes extracted from a liquid (water), the degree of their moisture is noted. Contamination of clothes with oil, fuel oil, the presence of any heavy objects (stones, bricks, etc.) in the pockets is noted. The external signs of drowning and signs of the presence of a corpse in the water are described in detail. In the presence of algae, indicate the degree of their distribution over the surface of the body, type, thickness, color, consistency, strength of the bond with the skin. Damage to a corpse is described in the usual order.

When exposed to high temperature.

When examining the corpse, traces of burns are revealed, pay attention to the posture of the corpse. When describing clothes, they note the complete absence or partial preservation of it, the presence of a specific smell from clothes (gasoline, kerosene, etc.). When examining the corpse, they pay attention to the presence or absence of soot on the face, the condition of the hair on the head (presence of scorching, color, features); if a corpse is suspected of being burned, several ash samples are taken.

When exposed to low temperatures.

Pay attention to the posture of the corpse, the condition of the clothes, the presence of signs of frostbite in open areas of the skin. When a corpse is moved under it, a “bed” from snow melting under the influence of body heat can be found. Damage is described.

In case of poisoning.

At the scene of the accident, the remains of food, drink, medicine, secretions of the human body, in which poisons can be found, can be found. Pay attention to the presence of specific odors in the room or from a corpse. When examining a corpse, they describe the features of cadaveric changes, the color of the skin, the state of the pupils, the state of the oral mucosa, the presence of traces from injections. All items and objects in which the presence of poison is suspected must be removed from the scene.

The main questions that a specialist doctor decides on the scene.

Based on the results of an external examination of the corpse at the place of its discovery, a specialist in the field of forensic medicine can orally answer the following questions to the investigator:

1. What is the approximate prescription of death?
2. Has the position of the corpse changed after death?
3. Is there any damage to the corpse and presumably by what tool it was inflicted?
4. Is the place where the body was found the place where the damage revealed during the examination of the body was inflicted?
5. Are there traces similar to blood, discharge, etc. on the corpse or at the place of its discovery?
6. What is the possible cause of death?

The responses of a specialist in forensic medicine based on external examination alone are preliminary and conjectural and should not be construed as an expert opinion.

In carrying out his duties at the scene of an incident, a forensic doctor is not entitled to:

— carry out research that violates the integrity of the organs and tissues of the corpse (cut, disconnect, etc.);

— use probes to study wound channels;

— to introduce any substances onto the surface or into the cavities and damage the corpse;

— perform other actions that change the corpse and the damage on it;

— to act on traces of biological origin in such a way that this could lead to their loss.

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