

Stagant

**MINISTRY OF HEALTH PROTECTION OF UKRAINE
ODESSA NATIONAL MEDICAL UNIVERSITY**

Faculty Medical number 1

Chair Histology, cytology, embryology and pathological morphology with
a course in forensic medicine

I APPROVE



Vice-rector for scientific and pedagogical work
Eduard BURYACHKIVSKY

" _____ " _____ 2023

**METHODOLOGICAL DEVELOPMENT
TO THE INDEPENDENT WORK OF APPLICANTS OF HIGHER
EDUCATION
ON SECTION-BIOPSY DIAGNOSTICS**

Faculty, course Medical, course V

Academic discipline "Sectional Biopsy Diagnostics"
ACADEMIC DISCIPLINE

Approved:

Meeting of the department of histology, cytology, embryology and
pathological morphology with a course of forensic medicine
Odessa National Medical University

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No	Topic.	N. of hours
1.	Topic 1: History of the development of pathology service in Ukraine. Preparation for the seminar session 1.	6
2.	Topic 2. Method of examination of biopsy, surgical material and aftermath. Rules of research and procedure for processing documentation for the study of morphological material. Preparation for seminar session 2.	6
3.	Topic 3. Rules for taking and processing material obtained from various organs and pathological formations. Preparation for seminar session 2-3.	6
4.	Topic 4. Biological death - definition, causes and timing of development in the natural course of the disease. Early and late signs of biological death and death of the patient after resuscitation. Morphological characteristics of cadaveric changes. Preparation for the seminar session 9.	4
5.	Topic 5. The International Classification of Diseases (ICD) is a regulatory document that ensures the unity of methodological approaches and international verification of materials. ICD 10th and 11th revision. Work with the International Classification of Diseases, X revision (1995) according to the pathological diagnosis of autopsy. Preparation for the seminar session 9.	4
6.	Topic 6. Procedure for the appointment and conduct of pathological autopsies of corpses. General provisions. Procedure for conducting autopsies of corpses of persons who died in the hospital. The procedure for autopsies of corpses of persons who died outside the hospital. The procedure for autopsies of newborns and stillborns, children's corpses. Preparation for the seminar session 4.	6
7.	Topic 7. Methods of pathological autopsy of a corpse. Features of autopsy of a newborn, stillborn or fetus. Preparation for the seminar session 4.	4
8.	Topic 8: Pathomorphological basis of resuscitation and intensive care, their relationship with forensic assessment of changes in organs and tissues. Preparation for the seminar session 10.	6
9.	Topic 9: Preparation and holding of a meeting of the medical control commission, the commission for the study of fatalities and the clinical anatomical conference. Deontological and ethical aspects in pathology practice. Preparation for the seminar session 14.	6
10.	Topic 10. The procedure for reviewing medical records. Preparation for the seminar session 14.	6
11.	Topic 11. Preparation for the test lesson. Preparation for the seminar session 15.	6
	Together	60

Topic 1 : "History of the development of the pathology service in Ukraine."

Purpose: To get acquainted with the main stages of the development of the pathology service. Knowledge of the topic is necessary in the practical activity of a doctor to understand the development, formation of the service, as well as to establish legal decisions, relationships with other services of health care institutions of Ukraine. Familiarize yourself with and know the rules for maintaining medical documentation of the pathology service and preserving material.

Basic concepts: pathological anatomy, pathology department, pathology bureau, pathology laboratory.

Plan

1. Theoretical questions:

Pathological anatomy is one of the most important fundamental disciplines in the system of higher medical education. It is an integral part of pathology (from the Greek *Pathos* — disease, suffering) is a science that studies the regularities of the occurrence and development of diseases. Pathological anatomy studies the material (morphological) substrate of the disease, its structural foundations.

Studying the subject is based on two principles:

- the relationship between structure and function — this means that in pathology there is no change in structure without a change in function, just as, on the contrary, there are no functional disorders without structural changes;
- a clinical and anatomical principle that reflects the main direction of development of modern pathological anatomy.

Pathological anatomy consists of two parts: general - studies general pathological processes (dystrophy, necrosis, inflammation, etc.) and special - studies the morphology of processes that make up the structural basis of diseases. In combination with each other, these processes acquire a new quality, making up the material content of various syndromes and diseases.

Problems of pathological anatomy:

Pathological anatomy is essentially a clinical discipline that solves the following problems:

- study of etiology — the causes of pathological processes and diseases;
- study of pathogenesis — mechanisms of development of pathological processes and diseases;
- study of pathogenesis — mechanisms of development of pathological processes and diseases
- study of morphogenesis — the structural basis of the pathogenesis of diseases and pathological processes;
- study of sanogenesis — the structural foundations of the body's recovery processes;
- study of thanatogenesis — mechanisms of death;
- study of pathomorphosis — clinical and morphological signs of the disease that occur during treatment (therapeutic pathomorphosis);
- development of iatrogenic problems — the study of diseases and their complications, which arose as a result of medical manipulations and medical errors;
- development of diagnostic problems - refers to various aspects of teaching about diagnosis.

Levels of research on the structural basis of diseases.

Pathological processes and diseases are studied at different levels of the structural and functional organization of living matter:

- organismic level — makes it possible to observe the disease of a whole organism
- organ level — involves the study of pathological processes in organs
- systemic level — involves the study of pathological processes within a separate system (blood system, cardiovascular system, connective tissue system, etc.)

- tissue level — the study of pathological processes in various tissues
- cellular level — study of cells and intercellular substance using a light microscope
- subcellular level — study of the ultrastructural pathology of the cell and the intercellular environment
- molecular level — study of changes in the fine structure of protein macromolecules, nucleic acids, etc.

Material (object) and research methods.

The material for the study of pathological anatomy is obtained during the autopsy of dead patients, surgical interventions, biopsies, and the setting of the experiment. Autopsy (necropsy, autopsy, dissection) is one of the classic research methods in pathological anatomy. Thanks to this method, the clinical diagnosis is verified, possible errors in its formulation are revealed (various degrees of divergence between clinical and pathological diagnoses), the cause of the patient's death, features of the course of diseases, the effectiveness of their treatment are established, statistics of mortality, lethality, etc. are developed.

Biopsy (from the Greek *bios* — life, *opsis* — sight) is a method of intravital examination of a piece of organ or tissue. Thanks to the biopsy, the clinical diagnosis is verified during the patient's lifetime, it becomes possible to study the dynamics of the pathological process at different levels of the structural organization of living matter, the expediency and adequacy of clinical methods of examination and treatment of the patient, the prognosis of the disease and the possible consequences of the adverse effects of drugs. Under these conditions, a pathologist becomes a clinical pathologist, a full participant in the diagnostic and treatment process.

Thanks to the use of modern methods of morphological analysis, conducting biopsies makes it possible to detect initial (initial) changes in cells and tissues, which is important both for timely diagnosis and for adequate therapeutic or surgical tactics. In other words, at the current stage of development, pathological anatomy has already

gone beyond the limits of the dissection hall and acquires a new meaning — it becomes the clinical morphology of a sick person.

The study of postoperative material (organs and tissues removed as a result of surgical intervention) makes it possible to study the morphology of diseases at various stages of its development.

The experimental method is necessary to study the mechanism of disease development (pathogenesis), the dynamics of structural changes underlying it (morphogenesis), the action of certain drugs, and the approbation of various methods of surgical interventions. A certain limitation in the use of this method is explained by the fact that it is impossible to obtain models of some human diseases in an experiment (ulcer disease of the stomach and duodenum, rheumatism, typhoid) or the changes observed in the experiment are not adequate to those found in human pathology (atherosclerosis, hypertension, etc.).

In the country and many other countries, the most widespread method of autopsy according to Shorom is the method of single evisceration of organs.

Stages of development of pathological anatomy.

Pathological anatomy (in the modern interpretation - "pathomorphology") is the basis of theoretical and practical medicine.

In its development, it passed through three main stages: macroscopic, microscopic and ultrastructural. Its distinction as an independent scientific discipline and medical specialty is associated with the name of K. Rokytansky, who in 1844 founded the department of pathological anatomy at the University of Vienna (Austria) and created one of the world's largest pathological anatomical museums. He is a representative of the macroscopic period in the development of pathological anatomy and the founder of the humoral scientific direction in the development of medicine.

Among other outstanding scientists, R. Virkhov should be mentioned. He is a

representative of the second (microscopic) period of the development of pathological anatomy and the founder of the theory of cellular pathology, who gave priority in the development of medicine to morphological changes in the human body. The emergence of the third period from the 50s of the XX century. marks the successes of pathological anatomy in the study of human ultrastructural pathology. Representatives of this period are A. I. Strukov, V. V. Serov, I. V. Davydovskiy, I. S. Sarkisov.

Schools of clinical pathologists in Kyiv, Moscow and St. Petersburg became centers of development of pathological anatomy in Ukraine and Russia.

In Kyiv, after the opening of the medical faculty of the Imperial University of St. Volodymyr (1891) at the suggestion of his curator M.I. Pirogov, in accordance with the Statute (1842), the department of physiology of a sick person with pathological anatomy was opened, which began to function in 1845: it was headed by a student of M. I. Pirogov, M. I. Kozlov. Representatives of the Kyiv school of pathologists: Yu. F. Matson, H. M. Minh, V. K. Vysokovich, V. M. Kucherenko, E. I. Chaika, O. P. Kiselyova, M. K. Dal, M. B. Khominskyi et al.

In 1849, the department of pathological anatomy was opened at the medical faculty of Moscow University, which was headed by A. I. Polunin (1820-1888), the founder of the Moscow school of pathologists and the initiator of the clinical-anatomic direction in pathological anatomy. Representatives of this school: M. N. Nikiforov, O. I. Abrikosov, M. A. Skvortsov, I. V. Davydovskiy, V. V. Syerov, A. I. Strukov.

In 1859, the Department of Pathological Anatomy was opened in St. Petersburg. Representatives of this school: M. M. Rudnev, G. V. Shor, N. M. Anichkov, M. F. Glazunov, V. G. Garshin, V. D. Tsinserling.

The study of the methodology of teaching general pathological anatomy is based on a number of provisions:

- a person must be studied, first of all, as a representative of the animal world, that is, first as an organism, and only then as a social personality;
- the main life manifestations and properties of various living systems are

essentially a reflection of various adaptation mechanisms under different conditions of their existence;

- taking into account the above, the variability of organisms must be considered as a form of their adaptation, i.e. the law of evolution, to which all life processes are subject;
- the unity of structure (form) and function means their impossibility to exist without each other (I.V. Davydovekii, 1961).

The basis of the teaching of special pathological anatomy is the nosological principle, which involves the study of etiology, pathogenesis, orgaiopathology and syndrome, classification and nomenclature of the disease, the processes of their treatment and prevention, development of issues of statistics, pathomorphosis, as well as diagnostic problems.

Thus, pathological anatomy is an independent medical discipline that studies structural changes occurring in the body of a sick person. There is general (theoretical) and special (practical) pathological anatomy, the basis of which is the clinical and anatomical direction of development. General pathological anatomy studies general pathological processes, special - studies individual diseases, based on nosological and syndromological principles.

Questions for self-control :

1. Definition of pathological anatomy (pathomorphology) as a science and practical field.
2. The place of pathomorphology in the health care system of Ukraine and the world and the role and place in the education of students of higher medical education.
3. Stages of development of pathomorphology as a science and practical field.
4. Contribution of domestic scientists to the development of world pathomorphology.
5. Research methods in pathomorphology.
6. Legislative basis of the patho-anatomical service in Ukraine.

Indicative tasks for processing theoretical material

Compile a dictionary of basic concepts on the topic.

2. Test tasks for self-control :

1. What is the purpose of the section-biopsy course?
 - A) carrying out a histological examination
 - C) carrying out a laboratory study
 - C) conducting an anatomical analysis
 - D) clinical and anatomical analysis
 - E) control of the attending physician

2. The task of the section-biopsy course?
 - A) conducting an autopsy
 - C) carrying out a histological examination
 - C) ultrastructural analysis
 - D) carrying out histochemical analysis
 - E) conducting clinical research

3. The task of the section-biopsy course?
 - A) conducting anthropometric studies
 - C) preparation of organs
 - C) conducting topographic-anatomical studies
 - D) collection of material
 - E) carrying out clinical and laboratory correlation

4. The task of the section-biopsy course?
 - A) making a clinical diagnosis
 - C) writing a clinical epicrisis
 - C) compilation of a clinical and anatomical epicrisis
 - D) writing the clinical basis
 - E) writing the prognosis of the disease

5. The task of the section-biopsy course?
 - A) analysis of anatomical epicrisis
 - B) analysis of clinical and patho-anatomical diagnoses
 - C) analysis of clinical epicrisis
 - D) analysis of the main disease
 - F) analysis of concomitant diseases

6. The most important type of work of a pathologist?
 - A) participation in the work of the medical board
 - C) lifetime diagnosis
 - C) embalming corpses
 - D) preparation of sectional material for research

F) medical history review

7. The main directions of the development of pathological anatomy:

- A) clinical
- C) structural
- C) laboratory-diagnostic
- D) clinical and anatomical
- E) macro-microscopic

8. The year in which pathological anatomy stood out as an independent science

- A) 1817
- B) 1840
- C) 1849
- D) 1917
- E) 1990

9. Tasks of biopsy:

- A) confirmation of clinical diagnosis
- C) checking the diagnosis
- C) detection of clinical features
- D) detection of structural changes

E) control of the doctor's work

10. types of biopsy:

- A) incisional, aspiration, endoscopic
- B) exophytic, unicentric, endometrial
- C) exfoliative, multicentric, thoracic
- D) correlative, endophytic, ambulatory
- E) operational, fabric, virtual

3. Individual tasks for students of higher education on the topic:

- Familiarize yourself with the legal framework

4. List of recommended literature

Main :

1. Atlas of micropreparations in pathomorphology / I.I. Starchenko, B.M. Filenko, N.V. Royko and others; VDZU "UMSA". - Poltava, 2018. - 190 p

2. Fundamentals of pathology according to Robbins: in 2 volumes. Volume 1 / Vinay Kumar, Abul K. Abbas, John C. Astaire; translation of the 10th Eng. edition. Publishing house: All-Ukrainian specialized publishing house "Medytsyna". – X II. - 2019. - 420 p.

3 . The basics of pathology according to Robbins: in 2 volumes. Volume 2 / Vinay Kumar, Abul K. Abbas, John C. Astaire; translation of the 10th Eng. edition. Publisher:

All-Ukrainian specialized publishing house "Medytsyna". – X II. – 2019. – 512 p.

4 . Pathomorphology. General pathomorphology: a study guide / edited by Ya. Ya. Bodnara, V.D. Voloshina, A.M. Romanyuk, V.V. Gargin. - New Book, 2020. - 248 p.

5 . Workshop on biopsy-sectioning course / I.I. Starchenko, A.P. Hasyuk, S.A. Proskurnya [etc.] – Poltava, 2016. – 160 p.

Additional :

1. Sorokina IV Biopsy-autopsy course (clinical pathology) / IV Sorokina, VD Markovskiy. - Kharkiv, 2012. - 60 c.

2 . General pathomorphology / I.I. Starchenko, N.V. Royko, B.M. Filenko [et al.] – Poltava, 2016. – 136 p.

3 . Zerbino D. D. Pathomorphology and histology: an atlas / D. D. Zerbino, M. M. Bagrii, Y. Ya. Bodnar, V. A. Dibrova. – Vinnytsia: Nova Kniga, 2016. – 800 p.

4 . Methods of morphological research / M.M. Baghrii, V.A. Dibrova, O.G. Papadynets, M.I. Grischuk; edited by M.M. Baghria, V.A. Dibrov – Vinnytsia: Nova Kniga, 2016. – 328 p.

5 . Pathomorphology: nats. handyman / V.D. Markovskiy, V.O. Tumansky I.V. Sorokina et al., edited by V.D. Markovsky, V.O. Tumanskyi. — K.: VSV "Medicine". 2015— 936 p., color. view. ISBN 978-617-505-450-5

Information resources

1. <http://moz.gov.ua> – Ministry of Health of Ukraine

2. www.ama-assn.org – American Medical Association

3. www.who.int - World Health Organization

4. www.dec.gov.ua/mtd/home/ - State Expert Center of the Ministry of Health of Ukraine

5. <http://bma.org.uk> - British Medical Association

6. www.gmc-uk.org - General Medical Council (GMC)

7. www.bundesaerztekammer.de – German Medical Association

8. <http://library.med.utah.edu/WebPath/webpath.html> - Pathology Laboratory

9. <http://www.webpathology.com/> - Web Pathology

10. National Scientific Medical Library of Ukraine <http://library.gov.ua/>

11. National Library of Ukraine named after V.I. Vernadsky <http://www.nbu.gov.ua>

Topic 2 .: " Method of research of biopsy, operative material and droppings. Rules of research and the procedure for drawing up documentation regarding the research of morphological material".

Purpose: Taking into account that nowadays the role of morphological studies

in complex examinations for the reliable diagnosis and treatment of patients is increasing, as well as the constant complication of the tasks that clinicians and pathologists face during the treatment of patients and the justification of surgical intervention, its success, rational therapy and forecasting, the role of accurate pathomorphological diagnosis is increasing. All diagnostic biopsies, all organs and tissues removed during surgical interventions , as well as droppings and scrapings during abortions, are subject to pathologistological examination. Applicants of higher medical education should know how and when, according to what rules, a biopsy study is carried out, whether for the purpose of clarifying or confirming a clinical diagnosis, establishing a diagnosis in clinically unexplained cases, for determining the stages of diseases, recognizing different forms and origins of inflammatory, hyperplastic and tumor processes.

Basic concepts: biopsy (incisional, excisional, trepan biopsy, curettage, intraoperative, endoscopic, fine-needle) fixation, referral form

Plan

1. Theoretical questions:

Biopsy (from the Greek bios - life i oopsis - look) - microscopic examination of tissue and cellular material obtained from a patient during life for the purpose of diagnosis, treatment, prognosis and scientific research.

Biopsy material is formally divided into diagnostic and operational

All diagnostic biopsies, all organs and tissues removed during surgical interventions, as well as droppings, scrapings during abortions, carried out in the department of this medical and preventive institution and medical institutions attached to it, are subject to pathologistological examination.

Pathohistological studies are carried out in order to clarify and confirm the clinical diagnosis, to establish the diagnosis in clinically unclear cases, to determine the initial

stages of the disease, and to recognize inflammatory, hyperplastic, and tumor processes that differ in form and origin. The study of biopsy and operative materials allows judging the radicality of the operation, the dynamics of the pathological process, the changes that occurred in tissues or neoplasms under the influence of treatment, etc.

Types of biopsies:

Excisional - removal of the entire pathological formation or organ during surgical intervention.

Incisional - removal of part of a pathological formation or organ during surgery, but necessarily on the border of damaged and unchanged tissue.

Puncture - removal of a column of tissue of the studied formation or fragments of an organ by means of a needle or trocars with a feather diameter of the lumen (parenchymal organs, bone marrow, lymph nodes).

Trepanobiopsy is a method of intravital extraction of bone tissue for examination of the bone marrow.

Forceps - obtaining material with the help of special devices - forceps, for example, during endoscopic studies.

Curettage - obtaining material by scraping.

Aspiration - suction of the contents of an organ or body cavity using a syringe.

Directed catheterization .

Biopsy by massage and pressure .

Biopsy by washing organ cavities.

Biopsy by washing from surgical wounds .

Biopsy by smear.

Smears-imprints.

Endoscopic.

Accidental, unplanned biopsy.

Biopsy is a material obtained by biopsy for pathomorphological examination.

Tissues and organs removed during a surgical operation are considered surgical material. Pathohistological examination of the operative material makes it possible to

confirm the diagnosis for which the surgical intervention was performed, as well as to clarify its prognosis. Pathologically changed tissues, regardless of the purpose of surgical removal, are subject to mandatory histological examination.

Procedure for examination of biopsy and surgical materials (pathohistological studies)

The objects to be examined are delivered immediately to the pathology bureau (department) to ensure the timeliness of the findings. It is forbidden to accumulate biopsy-operative material (including scrapings) in operating rooms. The operative material must be carefully marked: the patient's last name, initials, medical history number, and a label are pasted on the can with the object to be examined. When several objects from different patients are placed in one dish, each of them is tied separately in gauze with an attached tag made of sticky paper that does not get wet in the liquid, on which the name of the patient and his initials should be written with a simple pencil.

An object delivered from the clinical department that is unsuitable for research (dried, rotten, frozen) is not accepted, which is immediately reported to the head of the department. For each material, a special research referral form is filled out, which is delivered to the pathology bureau (department). All the columns of the form must be filled in by a clinician in such a way that the pathologist who will conduct the research has a sufficient amount of clinical information when evaluating the detected morphological changes. In addition to the clinic of the disease, the form should also include brief data on the anamnesis and the treatment that was carried out (the total number of injected cytostatic and hormonal drugs, the nature of radiation therapy, etc.) and a macroscopic description of the drug.

If the referral form is filled out carelessly and does not contain the necessary data, the head of the department of the pathology office informs the head of the clinical department from where the biopsy material was delivered; in case of repeated cases, he reports to the chief physician (director of the institute), his deputy for medical work.

It is strictly forbidden to divide the biopsy and operating materials into parts and

send them to different patho-anatomical laboratories. In such cases, morphological changes characteristic of this process (cancer, tuberculosis, etc.) may appear only in one part of the object, and accordingly, the results will be different. This can disorient the attending physician and harm the patient.

The doctor who ordered the study is responsible for the delivery of the material. The material is delivered to the pathology office (department) by the employees of the medical department. If for certain reasons it is impossible to send the material immediately after the operation, the surgeon who performed the operation ensures its proper fixation (in 10% formalin solution) and preservation. If the patient died during the operation or shortly after it, the organs removed during the operation are delivered to the pathology bureau (department) together with the corpse.

The staff of the pathology office (department), laboratory is personally responsible for the correct reception, registration and storage of received and processed material.

The laboratory technician of the pathology bureau, pathology department, accepting the material that comes to the laboratory together with the referral form, checks the correctness and completeness of filling in all the columns and the compliance of the received material with the information indicated on the form.

Registration of biopsies and surgical material is carried out by a laboratory assistant.

The 1st option of registration: the registration book is established for each calendar year, has the following columns: NN in order (the numbering of studies starts anew each year), the numbers correspond to the number of pieces cut from the object; date of receipt and date of examination of the material, surname, name and patronymic of the patient, age, medical history number, object of study, approximate clinical diagnosis, necessary clinical information about the patient, histological description of the drug and clinical diagnosis, receipt for obtaining the conclusion.

II registration option: passport data is entered in a blank form, on which the corresponding study number is also indicated. The results of macroscopic and

microscopic studies are entered under the copy. A copy of the conclusion is sent to the medical institution, and the original form, received together with the material, is bound and kept in the laboratory. Thus, all clinical information about the patient is stored in the laboratory, this provides clearer documentation and the possibility of summarizing the results of the biopsy work; it is advisable to fill in all the columns of the form in the pathology department on a typewriter.

The macroscopic examination of the material, the choice of methods of its processing, methods of research and the necessary types of staining are carried out by a pathologist, respectively. It is forbidden to assign this work to a laboratory technician.

Each study (block, piece) is assigned a serial number, which is written on a tag that is placed in a container with the material under study, on a block when embedded in paraffin or celloidin, and affixed to histological preparations. The last two digits of the calendar year of the study are placed on the slides under the study number.

The examination of the delivered pieces of fabric must be completed in the following terms:

- a) for urgent biopsies - no later than 20-25 minutes after receiving the material;
- b) for diagnostic biopsies and surgical material - within 4-5 days. The period of processing of bone tissue and biopsies that require additional staining methods or consultation of highly qualified specialists may be extended.

Copies of the forms with the results of the histological examination are sent to clinical departments (under receipt) and must be included in the medical history.

It is recommended to keep archival histological preparations and registration books throughout the existence of the pathology bureau (department). Depending on the local conditions, histological preparations of worm-like appendages, keel sacs, tonsils, scrapings from the uterine cavity after an incomplete abortion are kept for one year, and may be destroyed at the end of the period. Histological preparations of benign and malignant tumors, tumor-like processes, with suspicion of tumor growth and specific inflammation are kept permanently. Celloidin blocks are stored in jars in a 70% alcohol solution, on which there should be a label with the indicated numbers and

the year of the study. For long-term storage of the material embedded in celloidin, the latter is removed from the blocks, strung on a thread together with tags indicating the number and year of the study, and placed in a 70% alcohol solution. Paraffin blocks with appropriate markings are stored in conditions that delay drying (polyethylene bags, paraffining of the cut surface). Macropreparations or pieces of them are stored in a 10% formalin solution for a year, after which they are destroyed. Pieces of brain tumors, soft tissue malignant tumors and those that are rare are recommended to be stored in a 10% formalin solution throughout the life of the laboratory, if conditions are available.

Histological preparations, if necessary - archival macro-preparations can be issued to the patient, his relatives or medical personnel for consultation in another medical institution, provided there is an official written request from this institution. The corresponding relationship with the request is pasted in the registration book of histological studies (in accordance with the number of the drug), and after the drug is returned, it is crossed out. The medical institution to which the drugs were issued must return them to the pathology office (department).

Questions for self-control

1. Purpose and study of postoperative and biopsy material.
2. Types of biopsies. Peculiarities of choosing the type of bioseed research and its implementation.
3. Procedure for sending material for research.
4. Procedure for registration of postoperative and biopsy material.
5. Terms and procedure of performing a biopsy examination.
6. Variant and pathogistological conclusion and its interpretation.
7. Procedure and registration of pathomorphological conclusion regarding biopsies.

Indicative tasks for processing theoretical material

- Compile a dictionary of basic concepts on the topic.

2. Test tasks for self-control :

1. The patient has been treated for chronic alcoholism for the past 2 years. Now he complains of a dull pain in the right hypochondrium, an increase in the volume of the abdomen, skin itching. The doctor performed a liver biopsy. He discovered portal cirrhosis of the liver. Select the type of biopsy in this case:

- A) forceps biopsy
- B) incisional biopsy
- C) puncture biopsy
- D) excisional biopsy
- E) endoscopic biopsy

The man suffered from bronchiectatic disease from early childhood . Recently, he complains of pain in the lumbar region, changes in the color and quantity of urine. During ultrasound examination, the kidneys are enlarged and dense. What type of biopsy can clarify the pathological process that has developed in the kidneys ?

- A) trepan biopsy
- B) excisional biopsy
- C) forceps biopsy
- D) endoscopic biopsy
- E) examination of secretions (urine)

3. A 55-year-old man underwent a biopsy, during which an exophytic tumor was found in the left main bronchus, narrowing the lumen of the bronchus by 2/3. Histologically - bronchus cancer. Name the type of biopsy in which pieces of the tumor were obtained :

- A) incisional biopsy
- B) puncture biopsy
- C) forceps or endoscopic biopsy
- D) trepan biopsy
- E) maz rk - reflection current

- old woman was brought to the surgical department with complaints of acute attack-like pains in the right lower part of the abdomen, nausea, vomiting. An appendectomy was performed. Histologically - superficial appendicitis. The name of the biopsy in this case ?

- A) incisional biopsy
- B) excisional biopsy
- C) forceps biopsy
- D) maz ok -repulse current
- E) curettage

5. The man suffered from stomach ulcer disease for a long time. During endoscopic

examination, the biopsy revealed chronic gastritis. The edges of the ulcer are compacted with a tumor-like thickening. The biopsy material was delivered to the pathology department at the end of the working day, the doctor was not notified. How to fix the material?

- A) neutral formalin
- B) 10% alcohol solution
- C) sulema solution
- D) chloramine
- E) 96% alcohol

6. A 60-year-old man has been complaining of coughing attacks and expectoration of viscous sputum for several years. When examining the bronchi, areas of growth of granulation tissue, exploding into the lumen of the bronchus in the form of a polyp, were noted. During one of the patient's coughing fits, a dense piece of tissue was found in the sputum. Histological examination of a piece of tissue confirmed the diagnosis - polyp of the mucous membrane with foci of malignancy. What is the name of this type of rejection of pathological tissues?

- A) aspiration biopsy
- C) curettage
- C) random biopsy
- D) puncture biopsy
- E) incisional biopsy

7. A 35-year-old man had a cough with a lot of sputum for 1.5 months. Radiologically, the presence of exudate in the left pleural cavity. What type of biopsy will give an opportunity to investigate the nature of the exudate?

- A) smear-imprint
- C) biopsy by massage
- C) catheterization biopsy
- D) aspiration biopsy
- F) curettage

8. In a 30-year-old patient, during an operation for a mammary gland tumor, a compacted enlarged lymph node was found near the operative field. The surgeon sent the removed lymph node for an express examination. Did the surgeon act correctly in this case?

- A) it is not possible to process lymph nodes using the express method
- C) in this case it is necessary
- C) does the biopsy affect the course of the operation in this case
- D) express biopsy without the warning of the pathologist is possible
- E) there is no difficulty in carrying out cyto-diagnostics of lymph nodes

9. A tumor of the left ovary was found in a young woman. During the operation, the tumor (cyst) was large, 30*30 mm, with a dense capsule. The surgeon hesitated whether to send a piece of this mass for an express biopsy. Your opinion?

- A) it is possible to send 1 piece of cyst for an express biopsy
- C) many pieces from an ovarian cyst can be examined
- C) should not take responsibility for urgent research
- D) it is better to make urgent preparations on a freezing microtome
- E) express biopsy will not change the course of the operation

10. In the otolaryngology department, a 12-year-old sick boy was prescribed a biopsy from a tumor of the right auricle, with an ulcer, purulent discharge, sometimes with an admixture of blood. How to take material for analysis?

- A) curettage
- C) biopsy by massage and pressure
- C) biopsy by scraping with a spatula
- D) biopsy by using a sponge or swab to transfer cells to the sight glass, if it is not possible to apply the glass to the wound
- E) examination of secretions

3. Individual tasks for students of higher education on the topic:

- Familiarize yourself with the features of taking biopsy material by specialists of various specialties (gynecologists, orthopedists, pulmonologists, etc.) for a better understanding of the technology of the process.

4. List of recommended literature

Main :

1. Atlas of micropreparations in pathomorphology / I.I. Starchenko, B.M. Filenko, N.V. Royko and others; VDZU "UMSA". - Poltava, 2018. - 190 p

2. Fundamentals of pathology according to Robbins: in 2 volumes. Volume 1 / Vinay Kumar, Abul K. Abbas, John C. Astaire; translation of the 10th Eng. edition. Publishing house: All-Ukrainian specialized publishing house "Medytsyna". – X II. - 2019. - 420 p.

3 . The basics of pathology according to Robbins: in 2 volumes. Volume 2 / Vinay Kumar, Abul K. Abbas, John C. Astaire; translation of the 10th Eng. edition. Publisher: All-Ukrainian specialized publishing house "Medytsyna". – X II. – 2019. – 512 p.

4 . Pathomorphology. General pathomorphology: a study guide / edited by Ya. Ya. Bodnara, V.D. Voloshina, A.M. Romanyuk, V.V. Gargin. - New Book, 2020. - 248 p.

5 . Workshop on biopsy-sectioning course / I.I. Starchenko, A.P. Hasyuk, S.A. Proskurnya [etc.] – Poltava, 2016. – 160 p.

Additional :

1. Sorokina IV Biopsy-autopsy course (clinical pathology) / IV Sorokina, VD Markovskiy. - Kharkiv, 2012. - 60 c.
- 2 . General pathomorphology / I.I. Starchenko, N.V. Royko, B.M. Filenko [et al.] – Poltava, 2016. – 136 p.
- 3 . Zerbino D. D. Pathomorphology and histology: an atlas / D. D. Zerbino, M. M. Bagrii, Y. Ya. Bodnar, V. A. Dibrova. – Vinnytsia: Nova Kniga, 2016. – 800 p.
- 4 . Methods of morphological research / M.M. Baghrii, V.A. Dibrova, O.G. Papadynets, M.I. Grischuk; edited by M.M. Baghria, V.A. Dibrovyy – Vinnytsia: Nova Kniga, 2016. – 328 p.
- 5 . Pathomorphology: nats. handyman / V.D. Markovskiy, V.O. Tumansky I.V. Sorokina et al., edited by V.D. Markovsky, V.O. Tumanskyi. — K.: VSV "Medicine". 2015— 936 p., color. view. ISBN 978-617-505-450-5

Information resources

1. <http://moz.gov.ua> – Ministry of Health of Ukraine
2. www.ama-assn.org – American Medical Association
3. www.who.int - World Health Organization
4. www.dec.gov.ua/mtd/home/ - State Expert Center of the Ministry of Health of Ukraine
5. <http://bma.org.uk> - British Medical Association
6. www.gmc-uk.org - General Medical Council (GMC)
7. www.bundesaerztekammer.de – German Medical Association
8. <http://library.med.utah.edu/WebPath/webpath.html> - Pathology Laboratory
9. <http://www.webpathology.com/> - Web Pathology
10. National Scientific Medical Library of Ukraine <http://library.gov.ua/>
11. National Library of Ukraine named after V.I. Vernadsky <http://www.nbu.gov.ua>

Topic 3. "Rules for taking and processing material obtained from various organs and pathological formations."

Purpose: The role of morphological studies in complex examinations and treatment of patients is constantly increasing. The tasks that clinicians put before pathologists during the treatment of patients and the justification of surgical intervention, its success, rational therapy and prognosis are constantly becoming more complicated.

All diagnostic biopsies, all organs and tissues removed during surgical operations, as well as droppings and scrapings during abortions are subject to

pathologistological examination.

Pathohistological examination is carried out in order to clarify and confirm the clinical diagnosis, to establish the diagnosis in clinically unclear cases, to determine the stages of diseases, to recognize different forms and origins of inflammatory, hyperplastic and tumor processes.

Basic concepts: biopsy (incisional, excisional, trepan biopsy, curettage, intraoperative, endoscopic, fine-needle) fixation, referral form

Plan

1. Theoretical questions:

Procedure for examination of biopsy and surgical materials (pathohistological studies)

The objects to be examined are delivered immediately to the pathology bureau (department) to ensure the timeliness of the findings. It is forbidden to accumulate biopsy-operative material (including scrapings) in operating rooms. The operative material must be carefully marked: the patient's last name, initials, medical history number, and a label are pasted on the can with the object to be examined. When several objects from different patients are placed in one dish, each of them is tied separately in gauze with an attached tag made of sticky paper that does not get wet in the liquid, on which the name of the patient and his initials should be written with a simple pencil.

It is strictly forbidden to divide the biopsy and operating materials into parts and send them to different patho-anatomical laboratories. In such cases, morphological changes characteristic of this process (cancer, tuberculosis, etc.) may appear only in one part of the object, and accordingly, the results will be different. This can disorient the attending physician and harm the patient.

The doctor who ordered the study is responsible for the delivery of the material. The material is delivered to the pathology office (department) by the employees of the

medical department. If for certain reasons it is impossible to send the material immediately after the operation, the surgeon who performed the operation ensures its proper fixation (in 10% formalin solution) and preservation. If the patient died during the operation or shortly after it, the organs removed during the operation are delivered to the pathology bureau (department) together with the corpse.

The macroscopic examination of the material, the choice of methods of its processing, methods of research and the necessary types of staining are carried out by a pathologist, respectively. It is forbidden to assign this work to a laboratory technician.

Each study (block, piece) is assigned a serial number, which is written on a tag that is placed in a container with the material under study, on a block when embedded in paraffin or celloidin, and affixed to histological preparations. The last two digits of the calendar year of the study are placed on the slides under the study number.

The examination of the delivered pieces of fabric must be completed in the following terms:

- a) for urgent biopsies - no later than 20-25 minutes after receiving the material;
- b) for diagnostic biopsies and surgical material - within 4-5 days. The period of processing of bone tissue and biopsies that require additional staining methods or consultation of highly qualified specialists may be extended.

When carrying out pathohistological studies, the following amount of research material - malignant tumors is recommended:

Cancer of the uterine body (uterine sarcoma, etc.): tumor 1-4; tumor border with unchanged tissues - 2; cervix - 1; two ovaries - 2; two pipes - 2; lymph nodes of parametrium tissue - 3; myomatous nodes (if any) - 2, 10-14 pieces in total.

Cervical cancer: cervical tumor - 1-2; border of tumor and unchanged tissues - 1; cervical canal - 1; from the body of the uterus - 1; two ovaries - 2; two pipes - 2; lymph nodes of parametrium tissue - 3; myomatous nodes (if any) - 2, 11-15 pieces in total.

Benign processes in the uterus (myomas, endometriosis, etc.): uterus - 2-4; pipes - 2; ovaries - 2; paraovarian cysts - 1, only 3-12 pieces.

Stomach - tumor: tumors - 1-4; tumor border with unchanged tissues - 1-2; cutting lines, upper and lower - 2; regional lymph nodes - 1-3, 8-14 pieces in total.

Stomach - ulcer: ulcer - edge, bottom - 1-3; stomach wall - 3; adjacent areas - 1-2; regional lymph nodes - 3, a total of 5-9 pieces.

Mammary gland: tumor - 1-4; tumor border with unchanged tissues - 1-2; tissue of the mammary gland and adjacent areas - 2-3; lymph nodes (in groups) - 3, a total of 7-14 pieces.

Soft tissue tumors: tumor 2-6; border of the tumor with adjacent tissues - 1-3, only 3-9 pieces.

Lungs (tumor): tumor 1-5; tumor border with unchanged tissues - 3; lung tissue - from adjacent areas - 2-3; regional lymph nodes - 3, total - 8-15 pieces.

Lungs (purulent processes): from 3 to 9 pieces.

Intestine with lymph nodes: from 3 to 6 pieces.

Esophagus: pieces taken during esophagoscopy - all.

Removed esophagus with lymph nodes: 3-5 pieces.

Thyroid gland: from each lobe 1-2 pieces, with nodular goiters 1-2 from each node; lymph nodes - 1-3 pieces, 6-10 in total.

Ovarian tumors: (when removing the uterus with tubes) - pieces from the tumor 2-3; fallopian tubes - 1-2; from the endometrium - 2-3; myomatous nodes (if any) 2-3, 8-13 pieces in total.

Larynx (tumor) - 2; lymph nodes - 2, only 2-5 pieces.

Prostate gland: from each node - 1-2 or all pieces in the form of a scraping when taking material by the method of transurethral electroresection.

The vermiform appendix is examined either completely, by making "rolls", or 1-3 pieces are cut out from the most changed places and from an area remote from the zone of the pathological process.

Tonsils and lymph nodes, pieces of the cervix, polyps and other tissues - each piece is examined separately.

Fallopian tubes in ectopic pregnancy - 1-3 pieces or more.

Gallbladder: 2-3 pieces from the wall or tumor; in the presence of lymph nodes - 3, only 2-6 pieces.

From other organs and tissues, 2-3 pieces are cut from the tumor or the area affected by the pathological process; 1-2 pieces of tissue surrounding the pathological process; with the simultaneous removal of lymph nodes, at least 3 lymph nodes are examined if they do not have macroscopic signs of a tumor.

The material of scrapings, including during gynecological examinations, aspiration and other types of biopsies, trepanobiopsies, is fully investigated.

The order of preparation of biopsy, operative and sectional materials for histological studies.

1. Skin tumors are cut and excised so that when examining the histological preparation, it is possible to assess the nature of changes in the center and periphery of the tumor and in adjacent areas.

2. Before the study, the lungs are fixed for a day by inserting a fixative into the bronchus under pressure from an Esmarch mug raised 25 cm above the level of the table. From above, the lung is also filled with fixative and covered with gauze or cotton wool. In the case of tumors, incisions are made along the probe inserted into the bronchus. Not only tumor areas, but also the adjacent walls of the bronchi and lung parenchyma, as well as the lymph nodes of the root of the lung, are subject to histological examination.

3. Fixation of the larynx is carried out in an open form, plates along the larynx with a pathological focus and adjacent mucous membrane are cut out for examination.

4. Organs of the gastrointestinal tract are fixed after longitudinal dissection and straightening on cardboard. Pathological focal changes and the condition of the adjacent mucous membrane are described. In the pieces of stomach ulcers, a purposeful search for its malignancy is conducted, for which it is necessary to examine a larger number of histological sections. The polyps are searched for areas of malignancy in the form of compactions and ulcers. In cases of gastric resection to exclude a duodenal ulcer, the delivered drug may contain the edge of this ulcer; places of surgical

intervention must be investigated.

5. The vermiform process is cut longitudinally or transversely in the changed places, the contents and changed areas of the wall are examined.

6. Operatively removed testicles or their appendages are dissected for fixation by longitudinal incisions.

7. The prostate gland is dissected for fixation with transverse cuts and pieces are taken for histological examination, capturing the walls of the urethra and the capsule of the gland. In the presence of tumor nodes (areas of hyperplasia), pieces are cut out of them together with areas of adjacent tissue of the gland.

8. Areas of sectoral resection of the mammary gland after palpation are cut and inspected. The size, density of nodes, content and condition of the cyst walls are described. Areas of nodes with marble patterns and cyst walls are subject to histological examination. In each case, several pieces are cut from the pathological focus.

In case of total resection of the mammary gland, it is prepared from the muscles, repeatedly cut with parallel cuts perpendicular to the skin. The tissue in which the lymph nodes are examined is also dissected.

9. During extirpation of the uterus with appendages, all removed organs are examined, including ovaries, tubes, uterine ligaments, regardless of the presence or absence of pathological changes in them. The uterus is opened with a T-shaped incision from the front. At the same time, the size of the uterus, the length of the cervical canal, the thickness of the mucous and muscular membranes are measured. The cervix is dissected and examined parallel to the cervical canal. With leiomyomas, all detected nodes are examined, regardless of their number. The material for electroconization of the cervix is being studied in its entirety.

Cystic ovarian tumors are dissected, ovarian remnants are found in their walls, which must be examined together with the cyst wall in areas of its compaction or villous growths.

Dermoid cysts are fixed without surgery. After freeing the contents, the head of the cyst is examined. In teratomas, at least 4-5 pieces are subject to histological

examination to study the nature of possible tissue differentiation.

10. The pituitary gland is cut into two halves along the sagittal line for fixation. One of them is subjected to histological examination in such a way that the anterior and posterior lobes, the funnel of the pituitary gland, fall into the sections. The second half is cut into two equal parts along the frontal line, along which sections are prepared for microscopic examination.

11. The thyroid gland is fixed by cutting it lengthwise into 0.5 cm thick plates while preserving the connection between them or as a whole. For histological examination, the following are taken:

a) with diffuse goiters and thyroiditis - pieces from each lobe and isthmus, as well as from any foci of fibrosis and mosaic structure.

b) with nodules - from all nodes, necessarily with the capsule and adjacent tissue, in particular, all sealing zones are cut out.

12. Adrenal glands are fixed, dissected lengthwise into plates 0.2-0.3 cm long, preserving the connection between them. For research, pieces are cut out in the gate area; they must necessarily have cortical and brain matter. In the presence of a tumor, they are excised together with the adjacent tissue.

13. The pancreas is fixed, dissected lengthwise into plates 0.5 cm thick, preserving the connection between them. For histological examination, pieces are taken from the center and at the border with the adjacent tissue.

14. To study the liver and spleen, tissue plates 0.5 cm thick are cut along the length of the organ, and after fixation, pieces are taken from the portal area and near the capsule. In the presence of pathological foci, pieces of them are cut out together with the adjacent tissue.

15. Lymph nodes before fixation are dissected along the large size. The material for research is taken from the gate, the center of the node and the periphery with the capsule.

16. The removed pieces of the brain are cut into plates 0.5 cm thick. After fixation, pieces are cut from the pathologically changed areas on their border with

unchanged tissues.

17. For the study of bones, plates 0.5-0.7 cm thick are cut out, which are subsequently subjected to decalcification. Dissections are performed taking into account pathological foci (tumor nodes) and adjacent unchanged bone tissue. The soft tissue component of the tumor is examined without decalcification.

Questions for self-control

1. Procedure for sending material for research.
2. Procedure for registration of postoperative and biopsy material.
3. Rules for taking and processing material from pathological formations
4. The order of preparation of biopsy, operative and sectional materials for histological studies.
5. Normative indicators regarding the number of investigated fragments in various pathological conditions and tumors of various organs and tissues.

Indicative tasks for processing theoretical material

- Compile a dictionary of basic concepts on the topic.

2. Test tasks for self-control :

1. The patient has been treated for chronic alcoholism for the past 2 years. Now he complains of a dull pain in the right hypochondrium, an increase in the volume of the abdomen, skin itching. The doctor performed a liver biopsy. He discovered portal cirrhosis of the liver. Select the type of biopsy in this case:

- A) forceps biopsy
- B) incisional biopsy
- C) puncture biopsy
- D) excisional biopsy
- E) endoscopic biopsy

The man suffered from bronchiectatic disease from early childhood . Recently, he complains of pain in the lumbar region, changes in the color and quantity of urine. During ultrasound examination, the kidneys are enlarged and dense. What type of biopsy can clarify the pathological process that has developed in the kidneys ?

- A) trepan biopsy
- C) excisional biopsy
- C) forceps biopsy
- D) endoscopic biopsy

F) examination of secretions (urine)

3. A 55-year-old man underwent a biopsy, during which an exophytic tumor was found in the left main bronchus, narrowing the lumen of the bronchus by 2/3. Histologically - bronchus cancer. Name the type of biopsy in which pieces of the tumor were obtained :

- A) incisional biopsy
- C) puncture biopsy
- C) forceps or endoscopic biopsy
- D) trepan biopsy
- E) maz rk - reflection current

- old woman was brought to the surgical department with complaints of acute attack-like pains in the right lower part of the abdomen, nausea, vomiting. An appendectomy was performed. Histologically - superficial appendicitis. The name of the biopsy in this case ?

- A) incisional biopsy
- C) excisional biopsy
- C) forceps biopsy
- D) maz ok -repulse current
- F) curettage

5. The man suffered from stomach ulcer disease for a long time. During endoscopic examination, the biopsy revealed chronic gastritis. The edges of the ulcer are compacted with a tumor-like thickening. The biopsy material was delivered to the pathology department at the end of the working day, the doctor was not notified. How to fix the material?

- A) neutral formalin
- B) 10% alcohol solution
- C) sulema solution
- D) chloramine
- E) 96% alcohol

6. A 60-year-old man has been complaining of coughing attacks and expectoration of viscous sputum for several years. When examining the bronchi, areas of growth of granulation tissue, exploding into the lumen of the bronchus in the form of a polyp, were noted. During one of the patient's coughing fits, a dense piece of tissue was found in the sputum. Histological examination of a piece of tissue confirmed the diagnosis - polyp of the mucous membrane with foci of malignancy. What is the name of this type of rejection of pathological tissues?

- A) aspiration biopsy
- C) curettage

- C) random biopsy
- D) puncture biopsy
- F) incisional biopsy

7. A 35-year-old man had a cough with a lot of sputum for 1.5 months. Radiologically, the presence of exudate in the left pleural cavity. What type of biopsy will give an opportunity to investigate the nature of the exudate?

- A) smear-imprint
- C) biopsy by massage
- C) catheterization biopsy
- D) aspiration biopsy
- F) curettage

8. In a 30-year-old patient, during an operation for a mammary gland tumor, a compacted enlarged lymph node was found near the operative field. The surgeon sent the removed lymph node for an express examination. Did the surgeon act correctly in this case?

- A) it is not possible to process lymph nodes using the express method
- C) in this case it is necessary
- C) does the biopsy affect the course of the operation in this case
- D) express biopsy without the warning of the pathologist is possible
- E) there is no difficulty in carrying out cyto-diagnostics of lymph nodes

9. A tumor of the left ovary was found in a young woman. During the operation, the tumor (cyst) was large, 30*30 mm, with a dense capsule. The surgeon hesitated whether to send a piece of this mass for an express biopsy. Your opinion?

- A) it is possible to send 1 piece of cyst for an express biopsy
- C) many pieces from an ovarian cyst can be examined
- C) should not take responsibility for urgent research
- D) it is better to make urgent preparations on a freezing microtome
- E) express biopsy will not change the course of the operation

10. In the otolaryngology department, a 12-year-old sick boy was prescribed a biopsy from a tumor of the right auricle, with an ulcer, purulent discharge, sometimes with an admixture of blood. How to take material for analysis?

- A) curettage
- C) biopsy by massage and pressure
- C) biopsy by scraping with a spatula
- D) biopsy by using a sponge or swab to transfer cells to the sight glass, if it is not possible to apply the glass to the wound
- E) examination of secretions

3. Individual tasks for students of higher education on the topic:

- Compile an indicative map of pathomorphological examination of tissues in neoplastic processes of various organs.

4. List of recommended literature

Main :

1. Atlas of micropreparations in pathomorphology / I.I. Starchenko, B.M. Filenko, N.V. Royko and others; VDZU "UMSA". - Poltava, 2018. - 190 p
2. Fundamentals of pathology according to Robbins: in 2 volumes. Volume 1 / Vinay Kumar, Abul K. Abbas, John C. Astaire; translation of the 10th Eng. edition. Publishing house: All-Ukrainian specialized publishing house "Medytsyna". – X II. - 2019. - 420 p.
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- 4 . Pathomorphology. General pathomorphology: a study guide / edited by Ya. Ya. Bodnara, V.D. Voloshina, A.M. Romanyuk, V.V. Gargin. - New Book, 2020. - 248 p.
- 5 . Workshop on biopsy-sectioning course / I.I. Starchenko, A.P. Hasyuk, S.A. Proskurnya [etc.] – Poltava, 2016. – 160 p.

Additional :

1. Sorokina IV Biopsy-autopsy course (clinical pathology) / IV Sorokina, VD Markovskiy. - Kharkiv, 2012. - 60 c.
- 2 . General pathomorphology / I.I. Starchenko, N.V. Royko, B.M. Filenko [et al.] – Poltava, 2016. – 136 p.
- 3 . Zerbino D. D. Pathomorphology and histology: an atlas / D. D. Zerbino, M. M. Bagrii, Y. Ya. Bodnar, V. A. Dibrova. – Vinnytsia: Nova Kniga, 2016. – 800 p.
- 4 . Methods of morphological research / M.M. Baghrii, V.A. Dibrova, O.G. Papadynets, M.I. Grischuk; edited by M.M. Baghria, V.A. Dibrovyy – Vinnytsia: Nova Kniga, 2016. – 328 p.
- 5 . Pathomorphology: nats. handyman / V.D. Markovskiy, V.O. Tumansky I.V. Sorokina et al., edited by V.D. Markovsky, V.O. Tumanskyi. — K.: VSV "Medicine". 2015— 936 p., color. view. ISBN 978-617-505-450-5

Information resources

1. <http://moz.gov.ua> – Ministry of Health of Ukraine
2. www.ama-assn.org – American Medical Association
3. www.who.int - World Health Organization
4. www.dec.gov.ua/mtd/home/ - State Expert Center of the Ministry of Health of Ukraine
5. <http://bma.org.uk> - British Medical Association
6. www.gmc-uk.org - General Medical Council (GMC)
7. www.bundesaerztekammer.de – German Medical Association

8. <http://library.med.utah.edu/WebPath/webpath.html> - Pathology Laboratory
9. <http://www.webpathology.com/> - Web Pathology
10. National Scientific Medical Library of Ukraine <http://library.gov.ua/>
11. National Library of Ukraine named after V.I. Vernadsky <http://www.nbuv.gov.ua>

Topic 4. Biological death - definition, causes and terms of development during the natural course of the disease. Early and late signs of biological death and death of the patient after resuscitation. Morphological characteristics of cadaveric changes .

Purpose: The biological death of a person is established by a medical worker on the basis of the diagnostic criteria for the biological death of a person with the entry of relevant information into the patient's medical documentation. Therefore, it is necessary to know the causes and terms of the development of biological death during the natural course of the disease, early and late signs of biological death.

Basic concepts: death , clinical death, biological death, brain death, terminal condition, signs of death.

Plan

1. Theoretical questions:

biological death - the moment of irreversible cessation of cardiac activity and blood circulation, after which a person turns into a dead body - a corpse (cadaver).

MAIN CAUSES OF BIOLOGICAL DEATH

Among the main conditions preceding the biological death of a person (the main causes of biological death), the following can be distinguished:

1. multiple insufficiency (insufficiency of more than three vital organs);
2. failure of one vital organ (heart, lungs, head brain, kidney, liver);
3. deep disorders of systemic remomicrocirculation, vascular tone and volume of circulating blood (in case of irreversible shock, anaphylactoid and anaphylactic reactions);
4. acute disturbances of ion-osmotic ro, oxygen, carbohydrate balance and acid-base state;
5. sudden asystole (sudden cardiac arrest);
6. irreversible damage to the cardiorespiratory centers of the head trunk of the brain in post-resuscitation disease.

A decisive role in thanato r enesis is played by the cessation of cardiac activity and breathing, as well as irreversible cardiorespiratory (cardiorespiratory) damage brain stem centers. In the absence of cardiopulmonary resuscitation in such situations, biological death occurs within 6-10 minutes from the moment of cessation systemic blood circulation . Successful cardiopulmonary resuscitation after 3-5 minutes clinical death, intensive therapy and artificial ventilation of the lungs contribute to the restoration of cardiac activity and blood circulation, as well as the gradual restoration of breathing, neurological status, social functions and personality traits of a person.

Resuscitation after more than 10 minutes of clinical death, intensive care and artificial ventilation of the lungs can contribute to the recovery of cardiac activity, the complete recovery of breathing and the functions of other organs. However, in most patients, in such situations, full recovery cannot be achieved neurological functions , as well as intellectual and social personality characteristics.

Biological death due to post- resuscitation disease in a patient who is on artificial ventilation of the lungs, fixed after the last cardiac arrest with ineffective 30 -minute cardiopulmonary resuscitation. It occurs from the moment of irreversible loss of brain stem functions.

The moment of biological death in renal and hepatic failure is usually delayed for a period of several days to several weeks due to the inclusion of reserve and compensatory mechanisms. With full-fledged intensive therapy and the possibility of surgical correction of liver and kidney failure, patients live for many years.

SIGNS OF BIOLOGICAL DEATH, CORPORATE CHANGES

Taking into account cardiopulmonary resuscitation, as well as intensive therapy and three general artificial ventilation of the lungs performed by the patient, early and late signs of biological death are distinguished.

Early signs of biological death of a patient on artificial lung ventilation are the absence of blood circulation in the cranial cavity, deep coma, complete areflexia with the absence of reflexes of the brain stem and spinal cord, muscle atony, lack of spontaneous breathing, uncontrolled arterial hypotension, hypothermia, polyuria.

Late signs of biological death are the so-called cadaveric changes: cooling of the corpse, cadaveric incantation, redistribution of blood and corpse spots, drying of the conjunctiva of the eyes and mucous membranes, autolytic decomposition and secondary putrefactive changes of the corpse.

Cooling the corpse (algor mortis) develops in connection with the cessation of heat production, the temperature of the corpse's tissues gradually equalizes with the temperature of the surrounding environment. IN some to their cases (when dying from tetanus, poisoning strychnine) in the first hours may be short-lived an increase in the temperature of the corpse with its subsequent decrease. The first signs cooling of the face and hands the corpse's hands can be detected by touch after 1-2 hours. after the occurrence of biological death. After 4-5 hours it is possible to determine by palpation a decrease in the temperature of body parts, that are under clothing. In the armpits, in the perineum, the temperature decreases bodies can be palpated after 6-7 hours. Under room conditions (18 °C) and ordinary clothes the corpse of a person of medium nutrition cools at a rate of approximately 1 °C per hour, i.e. in 18-19 days. after death, the temperature of the corpse becomes even ambient air temperature.

Corpse spots (hypostatici , livores cadaverici , vibices) occur after the cessation of blood circulation in connection with the redistribution of the corpse's blood under the influence of gravity. Localization of corpse stains depends on the position of the corpse after death, usually they appear on parts of the body located closer to the ground. IN the first 3-6 hours after _ biological death, blood flows into the veins of the lower parts of the body, forming corpse hypostases (purple spots in the skin that turn pale when pressed) . In the distant period of the zone cadaveric hypostases are permeated by blood plasma diffusing from the vessels and hemoglobin that appears in connection with the postmortem hemolysis Thus corpse stains are transformed into spots of corpse imbibition, having a red-pink color and do not disappear when pressed .

Corpse incantation (rigor mortis) - compaction of striated and non- striated muscles , which occurs under the action of lactic acid, which accumulates in them after death . External signs of striated muscles are manifested by their rigidity, outline and relief. Muscle stiffness appears after 2-5 hours. after biological death, it begins with the masticatory and mimic muscles of the face and gradually covers the muscles of the neck, upper limbs and lower limbs. Rarely can develop an ascending type of incantation, in which it starts from the lower extremities and gradually rises to the masticatory and facial muscles. In case of artificial elimination (by splitting or bending the limb), the cadaveric sedation does not appear again. Corpse poisoning persists for 2-3 days, after which it spontaneously disappears in the same sequence.

Drying of the conjunctiva of the eyes, mucous membranes, and skin is associated with the evaporation of moisture from the surface of the corpse. With an open eye slit , the conjunctiva , which dries out, acquires a yellowish-gray color, the cornea becomes cloudy . Mucous membranes , that are in contact with air, become dry, dense, yellowish-gray. Dry , yellowish pus appears in the areas of the damaged epidermis and dermis . parchment the appearance of a stain.

Autolytic decomposition of a corpse is associated with postmortem passive by enzymatic hydrolysis of dead tissues . It occurs earliest in organs whose cells rich in

proteolytic enzymes (in the stomach , liver, pancreas) . To autolysis is quickly joined by putrefactive decay caused by bacteria .

Late cadaveric phenomena occur in the distant period after biological death and include secondary putrefactive changes of the corpse, its mummification and fat deposition.

Secondary putrefactive changes of the corpse initiate putrefactive bacteria that multiply from the intestines and quickly populate the dead tissue. The putrefactive flora of the large intestine is activated the earliest, the formation of putrefactive gases at room temperature from the 3rd day after death leads to swelling of the intestine, an increase in the volume of the abdomen and tension of the anterior abdominal wall. In tissues colonized by bacteria , gas bubbles appear with the phenomenon of crepitation, which is felt when palpating them (corpse emphysema). The reproduction of putrefactive bacteria leads to bacterial - enzymatic melting of tissues that become dirty green coloring, and is also accompanied by the release of stench.

Mummification - the drying of the corpse takes place in natural conditions in a dry place with the wind, with good ventilation and elevated air temperature. Under these conditions, the corpse a newborn can be completely mummified within 3-4 weeks , and an adult a person - from 3-4 to 6-12 months. The skin and coverings of the corpse become dense, brown , and brittle . Internal organs are significantly reduced in size, dense, have unexpressed microscopic structure . _

Fat burning (saponification, or saponification of a corpse) occurs in high humidity and lack of oxygen. It develops during burials in moist, clay soil and while the corpse is in the water. In conditions of high humidity and lack of oxygen, the putrefactive processes that have started gradually stop , the tissues of the organs are infiltrated water Fats are broken down into glycerol and fatty acids. Water-soluble glycerin and oleic acid are washed out of the corpse, and palmitic and stearic acids interact with salts of alkaline and alkaline earth metals (saponify). The appearance of

tallow wax depends on which elements prevail in the soil. A jelly-like, dark -grey mud, sebum is formed when fatty acids are combined with alkaline salts of sodium and potassium. Dense, grayish-white sebum with pronounced sebum shine and the unpleasant smell of rancid cheese is formed when fat is combined acids with alkaline earth calcium and magnesium salts.

Analysis of cadaveric changes is used in forensic medicine to establish the - approximate time of death, changes in position or movement of the deceased's body.

Questions for self-control

1. Definition of biological death, clinical death.
2. The main causes of biological death.
3. Early signs of the patient's biological death.
4. Late signs of biological death.
5. Concept of terminal state.

Indicative tasks for processing theoretical material

- Compile a dictionary of basic concepts on the topic.

2. Test tasks for self-control :

1. Sick S. _ 3 9-year-old, hospitalized and admitted to an infectious disease hospital with signs of acute poisoning due to consumption of poor-quality smoked fish. She died three days after hospitalization due to rapidly progressing hepatocellular insufficiency with the development of encephalopathy.

The autopsy revealed: jaundice of covering tissues and internal organs, point hemorrhages in the skin, mucous membranes, under the pleura, pericardium, periaortic tissue. The liver is significantly reduced in size (approximately 1.5 times), it is shriveled, with a shriveled capsule, grayish-yellow in color.

Based on the clinical and morphological analysis, the results of the autopsy, determine which liver pathology was the cause of death:

- A. Purulent cholangiolitis
- B. Acute toxic dystrophy of the liver
- S. Gilbert's syndrome
- D. Viral hepatitis
- E. Giardiasis

2. Patient S, 30 years old, who was involved in a car accident, was brought to the trauma department with an extensive soft tissue injury of the left thigh and a severe brain

concussion. Injured tissues suppurred. Acute renal failure developed. He died after 4 days due to oliguria-anuria.

At autopsy, brain tissues are moderately swollen, full of blood. The kidneys are enlarged, flabby, cortical layer with ischemia, yellowish-gray in color, with foci of necrosis, medullary layer full of blood, dark red in color. Based on clinical and anatomical data analysis, make a thanatological conclusion about the cause of death.

- A. Necronephrosis
- V. Uremia
- S. Acute adrenal insufficiency
- D. Lightning sepsis
- E. Traumatic encephalopathy

3. Patient A., 21 years old, hospitalized with extensive burns, the area of which is more than 50% of the body surface. The lesions began to epithelize, but oliguria and anuria developed, and the patient died three days later.

The autopsy revealed signs of uremia (croupous pleurisy and peritonitis, moderate swelling of the lungs and brain), numerous shallow erosions on the mucous membrane, as well as morphological signs of a shock kidney: the kidneys are enlarged, flaccid, with a wide pale-gray ischemic cortical layer and dark red pyramids of hemorrhages. Based on the clinical and morphological analysis, it should be assumed that this patient has developed:

- A. Acute pyelonephritis
- B. Necrotic nephrosis
- S. Tubulo-interstitial nephritis
- D. Obstructive paraproteinemic tubulopathy
- E. Pyonephrosis

4. A 38-year-old cement plant worker developed moderate diabetes, hypertension, and progressive obesity. She began to note the violation of the menstrual cycle and the phenomenon of virilism. She suffered from chronic bronchitis for 11 years. An examination in the endocrinology department revealed an elevated level of ACTH in the blood and bilateral hyperplasia of the adrenal glands. At the next medical examination, after some time, a nodule with a diameter of about 2 cm was detected X-ray in a basal location. Morphologically, small cell cancer was detected. Analyze the clinical and anatomical data of the given case. What is the main diagnosis that should be made:

- A. Basal small wedge lung cancer
- B. Basal lung cancer. Premenopause Diabetes.
- S. Itsenko-Cushing's disease
- D. Central lung cancer. Itsenko-Cushing syndrome
- E. Basal hormone-producing small cell lung cancer. Ectopic endocrinopathy.

5. A 59-year-old woman consulted a gynecologist about lower abdominal pain and

weight loss. During the examination, both ovaries are enlarged, with dense, smooth tumor nodes. In the left supraclavicular fossa, a lymph node $D = 1.5$ cm, dense consistency, painless on palpation. Soon shortness of breath appeared. The patient died with increasing symptoms of pulmonary and heart failure. At autopsy, tumor nodes of various sizes were found in the ovaries, lungs, and left supraclavicular lymph node. In the cavity of the sphincter, on the small curvature, a polypoid tumor on a wide base. In histological examination, in all localizations of the tumor—undifferentiated cancer. Based on the clinical and morphological manifestations, determine the localization of the primary tumor.

- A. Ovarian tumor
- B. Lung tumor
- S. Lymphogranulomatosis
- D. Tumor of the shunt
- E. Tumor of the stomach and ovaries

6. A 56-year-old man died of hepatic coma. At autopsy: exhaustion, jaundice, dystrophic changes of parenchymal organs. The liver weighs 3,500 g, is dense, lumpy due to many white tumor nodules with a diameter of 1-8 cm. In the lower lobe of the left lung, there is a subpleural localized tumor nodule that is not connected to the bronchus. Numerous small tumor nodes in the pararectal tissue. Analyze the morphological manifestations of the pathological process. It:

- A. Stomach cancer with hematogenous metastases in the liver, lungs, lymphogenic schnitzel metastases in the pararectal tissue.
- In Hepatocellular cancer, metastases in the lungs, stomach and pararectal tissue.
- C. Cholangiocellular cancer, metastases in the lungs, stomach and pararectal tissue.
- D. Lung cancer, metastases in the liver, stomach and pararectal tissue.
- E. Cancer of the rectum with metastases in the liver, lungs.

7. In a 6-year-old child who died of diphtheria, in connection with late admission to the hospital, the autopsy revealed a large, extremely flabby heart with sharply dilated chambers, significant hemorrhages in the adrenal glands, numerous hemorrhages in other tissues. Clinical manifestations: 2 weeks after the disease, shortness of breath, tachycardia, deafness of heart sounds, expansion of intercardiac dullness appeared. Analyze clinical and morphological data with the aim of establishing thanatogenesis:

- A. Asphyxia
- B. Paralysis of the diaphragm
- S. Multiple organ failure
- D. Toxic myocarditis
- E. Bacterial shock

8. A patient with fibro-cavernous tuberculosis of the lungs died of uremia. On autopsy: cachexia, each cover is hyperpigmented, in the right lung there are 2 caverns with a diameter of 4 and 5 cm, with a thick wall and remnants of caseous contents, the adjacent

lung parenchyma is fibrosed, the pleural cavity is obliterated. The left ventricle of the heart is hypertrophied (thickness 2.1 cm), the right ventricle is also hypertrophied (thickness 0.6 cm). Kidneys of normal size, dense, grayish-white in color, with cicatricial depressions. What kidney diseases became the main cause of death:

- A. Amyloidosis of the kidneys
- B. Necrotic nephrosis
- S. Glomerulonephritis
- D. Obstructive tubulopathy
- E. Tubulointerstitial nephritis

9. A 65-year-old patient, undergoing rehabilitation therapy in a cardiology sanatorium, fell ill with the flu and died 2 days later. An autopsy revealed numerous hemorrhages in the internal organs, serous and mucous membranes. Fibrinous-hemorrhagic inflammation in the mucous membranes of the respiratory tract. In the lungs, there are numerous small foci of serous-hemorrhagic pneumonia, foci of acute emphysema and atelectasis. The course of pneumonia was complicated by suppuration: a focus of purulent pneumonia was found in the left lung. Dyscirculatory disorders in the brain, moderate tissue swelling. Analyze the data to identify the underlying cause of death:

- A. Posthemorrhagic anemia
- B. Pulmonary heart failure
- S. Influenza encephalopathy
- D. Gangrene of the left lung
- E. Toxic acute renal failure

10. A 49-year-old patient suffered from a mitral heart defect for a long time, died of acute bleeding from varicose veins of the lower third of the esophagus. At autopsy: hypertrophy of the myocardium, stenosis of the mitral orifice due to fusion of the sides of the valve. 3 liters of clear, yellowish liquid was found in the abdominal cavity. The liver is reduced in size, dense, and the surface is bumpy. On the section, the liver parenchyma is grayish-yellow in color, consisting of small and large nodules. Dilated veins of the anterior abdominal wall, the lower third of the esophagus and hemorrhoids, a small amount of blood in the cavity of the esophagus. Conduct an analysis of clinical and anatomical data with the aim of establishing thanatogenesis:

- A. Acute heart failure
- B. Acute adrenal insufficiency
- S. Acute posthemorrhagic anemia
- D. Acute liver failure
- E. Acute hepatorenal failure

3. Individual tasks for students of higher education on the topic:

- Compile an algorithm for the development of postmortem early and late signs of death.

4. List of recommended literature

Main :

1. Atlas of micropreparations in pathomorphology / I.I. Starchenko, B.M. Filenko, N.V. Royko and others; VDZU "UMSA". - Poltava, 2018. - 190 p
2. Fundamentals of pathology according to Robbins: in 2 volumes. Volume 1 / Vinay Kumar, Abul K. Abbas, John C. Astaire; translation of the 10th Eng. edition. Publishing house: All-Ukrainian specialized publishing house "Medytsyna". – X II. - 2019. - 420 p.
- 3 . The basics of pathology according to Robbins: in 2 volumes. Volume 2 / Vinay Kumar, Abul K. Abbas, John C. Astaire; translation of the 10th Eng. edition. Publisher: All-Ukrainian specialized publishing house "Medytsyna". – X II. – 2019. – 512 p.
- 4 . Pathomorphology. General pathomorphology: a study guide / edited by Ya. Ya. Bodnara, V.D. Voloshina, A.M. Romanyuk, V.V. Gargin. - New Book, 2020. - 248 p.
- 5 . Workshop on biopsy-sectioning course / I.I. Starchenko, A.P. Hasyuk, S.A. Proskurnya [etc.] – Poltava, 2016. – 160 p.

Additional :

1. Sorokina IV Biopsy-autopsy course (clinical pathology) / IV Sorokina, VD Markovskiy. - Kharkiv, 2012. - 60 c.
- 2 . General pathomorphology / I.I. Starchenko, N.V. Royko, B.M. Filenko [et al.] – Poltava, 2016. – 136 p.
- 3 . Zerbino D. D. Pathomorphology and histology: an atlas / D. D. Zerbino, M. M. Bagrii, Y. Ya. Bodnar, V. A. Dibrova. – Vinnytsia: Nova Kniga, 2016. – 800 p.
- 4 . Methods of morphological research / M.M. Baghrii, V.A. Dibrova, O.G. Papadynets, M.I. Grischuk; edited by M.M. Baghria, V.A. Dibrovyy – Vinnytsia: Nova Kniga, 2016. – 328 p.
- 5 . Pathomorphology: nats. handyman / V.D. Markovskiy, V.O. Tumansky I.V. Sorokina et al., edited by V.D. Markovsky, V.O. Tumanskyi. — K.: VSV "Medicine". 2015— 936 p., color. view. ISBN 978-617-505-450-5

Information resources

1. <http://moz.gov.ua> – Ministry of Health of Ukraine
2. www.ama-assn.org – American Medical Association
3. www.who.int - World Health Organization
4. www.dec.gov.ua/mtd/home/ - State Expert Center of the Ministry of Health of Ukraine
5. <http://bma.org.uk> - British Medical Association
6. www.gmc-uk.org - General Medical Council (GMC)
7. www.bundesaerztekammer.de – German Medical Association
8. <http://library.med.utah.edu/WebPath/webpath.html> - Pathology Laboratory
9. <http://www.webpathology.com/> - Web Pathology
10. National Scientific Medical Library of Ukraine <http://library.gov.ua/>

Topic 5. International Classification of Diseases (ICD) is a normative document that ensures the unity of methodological approaches and international verification materials ICX of the 10th and 11th revisions. Work with the International Classification of Diseases of the X revision (1995) according to the pathological diagnosis of the autopsy.

Purpose: The purpose of the ICF is to create conditions for the systematic registration, analysis, interpretation and comparison of mortality data and morbidity, obtained in different countries or regions and at different times. IX is used to transform the verbal formulation of diagnoses diseases and other health-related problems into codes that facilitate data storage, collection and analysis.

ICF has become an international standard diagnostic classification for all general epidemiological purposes and many health management purposes. These objectives include the analysis of the general health situation of population groups, as well as the calculation of the frequency and prevalence of diseases and other health-related problems in their relationship to various factors.

Basic concepts: disease, MKH

Plan

1. Theoretical questions:

INTERNATIONAL CLASSIFICATION OF DISEASES

The International Statistical Classification of Diseases (ICD) is the main tool for developing information about the health of the population and the activities of health care institutions. It ensures methodological unity and comparison of the results of studying the morbidity

of the population, causes of death both within the country and between countries.

Currently, the Tenth Revision of the International Statistical Classification of Diseases and Related Health Care Problems (ICD-10), which was put into effect in Ukraine in health care institutions on January 1, 1999, is in effect.

With the use of ICD-10, not only diseases that have a clearly formulated diagnosis can be classified, but also other factors related to health, other variable indicators, such as the conditions and circumstances of life of persons suffering from certain diseases. Therefore, the ICD provides for the possibility of a wide variety of signs, symptoms, deviations discovered in the process of research, complaints and social circumstances that can be entered at the place of diagnosis in the medical documentation.

Construction of classification

Unlike the international nomenclature of diseases, statistical classification (IC) is based on the hierarchical principle of grouping diseases with the assignment of a code to each nosology (or disorder) with a letter of the English alphabet as the first character and numbers in the second, third and fourth characters of the code. For example, the diagnosis "Iron deficiency anemia secondary posthemorrhagic" is identified by code D50.0.

The first three characters of the code make up a rubric that basically identifies any disease of particular public health significance or high prevalence. The rubrics make up the "core" of the classification, at their level data are submitted to the WHO on the causes of death and the prevalence of a number of diseases for the purpose of conducting basic international comparisons. The fourth character of the statistical

code, which follows the decimal point, allows you to detail the content of the rubric. A four-digit code is defined as a subheading. In the example given above, the first three characters of the code attribute the anemia to the category of iron-deficiency anemia, which is identified by the rubric D50, and the fourth character .0 determines its etiology, namely, the occurrence due to blood loss.

The four-digit subheadings are an integral part of the ICD, and at their level, the causes of death and morbidity are coded for data submission to state statistics bodies, interregional comparisons, and in-depth statistical development in specific areas of medicine. The use of 4-digit subheadings is mandatory when coding morbidity and causes of death in medical and preventive institutions.

The first character of the ICX code is a letter. Each letter is associated with a separate class, except for the letter D, which is used in both class II "Neoplasms" and in class III "Diseases of the blood and hematopoietic organs and certain disorders involving the immune mechanism", as well as the letter H, which is used as in VII "Diseases of the eye and its accessory apparatus", as well as in class VIII "Diseases of the ear and mastoid". In four classes (I, II, XIX and XX), more than one letter is used in the first character of the corresponding codes.

Codes U00-U99 should be used for temporary coding of new diseases of unknown etiology. Codes U50-U99 can be used in scientific research.

Not all codes available in the class are used. For example, in class IX "Diseases of the circulatory system" (I00-I99), the block of diseases characterized by high blood pressure consists of codes -

I10-I15. The next block, ischemic heart disease, includes codes I20-I25. The spaces left between the blocks make it possible for future revisions to introduce the necessary additions without breaking the entire structure of the class. For the same purpose, the numbers of the fourth digits of the code sometimes remain vacant.

Entering letters as the first character of the rubric allows up to 100 diagnostic terms to be coded in each class at the three-digit level and further allows revisions of the classification without destroying its integrity.

MKH-10 consists of three volumes:

The 1st volume of the classification (in 2 parts) includes a complete list of headings, the code numbers of which are placed in the range from A00.0 to Z99.9. The diseases included in it are divided into 21 classes, each of which, in turn, is divided into "blocks" of homogeneous three-digit rubrics, which are interconnected by common characteristics. The hierarchical principle of construction of the classification (class, blocks, headings, subheadings) makes it possible to carry out statistical development at different levels of detail of the collected data.

In addition, the first volume includes the section "Morphology of neoplasms" for registration of the morphological type of neoplasm in a cancer patient. Morphological codes are five-digit codes: the first four identify the histological type of neoplasm; the fifth character of the code is the nature of the tumor (malignant primary, malignant secondary, metastatic, in situ, undetermined malignant or benign) from the point of view of the course of the disease.

The 2nd volume of the classification is instructional recommendations for the use of IKH-10.

Volume 3 includes the Alphabetical Index of Diseases and Injuries by Nature (Volume 1), which is a significant addition to it,

as it contains a larger number of diagnoses and specified conditions than in Volume 1. Thus, the Alphabetical Index includes almost all diagnostic terms used in medical practice.

Coding of mortality in accordance to the International Statistical Office classification diseases of the 10th revision

For professional coding of diagnoses to a medical worker it is necessary to use all three volumes of the classification in such sequences:

1. Determine the main term of the diagnosis to be coded and find it in the Alphabetical index (volume 3).

2. Read all the terms in parentheses, if any (these definitions do not affect the code number), and then all the terms that are located under the main term (these terms affect the code number). Read all notes, if any, and look carefully at the "See note" link. All this will allow you to fully take into account all the wording of the diagnosis and choose the right code.

3. Be sure to check the correctness of the choice made, using the Complete list of rubrics (volume 1). At the same time, it should be taken into account that if the Alphabetic index shows a three-digit code with a dash in place of the fourth character (.-), this indicates that the corresponding four-digit subheading should be found in volume 1. When checking the selected code, it is necessary to be guided by all the included and excluded terms that are relevant to the selected subheading, heading, block in which the heading is included, and disease class.

Only after these three mandatory actions can you assign a diagnosis code according to ICD-10.

Coding of causes of death

Statistics of the causes of death are one of the main sources of medical

information, which allows obtaining the most accurate data on the health of the population. According to the decision of the World Health Organization, the medical certificate on the cause of death must record all those diseases, pathological conditions or injuries that led to death or contributed to its occurrence, as well as the circumstances of the accident or act of violence that caused the fatal injury.

This definition does not include the inclusion in the medical certificate of symptoms and phenomena accompanying the onset of death (mechanism of death), for example, such as heart or respiratory failure, intoxication, multiple organ failure, etc.

Cause of death statistics are based on the concept of root cause, that is, on the selection of the disease or injury that caused the chain of pathological processes that led to death, as well as the registration of the circumstances of the accident or act of violence that caused the fatal injury. This is due to the fact that from the point of view of preventing death, the most effective measure is any influence on the primary cause and provided the necessary assistance is provided, to prevent its manifestations and interrupt the chain of pathological processes leading to death.

The medical worker who fills out the medical death certificate is obliged, on the basis of the results of the autopsy (if it was conducted) and the "Card of the inpatient" to determine the disease or condition that directly led to death and to analyze the chain of painful processes that caused this fatal condition, to isolate the root cause of this chain of events leading to death, that is, to determine the root cause of death.

The first part of paragraph 11 of the medical certificate of death is intended exclusively for the registration of painful conditions that make up this chain.

In the upper line a) of part I, the disease state that directly led to death is indicated. In the lines filled in below -

b), c) one in each line - pathological conditions (if any), which led to the immediate cause of death.

Why is the line "g" highlighted in the first part of the certificate? This line is intended to record the circumstances of receiving a fatal injury that occurred as a result of injuries, poisoning or other actions of external causes (that is, injuries that are registered by XIX class codes). If the death occurred as a result of these causes, filling in line "d" is strictly mandatory, since international comparisons of statistics of injuries and poisonings are carried out based on the data of this

line.

It is known that a number of medical measures can be complicated by severe, sometimes incompatible with life, pathological processes. According to the ICD, complications arising from therapeutic and surgical interventions (Y40-Y84) include:

7. complications associated with the use of medical devices and devices;
8. unexpected adverse reactions that occurred during administration, respectively to the prescription of medicinal products in therapeutic or prophylactic purposes dose;
9. accidental damage to the patient during surgical and therapeutic intervention;
10. surgical and therapeutic procedures that cause an abnormal reaction the patient;
11. remote complication without mention of unintentional harm during the procedure.

IN those in cases when fatal complications occur after justified and correctly conducted medical measures, they are interpreted as fatal complications of the main disease for which these measures are taken used For example: the main disease is pemphigus (L10), treated with

corticosteroids in therapeutic doses. Complications of the disease: acute steroid perforating stomach ulcer, spilled fibrinous-purulent peritonitis.

Along with this, a number of iatrogens should be interpreted as the main disease and the root cause of death. These include:

1. Unfavorable results of medical measures, which were carried out in case of a mistake diagnosis

2. An incorrectly performed medical procedure that caused death. For example, complications of catheterization of the subclavian vein, bronchoscopy, infusion therapy. In this case, a pathological diagnosis is offered formulate as follows: hearts .

The main disease : perforation of the wall of the right ventricle by the intravascular end of the catheter during puncture and catheterization of the right subclavian vein (date).

Complication of the main disease : pericardial tamponade by infusion liquid and blood; hydro-hemopericardium, edema of lungs, brain.

Comorbidity : parainfluenza of the second serotype (according to the results of a postmortem immunofluorescence study).

3. Complication of therapy with the development of dysbacteriosis, endo- and exogenous superinfection.

4. Fatal allergic reactions and other complications after drug administration drugs without prior allergy testing or neglect these data.

5. Transfusion of incompatible blood.

6. Death caused by complication of diagnostic manipulation purpose, as well as vaccination.

The International Classification of Diseases 11 revision (hereinafter ICD 11)

is a standard worldwide method of collecting data on mortality and morbidity, which allows for the optimal method of coding and statistical processing of medical information. It also allows you to organize health care management processes, redistribute financial and other resources, optimize scientific research, collect and take into account epidemiological information, contribute to the improvement of primary health care, regulate prevention and treatment issues, helping to get an idea of the situation in the field of health in individual countries, different population groups, age groups, etc. In English, the term International is used Classification of Diseases (ICD).

The World Health Organization (WHO) published the 11th revision of the International Classification of Diseases (ICD-11) in June 2018. Since 1992, ICD-10 has been in effect in the world, before it was revised once every 10 years. It is assumed that the new edition of the ICD will be submitted for approval to the World Health Assembly in January 2019, and it will enter into full force on January 1, 2022.

Disease classification is used by doctors, nurses, scientific researchers, statisticians and coders of medical information, information technology operators, insurance companies, organizations and official communities of patients, who do various aspects of medical care. The ICD (10th revision) has been translated into 43 languages and is used in 117 countries. The same indicators are expected within the framework of the use of the 11th revision of the ICD.

The ICD is of enormous importance by providing a common language for disease reporting and monitoring for the entire world. ICDs facilitate the comparison of data worldwide, facilitating the exchange of information in a standardized way between individual hospitals, settlements and entire countries. Also, the ICD simplifies the collection and storage of information for the purpose of further processing, statistical analysis, and development of methods for solving various health care issues.

The ICD is being revised once again, despite the long period of use (ICD 10 was used longer than any other version of the revised classification), in order to reflect the modern trends of scientific progress in health care. Also, given the current level of information technologies, ICD 11 will be used in electronic healthcare information

systems. The peculiarities of this revision are precisely the use of the Internet with the participation of all interested parties. Also, this review will be provided free of charge online for personal use. The information will be translated into many languages.

Questions for self-control

1. Definition, purpose and tasks of the International Exhibition of Culture.
2. Principles of disease classification.
3. Coding of causes of death.
4. Reasons for revising the International Convention. ICD-XI.
5. Differences between the last revision of the ICD and the previous ones.

Indicative tasks for processing theoretical material

- Compile a dictionary of basic concepts on the topic.

2. Test tasks for self-control :

Task 1.

In a patient with rectal cancer who died after a right-sided hemicolectomy with ileotransverse anastomosis, the autopsy revealed phlegmon of the anterior abdominal wall, diastasis of the surgical wound, insufficiency of the small-colonic anastomosis, external intestinal fistula, thrombosis of the right middle cerebral artery, widespread ischemic infarction of the right hemisphere of the head brain, ischemic heart attack of the left kidney and spleen, emphysema of the lungs, atherosclerosis of the abdominal aorta. What was the immediate cause of death?

- A. phlegmon of the anterior abdominal wall
- B. diastasis of the operative wound
- C. thrombosis of the right middle cerebral artery
- D. ischemic infarction of the spleen
- E. ischemic heart attack of the right hemisphere of the brain

Task 2.

During histological examination of the sectional material from a 50-year-old deceased, with a diagnosis of "Influenza", bilateral subtotal serous-fibrinous-hemorrhagic pneumonia, acute cerebral edema, serous-hemorrhagic bronchitis, right-sided chronic pyelonephritis, purulent anterior mediastinitis, and fibrinous pericarditis were found. Establish the underlying cause of death.

- A. influenza
- B. bilateral subtotal pneumonia

- C. cerebral edema
- D. right-sided chronic pyelonephritis
- E. fibrinous pericarditis

Task 3.

In a 3-year-old child with a congenital heart defect, an autopsy revealed a defect of the interatrial membrane, stenosis of the mouth of the main trunk of the pulmonary artery, hypertrophy of the right ventricle of the heart, thrombosis of the anterior, middle and posterior cerebral arteries, multiple foci of gray softening of the brain (midbrain, left hemisphere, central gyri of the right hemisphere), bilateral bronchopneumonia, spotty subpleural hemorrhages. The main disease is:

- A. cerebral artery thrombosis
- B. congenital heart disease - triad of Fallot
- C. hypertrophy of the right ventricle of the heart
- D. atrial septal defect
- E. bilateral bronchopneumonia

Task 4.

At the autopsy of a deceased 66-year-old patient, it was established: coronary heart disease, transmural myocardial infarction of the anterior-septal-lateral area of the left ventricle, post-infarction cardiosclerosis, mural thrombosis of the mouth of the anterior branch of the left coronary artery, pulmonary edema, left-sided hydrothorax (250 ml), fibrinous-cell tuberculosis of the right lung, right-sided bronchopneumonia of 6, 9 and 10 segments. The most important intermediate complication of the main disease (CHD) is:

- A. right-sided bronchopneumonia
- B. postinfarction cardiosclerosis
- C. ischemic heart disease
- D. fibrinous-focal tuberculosis of the right lung
- E. left-sided hydrothorax (250 ml)

Task 5.

In a 19-year-old woman in labor who died as a result of toxicosis in the second half of pregnancy and the postpartum period (eclampsia), the autopsy revealed cortical necronephrosis, uremic serous-fibrinous pneumonia, erosive gastroenterocolitis, hemorrhagic diathesis (small hemorrhages in the skin, serous and mucous membranes), jaundice, edema of the brain and lungs (150 ml and 100 ml), anasarca, in sputum - "cells of heart defects". Immediate cause of death.

- A. small hemorrhages in the skin
- B. uremia
- C. cortical necronephrosis
- D. erosive gastroenterocolitis

E. anasarka

Task 6.

In the deceased patient, 59 years old, with chronic osteomyelitis of the left tibia, the autopsy revealed left-sided calculous pyelonephritis, amyloidosis of the liver, spleen, kidneys with their secondary shrinkage, uremia (left-sided draining bronchopneumonia, right-sided serous-fibrous pleurisy, fibrinous pericarditis), fibrinous-focal pulmonary tuberculosis, cerebral edema, myocardial hypertrophy (heart weight 500 ml, left ventricular wall thickness - 2.1 cm). What is the underlying disease?

- A. myocardial hypertrophy
- B. calculous pyelonephritis
- C. fibrinous pericarditis
- D. uremia
- E. chronic osteomyelitis

Task 7.

In a patient with a diagnosis of cancer of the papillary papilla (histologically adenocarcinoma), who died after pancreatico-duodenal resection and gastroenteroanastomosis, the autopsy revealed metastases in the regional lymph nodes, liver, insufficiency of the duodenal stump and gastro-intestinal anastomosis, significant areas of retroperitoneal fatty tissue necrosis, diffuse purulent-fibrinous peritonitis, multiple liver abscesses, bedsores of the right half of the buttock, chronic obstructive bronchitis. Establish the immediate cause of death.

- A. purulent-fibrinous peritonitis
- B. chronic obstructive bronchitis
- C. metastases in the liver
- D. necrosis of retroperitoneal fatty tissue
- E. metastases in regional lymph nodes

Task 8.

In the deceased patient, 40 years old, the autopsy revealed hypertension (renal form), arteriosclerotic nephrosclerosis, hypertrophy of the left ventricular myocardium (1.6 cm), uremia, bilateral fibrinous-hemorrhagic pneumonia, fibrinous pericarditis, spotty hemorrhages in the visceral pleura, ascites (300 ml), chronic non-obstructive bronchitis. A concomitant disease of hypertension is:

- A. ascites (300 ml)
- B. chronic non-obstructive bronchitis
- C. myocardial hypertrophy
- D. bilateral fibrinous and hemorrhagic pneumonia
- E. fibrinous pericarditis

Task 9.

At the deceased patient, 63 years old, with alcoholic cirrhosis of the liver, at the autopsy, atherosclerosis, phleboscrosis and thrombosis of v. portae, splenomegaly, ascites (1400 ml), varicose veins of the esophagus, hemorrhoidal veins and "Medusa's head", bleeding into the gastrointestinal tract were found. (1100 ml), acute post-hemorrhagic anemia, hemorrhagic heart attacks of 4 and 7 segments of the right lung, left-sided small foci pneumonia. The complication that led to the immediate cause (acute posthemorrhagic anemia) of death:

- A. bleeding in the gastrointestinal tract
- B. varicose veins of the esophagus
- C. varicose expansion of hemorrhoidal veins
- D. general atherosclerosis
- E. alcoholic cirrhosis

Task 10.

In a patient who died after surgery to remove the left fallopian tube, with a diagnosis of left-sided tubal pregnancy, the autopsy revealed a rupture of the left fallopian tube (clinically), hemoperitoneum (1400 ml), acute posthemorrhagic anemia, edema of the lungs, brain, and uterine fibroids. The main cause of death.

- A. left-sided uterine pregnancy
- B. rupture of the left fallopian tube
- C. pulmonary edema
- D. hemoperitoneum (1400 ml)
- E. acute posthemorrhagic anemia

3. Individual tasks for students of higher education on the topic:

- Compile an indicative map of pathomorphological examination of tissues in neoplastic processes of various organs.

4. List of recommended literature

Main :

1. Atlas of micropreparations in pathomorphology / I.I. Starchenko, B.M. Filenko, N.V. Royko and others; VDZU "UMSA". - Poltava, 2018. - 190 p

2. Fundamentals of pathology according to Robbins: in 2 volumes. Volume 1 / Vinay Kumar, Abul K. Abbas, John C. Astaire; translation of the 10th Eng. edition. Publishing house: All-Ukrainian specialized publishing house "Medytsyna". – X II. - 2019. - 420 p.

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4 . Pathomorphology. General pathomorphology: a study guide / edited by Ya. Ya. Bodnara, V.D. Voloshina, A.M. Romanyuk, V.V. Gargin. - New Book, 2020. - 248 p.

5 . Workshop on biopsy-sectioning course / I.I. Starchenko, A.P. Hasyuk, S.A. Proskurnya [etc.] – Poltava, 2016. – 160 p.

Additional :

1. Sorokina IV Biopsy-autopsy course (clinical pathology) / IV Sorokina, VD Markovskiy. - Kharkiv, 2012. - 60 c.

2 . General pathomorphology / I.I. Starchenko, N.V. Royko, B.M. Filenko [et al.] – Poltava, 2016. – 136 p.

3 . Zerbino D. D. Pathomorphology and histology: an atlas / D. D. Zerbino, M. M. Bagrii, Y. Ya. Bodnar, V. A. Dibrova. – Vinnytsia: Nova Kniga, 2016. – 800 p.

4 . Methods of morphological research / M.M. Baghrii, V.A. Dibrova, O.G. Papadynets, M.I. Grischuk; edited by M.M. Baghria, V.A. Dibrovyy – Vinnytsia: Nova Kniga, 2016. – 328 p.

5 . Pathomorphology: nats. handyman / V.D. Markovskiy, V.O. Tumansky I.V. Sorokina et al., edited by V.D. Markovsky, V.O. Tumanskyi. — K.: VSV "Medicine". 2015— 936 p., color. view. ISBN 978-617-505-450-5

Information resources

1. <http://moz.gov.ua> – Ministry of Health of Ukraine

2. www.ama-assn.org – American Medical Association

3. www.who.int - World Health Organization

4. www.dec.gov.ua/mtd/home/ - State Expert Center of the Ministry of Health of Ukraine

5. <http://bma.org.uk> - British Medical Association

6. www.gmc-uk.org - General Medical Council (GMC)

7. www.bundesaerztekammer.de – German Medical Association

8. <http://library.med.utah.edu/WebPath/webpath.html> - Pathology Laboratory

9. <http://www.webpathology.com/> - Web Pathology

10. National Scientific Medical Library of Ukraine <http://library.gov.ua/>

11. National Library of Ukraine named after V.I. Vernadsky <http://www.nbu.gov.ua>

Topic 6. The procedure for appointing and conducting patho-anatomical autopsies of corpses. Terms. The procedure for conducting autopsies of corpses of persons who died in a hospital. The procedure for conducting autopsies of corpses of persons who died outside the hospital. The procedure for conducting autopsies on the corpses of newborns and stillborns, children's corpses.

Purpose: Autopsy has a great cognitive value, as it contributes to the accumulation of knowledge about human pathology at the organ, system, tissue, cellular and subcellular levels. Autopsy allows comparison of clinical and patho-anatomical diagnoses, which contributes to the improvement of medical and diagnostic measures in medical institutions and control over the activities of hospital departments. Autopsy allows comparison of clinical and patho-anatomical diagnoses, which contributes to the improvement of medical and diagnostic measures in medical institutions and control over the activities of hospital departments. Autopsy makes it possible to detect a defect in the management of a patient, to identify doctor's mistakes, to carry out scientific control over treatment activities, and to improve the qualifications of doctors.

Basic concepts: examination of the deceased (necropsy, autopsy)

Theoretical questions :

An autopsy (dissection, autopsy, autopsy) is an examination of the body of the deceased in order to identify structural changes in it. The death of a patient is a complete and irreversible cessation of the body's vital functions and, above all, the systems that regulate these functions (biological death). There are three types of death: natural, violent, and death caused by disease .

Cases of death that followed as a result of medical measures performed according to indications , but performed incorrectly, are the subject of forensic medical examination research. For example, transfusion of incompatible blood, overdose of potent drugs, gross error during surgical intervention, and so on.

Corpses of persons who died of diseases in medical and preventive institutions are subject to autopsy . In the case of death in a medical institution after diagnostic and therapeutic measures (for example, surgical trauma), an autopsy is also performed by a pathologist, although the resulting violent action led to death without any pathogenetic dependence on the underlying disease.

There are different methods of dissection : Vykrov , Heller-Zenker, Kyary , Letyulla, Abrikosov, Shor, combined methods.

Abrikosov's method involves the separate extraction of organ complexes: first, the organs of the oral cavity, breathing, blood circulation, and neck are removed as a general complex, while cutting the aorta and esophagus at the level of the diaphragm. Then the intestines, liver, stomach, pancreas, spleen and, finally, the genitourinary organs (kidneys, urinary tract, genitals)

According to Shor, they use the method of complete evisceration, in which all the organs of the neck, thoracic and abdominal cavities, and the pelvis are extracted as a single complex, without breaking the anatomical connection.

The autopsies are carried out in the established order .

Before proceeding to the autopsy, the pathologist carefully studies the medical history: he gets acquainted with the clinical course of the disease treated with therapy, the nature of medical interventions, if any (operation, transfusion of blood and fluids, resuscitation measures). The pathologist should pay attention to the form of taking a medical history, the content and sequence of records of the doctor's daily observations, laboratory tests, the content of the clinical epicrisis, the construction of the final diagnosis, and the timing of its establishment. If something is unclear in the card of an inpatient, the treating doctor present at the autopsy gives an explanation.

After identification of the corpse, they proceed to the external examination, paying attention first of all to the signs of death that has come: cooling of the corpse, clouding of the corneas; lack of reaction of the pupils to light, the presence of cadaveric darkening, cadaveric spots. During the external examination of the corpse, the gender, features of the body, the condition of the bone skeleton, the condition of the nails and skin of the deceased are determined (color, the presence of rashes, hemorrhages, swellings, surgical wounds, traces of medical manipulations), the condition of the visible mucous membranes of the oral cavity, eyes, etc. is determined

Already during an external examination, you can get a number of data that contribute to establishing a diagnosis. For example, strongly expressed cadaveric

emaciation is characteristic of diseases that are accompanied by exsiccation, for example, tetanus, in those who died from cholera. Weakly detected cadaver embrittlement or its absence speaks in favor of a septic state. Dark skin color indicates the presence of Addison's disease, which is accompanied by hyperpigmentation of the skin; cyanosis in cardiovascular failure.

Having finished the external examination, they proceed to dissection of cavities and examination of internal organs, their mutual location and deviations due to painful processes (adhesions, deformations). Particular attention should be paid to the examination of the abdominal cavity, pleural cavity (presence of fluid, adhesions, foreign bodies), condition of the peritoneum and other serous membranes (presence of loose overlays, clouding), condition of sutures in case of surgical intervention and condition of drainage.

After removing the organs from the corpse, their size, weight, shape, consistency, condition of the surfaces, and when cutting - the nature of the parenchyma are determined; the presence of pathological processes with a detailed anatomical picture of changes. Hollow organs are cut, while paying attention to the condition of the lining of the cavities and their contents. The integrity of the bones is studied, and to study the bone marrow, it is necessary to saw the sternum, the bodies of the vertebrae, and one of the tubular bones. Vessels and joints are examined.

Autopsies of corpses of stillborns and newborns differ in some features. The corpse should be weighed by measuring the length of the body and the circumference of the head. Indicate signs of prematurity (soft auricles, hair loss on the shoulders, back, umbilical ring below the middle of the distance between the pubis and the xiphoid process of the sternum, short nail plates, in girls - a gaping genital slit, in boys - the testicles are not lowered into the scrotum) or pregnancy (dense skull bones, fused seams), the condition of the umbilical remains. Unlike the autopsy of adult dead, the autopsy of the corpses of newborns begins with the body cavities, and ends with the opening of the skull. At the same time, conditions should be created for a thorough examination of the cerebellum of the tent and the sickle process, which are often

damaged during childbirth. At the autopsy of the brain, attention should be paid to the size of the ventricles of the brain, the presence of malformations, foci of necrosis and petrification.

At each pathological autopsy, a histological examination of organs and tissues is mandatory, the set of which varies depending on the nature of the disease. For this, the pathologist takes pieces from the organs and places them right there in a fixing liquid (most often it is a 10-12% solution of neutral formalin). Processing and preparation of this material for histological examination is carried out using the same methods as for biopsy. If necessary, the doctor conducts a separate collection of material for such special studies as cytological, microbiological, virological, cytogenetic, biochemical.

It is better to perform an autopsy of a deceased person from infectious diseases according to the Abrikosov method, preventing the spread of infected fluids and blood .

There is a certain algorithm in performing a pathological autopsy :

1. Conduct an autopsy in daylight, as artificial lighting changes color rendering.

2. Put on a robe and a rubberized apron on top of it, as well as armbands. It is recommended to use anatomical gloves. This will make it possible to prevent infectious diseases, as well as the penetration of corpse poison through possible skin defects.

3. External examination of the body of the deceased. They determine the sex, constitution, nutrition, condition of the integuments, the presence of signs of death, rashes, hemorrhages, wounds, ulcers, edema, etc. It is desirable that the attending physician confirms the passport data of the deceased.

4. Main sectional cut. It is necessary to ensure that it does not pass through postoperative incisions, scars and other defects.

5. A detailed examination of the cavities with clarification of the peculiarities of the position and interposition of organs, the presence of cysts, exudate, effusion, foreign bodies, etc.

6. Extraction from the cavities of organs and their research (size, weight, color, consistency, shape, etc.) with the simultaneous taking of a necropsy, as well as, depending on the tasks set before the examiner, material for bacteriological, serological, biochemical and virological studies. X-ray examination of the bones is sometimes carried out.

7. A brief summary with the formulation of the patho-anatomical diagnosis, the cause of death, the presence of possible discrepancies between the clinical and patho-anatomical diagnoses, clarification of additional issues of interest to clinicians.

8. Corpse toilet.

9. Logging of the autopsy.

PROVISIONS on the order of autopsy of corpses in medical and preventive institutions

As a rule, all corpses of deceased patients in medical and preventive institutions are subject to autopsy. The head doctor, head of the pathology office has the right to cancel the autopsy only in extraordinary cases. The head doctor, the head of the pathology bureau gives a written instruction in the hospital patient's card about the cancellation of the autopsy with the reasons for the cancellation of the autopsy. Controversial issues regarding autopsy are resolved by the chief pathologist of the region (city). Urgent autopsy of corpses is allowed to be carried out immediately after the doctors of the medical institution establish biological death; an autopsy in a planned manner (ordered autopsy) is performed after presentation of a card of an inpatient or a medical card of an outpatient with a visa of the chief physician or his deputy from the medical department on referral for a patho-anatomical autopsy. Medical documentation on the deceased from various hospitals is delivered to the post-mortem office (department) together with the corpse of the deceased. Medical records of inpatients who died in the

second half of the previous day are submitted to the pathology bureau, the pathology department of the hospital no later than 9 o'clock in the morning. The medical card of an inpatient with the patho-anatomical diagnosis entered in it is transferred to the medical archive of the hospital no later than 5-7 days after the autopsy. The card can be held for a longer period only with the special permission of the hospital management.

Cancellation of the autopsy is not allowed:

- a) in cases of death of patients who stayed in a medical and preventive institution for less than a day;
- b) in cases requiring a forensic medical examination;
- c) in case of infectious diseases and suspicion of them;
- d) in all cases of an unclear late-life diagnosis (regardless of the length of stay in a medical institution);
- e) in cases of death in a medical and preventive institution after diagnostic instrumental examinations, carrying out medical measures during or after surgery, blood transfusion, failure to take into account individual intolerance of medical drugs, etc.

The corpses of the deceased, whose identities have not been established, are submitted for forensic autopsy by order of the chief physician. If death occurred as a result of mechanical injuries, poisoning, mechanical asphyxiation, exposure to extreme temperatures, electricity, after an artificial abortion performed outside a medical institution, violent acts under conditions when there is evidence of the possibility of one of these causes of death, the chief physician of the hospital in the prescribed manner conducts sending the corpse to a forensic autopsy regardless of the time the patient was in the hospital. The chief (duty) doctor of the hospital is obliged to inform the prosecutor's office or the police about each such case in the hospital. If evidence of one of the reasons listed above is found during the pathological autopsy, the autopsy is stopped. The doctor conducting the autopsy takes measures to preserve the corpse and all its tissues for further forensic examination. A protocol is drawn up for the performed part of the pathological examination, at the end of which the reason for performing a

forensic autopsy is justified. The doctor is obliged to immediately inform the chief doctor about each case of suspended pathological autopsy, who immediately informs the prosecutor's office or the district police department about it and waits for the order of the prosecutor or the police authorities. Forensic autopsies of corpses of persons who died in medical institutions may be performed in the premises of the pathology department of this medical institution by full-time forensic medical experts or a doctor appointed for this purpose by the prosecutor's office. In the case of primary detection during the autopsy of an acute infectious disease or if it is suspected, the pathologist is obliged to inform the chief doctor of the medical institution about this and to send an urgent report about the infectious disease, food poisoning, general occupational poisoning, unusual reaction to vaccination (f. no. 058u) to the SES according to place of residence of the patient.

For the purpose of perfect control over the quality of diagnosis and treatment of patients in the outpatient network, autopsies of deceased patients may be performed at home in the following cases : deceased patients under the age of 50, who died suddenly at home with an unclear genesis of death (with the mandatory exclusion of violent death), were on the register of territorial polyclinics with suspicion of acute ischemic heart disease, cerebrovascular disease, neoplasm, acute respiratory disease.

Delivery of deceased outpatients to the patho-anatomical office (department) is carried out by vehicles of the medical and preventive institution. Along with the body of the deceased, an ambulatory card with an in-depth epicrisis should be sent, with a conclusion of the main clinical diagnosis, complications, accompanying pathology and the main cause of death. On the front side of the outpatient card there must be a record of the chief doctor (deputy) of the territorial polyclinic "For autopsy" and a signature. This is an order for units of the pathology service to perform an autopsy.

REGULATION on the procedure for autopsy of miscarriages with a body weight of 500.0 or more in terms of 22 weeks of pregnancy, regardless of live births or stillbirths that died in the perinatal period

All newborns who died in medical institutions, regardless of body weight and length, how long after birth they were alive, as well as stillborns with a weight of 1000 g or more and a body length of more than 30 cm, miscarriages are subject to autopsy and registration in the protocol of the pathological examination with a body weight of 500 g or more in terms of more than 22 weeks of pregnancy and regardless of live or stillbirth. In cases of autopsies of miscarriages, they are registered in the protocol of pathological examination, a perinatal death certificate is not issued for them. The litter is sent with the miscarriage and recorded as biopsy material. The results of the study are sent to the medical institution. The chief doctor of the maternity hospital ensures 100% autopsy of the corpses of stillborn and dead newborns, their delivery to the pathology office (department) no later than 12 hours after the birth of a stillborn or the death of a newborn. A stillborn is referred with a history of the infant's development and clinical epicrisis. The stillborn is sent to the pathology department with the litter. Postmortems from newborns are also sent for pathological examination, if they have symptoms of intrauterine disease, especially if intrauterine infection is suspected. In all cases, the droppings are registered as biopsy material. The head of the pathology department ensures 100% microscopic examination of the autopsy material of newborn corpses and litters. The chief physician and the head of the pathology department organize the necessary virological and bacteriological examination of the autopsy material of stillborns, deceased newborns and litters, using for this purpose the appropriate laboratories at the given medical institution or sanitary station. In cases of sudden death of children who were not registered at the dispensary, their corpses are subject to a forensic autopsy outside the medical institution. A pathologist may be involved for advisory assistance by agreement with the head of the forensic medical examination office. In case of sudden death of children who were registered at the dispensary, their corpses are dissected by pathologists. To unify the preparation of the patho-anatomical diagnosis of perinatally deceased, only the results of the autopsy of the corpses of fetuses and newborns and the patho-anatomical examination of litters are used. Clinical data on maternal pathology during pregnancy and childbirth are not

included in the pathological diagnosis. They must be recorded in the patho-anatomical epicrisis and in the death certificate. A perinatal death certificate or a preliminary perinatal death certificate, a pathological diagnosis and a protocol (card) of a pathological examination are drawn up by a pathologist on the day of the autopsy.

Questions for self-control

1. Documentation required for autopsy.
2. In what cases is it not allowed to cancel the autopsy .
3. Signs of death and their meaning.
4. External examination of the body and evaluation of the obtained data.
5. The most common methods of dissection and their features.
6. Macroscopic examination of cavities and internal organs, macroscopic differential diagnosis of detected pathological processes.
7. Peculiarities of autopsy of stillborns and newborns
8. Importance of autopsy for medical science and practical health care.
9. Clinical and anatomical analysis of a specific autopsy.

Indicative tasks for processing theoretical material

- Compile a dictionary of basic concepts on the topic.

2. Test tasks for self-control :

1. A 58-year-old patient in the therapeutic department with complaints of attack-like pains of a prickly nature in the region of the heart. With the phenomena of acute cardiovascular insufficiency, death. Specify the constituent part of clinical and anatomical epicrisis.

- A) subjective research data
- C) data on timely diagnosis and hospitalization
- C) anamnesis data
- D) data of laboratory and diagnostic research
- E) clinical symptoms of the disease

2. The man is 63 years old, the disease began acutely, when he felt a "blow to the back of the head", ringing in the ears, and sharp weakness. Death occurred from acute cerebral insufficiency, diagnosis: "Hypertensive disease of the I-II stage, subarachnoid hemorrhage." Specify the constituent part of clinical and morphological epicrisis.

- A) clinical
- B) morphological conclusion

- C) thanatological conclusion
- D) epidemiological conclusion
- E) clinical and laboratory conclusion

3. Patient K., who suffered from lumbosacral sciatica for 40 years, was hospitalized in the neurological department on June 3. From June 4, she received novocaine, analgin, calcium chloride. On June 6, at 15:00, after the administration of reopyrin, vitamin B12, and novocaine, the patient developed anaphylactic shock and, despite desensitizing therapy and resuscitation measures, on June 7, at 12:55 minutes, she was diagnosed biological death.

The final clinical diagnosis: lumbosacral radiculitis, complications of therapy (reaction to the administration of reopyrin and novocaine). Death is due to individual intolerance of medicinal substances with the development of acute cardiovascular failure, which is the direct cause of death. Death is associated with correctly performed medical procedures, the complications of which were impossible to predict. Specify the constituent parts of clinical and anatomical epicrisis.

- A) justification of the connecting disease
- C) justification of the diagnosis of the main disease
- C) justification of the clinical diagnosis
- D) justification of concomitant disease
- E) justification of background disease

4. Autopsy report. The corpse of a full-term newborn girl with a correct physique, satisfactory nutrition. The skin and visible mucous membranes are clean and bluish. Soft tissues of the head and bones the skull is intact. Sources are soft ordinary size The soft meninges are somewhat swollen, sharply full of blood, with focal hemorrhages, located on vaults hemispheres in the parietal and temporal lobes. The brain tissue is flaccid, pink-gray, border gray and white matter erased. Vascular plexuses of the grayish-pink, full-blooded, shiny. In the cavities of the middle ear on both sides in no changes were detected. The sinuses of the dura mater contain blood of a dark cherry, the umbilical cord is tied with a silk thread. Is the beginning of the descriptive part written correctly? autopsy report?

- A) so;
- C) no;
- C) it is necessary to start with a description of the organs of the cardiovascular system;
- D) it is necessary to start with a description of the organs of the respiratory system;
- E) it is necessary to begin with a description of the urinary systems;

5. Patient I., 30 years old, who suffered from chronic glomerulonephritis and volume with transition to the secondary kidney shrinkage. In the terminal stage of chronic obstructive pulmonary disease was made kidneys. In the nearest postoperative period in the patient had a cardiac arrest, which the clinicians regarded as acute cardiovascular failure. At the autopsy, in addition to pathological anatomical changes, which are characteristic for X H H, failure of arterial anastomosis sutures and retroperitoneal hematoma were detected. The immediate cause of death was post-hemorrhagic anemia, as a result arterial bleeding with anastomosis, which led to a sharp

drop in blood pressure and cardiac arrest. In this case, there is a clinical and patho-anatomical diagnoses (for a fatal complication), since the drop in blood pressure as a result acute blood loss was considered in the clinic as a manifestation of acute cardiovascular failure. Should pathologist epicrisis to reflect the reason for the discrepancy clinical and pathological diagnosis?

- A) so
- C) partially
- C) no
- D) analyze the clinical diagnosis in detail
- F) to analyze the pathological diagnosis in detail

6. A 25-year-old pregnant woman was to the emergency hospital for the first delivery, complicated by placenta previa and prolapse of the umbilical cord. A dead girl weighing 3300 g, length 51 cm, head circumference 35 cm.

Clinical diagnosis: intrauterine asphyxia. Is it necessary in the protocol of autopsy give a description of the macro- and microscopic examination of the placenta?

- A) so
- C) no
- C) at the request of the
- D) at the discretion of the head. separation
- E) at the request of relatives

7) A 60-year-old woman has been ill for 2 years. Several times she was in the hematological department on subject of chronic gynecological plasticity _ anemia I checked out every time with improvement . The last time I entered in a very difficult condition The dominant symptoms were: cervical lymphadenitis with fistulas, hepatoileal syndrome, hemorrhagic diathesis and anemia. Clinical and laboratory studies of peripheral blood provided the basis assume aleukemic form of chronic myelogenous leukemia with expressed hemorrhages Pathological diagnosis: aleukemic form of chronic myelogenous leukemia, hypochromic anemia and thrombocytopenia expressed hemorrhages Left-sided pneumonia. Exudative left-sided pleurisy. Swelling of the lungs. Dystrophy of parenchymal organs. Purpose writing a patho-anatomical epicrisis?

- A) addition of pathological diagnosis
-) instead of pathological diagnosis
- C) to fill out a medical certificate about death
- D) for submission to the registry office
for submission to the statistical department medical institution.

8) Patient N., 45 years old admitted to the end heavy condition on the 5th day from the onset of the disease due to gangrenous appendicitis and spilled purulent peritonitis. Urgent (in 1 hour 30 minutes after admission) surgical operation: appendectomy with drainage of the abdominal cavity. In the abdominal cavity there is a large amount of purulent exudate. Vermiform process sharply thickened, dirty green , the peritoneum is dull with fibrous overlays. After After surgery, the patient's condition continued to

deteriorate 4 days after the operation death from hypostatic pneumonia. Purpose writing a patho-anatomical epicrisis:

- A) clarification of the patho-anatomical diagnosis
 -) instead of pathological diagnosis
 - C) to fill out a medical certificate about death
 - D) for submission to the registry office
- for submission to the statistical department medical institution

9. An 80-year-old patient from acute gangrenous appendicitis. When describing the cardiovascular system, the following : "There is a small amount of transparent grayish liquid in the pericardial cavity. The epicardium is shiny with moderate deposition of fat under it. It is swollen in places. Vessels tortuous under the epicardium. The size of the heart is 8.5*9.2*4 cm. The wall of the right ventricle is 0.3 cm thick, the left one is 0.9 cm. There are pinkish-yellow blood clots in the heart cavity, moist and elastic. Heart valves are thin, , smooth. The muscle of the heart is brown-red , dense. The intima of the aorta in the region of the ascending part is shiny , pale yellow smooth. In the descending part, it is dull, rough, with with a large number of white and yellow plaques of different sizes, partially disintegrating and made of mush-like detritus.

In some ulcers greenish-black pieces of lime, crisp when cut. The width of the aorta above the valves is 7.5 cm, the ascending part of the - 7 cm. Coronary arteries focally thickened, but passable." Specify the deficiency in the descriptive part .

- A) the weight of the heart is not indicated
- C) the consistency of the heart is not indicated
- C) the color valves
- D) the intima of the aorta is not described
- E) the color hearts

10. At the autopsy of the corpse of a full-term newborn girl pieces from lungs were immersed in water and they sank like a whole lung immersed in water. What is the need to indicate this procedure in the protocol and ?

- A) establish a live birth
- C) establish stillbirth
- C) it is not necessary to carry out the procedure
- D) the procedure must be carried out for adults and children
- E) the procedure must be carried out for all deceased children

3. Individual tasks for students of higher education on the topic:

- Create (draw, describe, draw) a scheme for conducting an autopsy.

4. List of recommended literature

Main :

1. Atlas of micropreparations in pathomorphology / I.I. Starchenko, B.M. Filenko,

N.V. Royko and others; VDZU "UMSA". - Poltava, 2018. - 190 p

2. Fundamentals of pathology according to Robbins: in 2 volumes. Volume 1 / Vinay Kumar, Abul K. Abbas, John C. Astaire; translation of the 10th Eng. edition. Publishing house: All-Ukrainian specialized publishing house "Medytsyna". – X II. - 2019. - 420 p.

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5 . Workshop on biopsy-sectioning course / I.I. Starchenko, A.P. Hasyuk, S.A. Proskurnya [etc.] – Poltava, 2016. – 160 p.

Additional :

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3 . Zerbino D. D. Pathomorphology and histology: an atlas / D. D. Zerbino, M. M. Bagrii, Y. Ya. Bodnar, V. A. Dibrova. – Vinnytsia: Nova Kniga, 2016. – 800 p.

4 . Methods of morphological research / M.M. Baghrii, V.A. Dibrova, O.G. Papadynets, M.I. Grischuk; edited by M.M. Baghria, V.A. Dibrov – Vinnytsia: Nova Kniga, 2016. – 328 p.

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Information resources

1. <http://moz.gov.ua> – Ministry of Health of Ukraine

2. www.ama-assn.org – American Medical Association

3. www.who.int - World Health Organization

4. www.dec.gov.ua/mtd/home/ - State Expert Center of the Ministry of Health of Ukraine

5. <http://bma.org.uk> - British Medical Association

6. www.gmc-uk.org - General Medical Council (GMC)

7. www.bundesaerztekammer.de – German Medical Association

8. <http://library.med.utah.edu/WebPath/webpath.html> - Pathology Laboratory

9. <http://www.webpathology.com/> - Web Pathology

10. National Scientific Medical Library of Ukraine <http://library.gov.ua/>

11. National Library of Ukraine named after V.I. Vernadsky <http://www.nbu.gov.ua>

Topic 7. Pathological autopsy methods. Peculiarities of dissection of the corpse of a newborn, stillborn or fetus.

Purpose: Autopsy has a great cognitive value, as it contributes to the accumulation of knowledge about human pathology at the organ, system, tissue, cellular and subcellular levels. Autopsy allows comparison of clinical and patho-anatomical diagnoses, which contributes to the improvement of medical and diagnostic measures in medical institutions and control over the activities of hospital departments. Autopsy allows comparison of clinical and patho-anatomical diagnoses, which contributes to the improvement of medical and diagnostic measures in medical institutions and control over the activities of hospital departments. Autopsy makes it possible to detect a defect in the management of a patient, to identify doctor's mistakes, to carry out scientific control over treatment activities, and to improve the qualifications of doctors.

Basic concepts: newborn , stillborn, autopsy, pathological protocol

Plan

1. Theoretical questions:

Pathological autopsy methods

There is a certain algorithm in performing a pathological autopsy :

1. Conduct an autopsy in daylight, as artificial lighting changes color rendering.
2. Put on a robe and a rubberized apron on top of it, as well as armbands. It is recommended to use anatomical gloves. This will make it possible to prevent infectious diseases, as well as the penetration of corpse poison through possible skin defects.
3. External examination of the body of the deceased. They determine the sex, constitution, nutrition, condition of the integuments, the presence of signs

of death, rashes, hemorrhages, wounds, ulcers, edema, etc. It is desirable that the attending physician confirms the passport data of the deceased.

4. Main sectional cut. It is necessary to ensure that it does not pass through postoperative incisions, scars and other defects.

5. A detailed examination of the cavities with clarification of the peculiarities of the position and interposition of organs, the presence of cysts, exudate, effusion, foreign bodies, etc.

6. Extraction from the cavities of organs and their research (size, weight, color, consistency, shape, etc.) with the simultaneous taking of a necropsy, as well as, depending on the tasks set before the examiner, material for bacteriological, serological, biochemical and virological studies. X-ray examination of the bones is sometimes carried out.

7. A brief summary with the formulation of the patho-anatomical diagnosis, the cause of death, the presence of possible discrepancies between the clinical and patho-anatomical diagnoses, clarification of additional issues of interest to clinicians.

8. Corpse toilet.

9. Logging of the autopsy.

For the first time, the autopsy method was described in detail by R. Virkhov. Later, it was improved by Chiari, Letul, O. Abrikosov, and G. Shor. The last two methods are the most common in prosectoral practice.

O. Abrikosov suggests examining organs by cavities. First, the organs of the neck and chest cavity are removed in a complex. Then separate intestines, liver, stomach and duodenum in one complex, urinary tract and genitals also in one complex.

G. Shor proposed a method of complete evisceration of organs, which consists in removing the organs of the neck, chest, abdominal cavity and pelvis in the form of a single continuous complex. During the examination, the organs are also not separated from each other, that is, they maintain their

anatomical and physiological integrity. This method is quite convenient when examining the bodies of the deceased who died from postoperative interventions. In such cases, it is advisable to examine the area of the operative field in detail, namely the condition of surgical sutures, vessels, the presence and nature of exudate, and the correctness of the operation.

When dissecting corpses by the method of complete evisceration, the following sequence is followed:

- external examination of the corpse;
- incisions of body coverings, dissection and examination of the abdominal cavity;
- dissection and examination of the chest cavity;
- removal of organs of the neck, thoracic and abdominal cavities in the form of a single complex;
- research of the organs of the removed organ complex;
- dissection and examination of the skull cavity, removal and examination of the brain;
- dissection and examination of the sinuses;
- dissection and examination of the spinal canal, removal and examination of the spinal cord;
- limb dissection;
- cleaning the corpse.

Examination of the limbs and spinal canal with the spinal cord, paranasal sinuses during autopsy is carried out according to special indications (taking into

account the features of the clinical picture of the disease and the changes in the body systems detected by the pathologist).

The internal examination of the corpse usually begins with a median incision of the skin of the neck, chest, and abdomen. For this, a metal stand is placed under the shoulder blades of a corpse lying on its back. The pathologist, standing to the right of the corpse, cuts the skin and subcutaneous fat along the middle line with a small amputating knife, which he holds almost horizontally.

The most common is *median (direct) incision*, it starts 3-4 cm below the chin and leads to the handle of the sternum (cutting only the skin), then to the xiphoid process, cutting the covering to the bone. Along the front wall of the abdomen, the incision is continued along the middle line down to the pubic symphysis, bypassing the navel on the left.

In addition to the median incision described above, others are used in pathological practice. *Leschke's incision* allows you to remove the organs of the neck without damaging the skin: first, a semicircular dissection of the integuments is performed from one shoulder to the other along the second intercostal space. From the level of the second intercostal space, the knife is guided in the usual direction - along the middle line to the pubic symphysis, bypassing the navel on the left. From the edge of the semicircular incision, the skin is separated upwards - to the lower jaw - wrapping the formed flap on the face of the corpse.

According to *Fisher's method*, two incisions are made on the neck, starting from the nipples; both cuts converge at an angle to the handles of the sternum. Next, the knife is guided along the middle line, but after bypassing the navel, two incisions are again made in the direction of the inguinal regions. When separating the upper triangular flap, wide access to the neck and oral cavity is opened, the lower flap - to the vessels of the inguinal region.

According to *the Medvedev method* , two incisions are made on the neck - from the mastoid processes to the acromion of the shoulder blades, then both are connected by a transverse incision. The resulting flap is separated to the root of the nose, after which the organs of the neck, jaws, and face can be examined without disfiguring the corpse.

INSTRUCTIONS on the peculiarities and order of dissection of corpses of young children, newborns, stillborns, miscarriages and placentas

During the pathological examination of the corpses of young children, newborns, stillborns and miscarriages, it is necessary to keep the sinuses of the dura mater undamaged during skull dissection. After separating the scalp with a sharp method (scissors, the ends of which are bent at an angle), a hole is made in the area of the lambda suture and a horizontal cut is made along the parietal and frontal bones along with the dura mater. Having reached the middle of the frontal bone, the ends of the scissors are turned back and the frontal and parietal bones are cut along the frontal and sagittal suture at a distance of 1 cm from the latter. Then the incision is made along the lambda seam to the hole made earlier in it. The same incision is made on the other side, after which a bone plate about 1.5-2 cm wide remains in the middle of the skull along the arrow-shaped seam with the sickle-shaped process of the dura mater. Carefully pushing aside each hemisphere of the brain with a hand, the cerebellar tent and the sickle process are carefully examined, because tears and hemorrhages due to birth trauma are most often found in these places. Having singled out each hemisphere separately, the cerebellar tent is cut near the edge of the pyramid of the temporal bone and the brain stem is extracted together with the cerebellum and medulla oblongata. Other methods of skull dissection are possible, which guarantee against artificial postmortem damage to its contents. The spine is examined in all cases to determine the extent of its stretching. It is manifested by extreme mobility of the vertebrae in the cervical and thoracic regions along the longitudinal axis of the spine, as well as hemorrhages in the anterior longitudinal ligament of the corresponding intervertebral disc. The vertebral canal is opened not from the side of the back, as in adults, but from

the front after the removal of the organ complex. To do this, separate the bodies of the III and IV vertebrae, introduce into the vertebral canal the branches of pointed scissors, bent along the plane, and cut the arches of the vertebrae on one and the other side. After removing the vertebral bodies, the epidural space, spinal roots and intervertebral nodes are examined, then the spinal cord is pulled out and examined throughout. 152 When dissecting the front wall of the abdomen to preserve the integrity of the umbilical vessels, the middle incision ends 1-1.5 cm above the umbilical ring. From here, two incisions are made in the direction of the inner third of the inguinal folds. When the skin-muscle triangle is raised, the umbilical vein is stretched. It is opened with a longitudinal incision to the gate of the liver. The umbilical arteries lying on the sides are examined in transverse sections. If the possibility of umbilical sepsis is suspected, swabs for bacterial (bacterioscopic) examination are made from the contents of each vessel or from a scraping from the surface of the intima. Umbilical vessels for histological examination are taken in all cases. The lower epiphysis of the thigh must be examined on longitudinal sections, where the nuclei of ossification are marked and the state of the cartilage ossification line between the epiphysis and the diaphysis is determined. The corpses of miscarriages with a body weight of 500 g or more, newborns, stillborns, and children who died immediately after childbirth are delivered to the pathology bureau (department) together with litter. When examining the litter, its integrity, weight, shape, place of departure of the umbilical cord, its diameter and length are noted. Histological examinations of the membranes, umbilical cord and placenta must be carried out (membrane ñ 1-2 pieces, umbilical cord ñ 2-3 pieces, placenta ñ 6-12 pieces from different areas)

Questions for self-control

1. Pathological autopsy algorithm.
2. Shore's method of evisceration.
3. Method of evisceration according to Abrikosov.
4. The procedure for dissection of corpses of young children,
5. Procedure for dissection of corpses of newborns,

6. Procedure for dissection of corpses of stillborns,
7. Procedure for dissection of corpses of miscarriages.

Indicative tasks for processing theoretical material

- Compile a dictionary of basic concepts on the topic.

2. Test tasks for self-control :

1. The patient has been treated for chronic alcoholism for the past 2 years. Now he complains of a dull pain in the right hypochondrium, an increase in the volume of the abdomen, skin itching. The doctor performed a liver biopsy. He discovered portal cirrhosis of the liver. Select the type of biopsy in this case:

- A) forceps biopsy
- B) incisional biopsy
- C) puncture biopsy
- D) excisional biopsy
- E) endoscopic biopsy

The man suffered from bronchiectatic disease from early childhood . Recently, he complains of pain in the lumbar region, changes in the color and quantity of urine. During ultrasound examination, the kidneys are enlarged and dense. What type of biopsy can clarify the pathological process that has developed in the kidneys ?

- A) trepan biopsy
- B) excisional biopsy
- C) forceps biopsy
- D) endoscopic biopsy
- E) examination of secretions (urine)

3. A 55-year-old man underwent a biopsy, during which an exophytic tumor was found in the left main bronchus, narrowing the lumen of the bronchus by 2/3. Histologically - bronchus cancer. Name the type of biopsy in which pieces of the tumor were obtained :

- A) incisional biopsy
- B) puncture biopsy
- C) forceps or endoscopic biopsy
- D) trepan biopsy
- E) maz rk - reflection current

- old woman was brought to the surgical department with complaints of acute attack-like pains in the right lower part of the abdomen, nausea, vomiting. An appendectomy was performed. Histologically - superficial appendicitis. The name of the biopsy in this case ?

- A) incisional biopsy

- C) excisional biopsy
- C) forceps biopsy
- D) maz ok -repulse current
- F) curettage

5. The man suffered from stomach ulcer disease for a long time. During endoscopic examination, the biopsy revealed chronic gastritis. The edges of the ulcer are compacted with a tumor-like thickening. The biopsy material was delivered to the pathology department at the end of the working day, the doctor was not notified. How to fix the material?

- A) neutral formalin
- B) 10% alcohol solution
- C) sulema solution
- D) chloramine
- E) 96% alcohol

6. A 60-year-old man has been complaining of coughing attacks and expectoration of viscous sputum for several years. When examining the bronchi, areas of growth of granulation tissue, exploding into the lumen of the bronchus in the form of a polyp, were noted. During one of the patient's coughing fits, a dense piece of tissue was found in the sputum. Histological examination of a piece of tissue confirmed the diagnosis - polyp of the mucous membrane with foci of malignancy. What is the name of this type of rejection of pathological tissues?

- A) aspiration biopsy
- C) curettage
- C) random biopsy
- D) puncture biopsy
- F) incisional biopsy

7. A 35-year-old man had a cough with a lot of sputum for 1.5 months. Radiologically, the presence of exudate in the left pleural cavity. What type of biopsy will give an opportunity to investigate the nature of the exudate?

- A) smear-imprint
- C) biopsy by massage
- C) catheterization biopsy
- D) aspiration biopsy
- F) curettage

8. In a 30-year-old patient, during an operation for a mammary gland tumor, a compacted enlarged lymph node was found near the operative field. The surgeon sent the removed lymph node for an express examination. Did the surgeon act correctly in this case?

- A) it is not possible to process lymph nodes using the express method
- C) in this case it is necessary
- C) does the biopsy affect the course of the operation in this case
- D) express biopsy without the warning of the pathologist is possible
- E) there is no difficulty in carrying out cyto-diagnostics of lymph nodes

9. A tumor of the left ovary was found in a young woman. During the operation, the tumor (cyst) was large, 30*30 mm, with a dense capsule. The surgeon hesitated whether to send a piece of this mass for an express biopsy. Your opinion?

- A) it is possible to send 1 piece of cyst for an express biopsy
- C) many pieces from an ovarian cyst can be examined
- C) should not take responsibility for urgent research
- D) it is better to make urgent preparations on a freezing microtome
- E) express biopsy will not change the course of the operation

10. In the otolaryngology department, a 12-year-old sick boy was prescribed a biopsy from a tumor of the right auricle, with an ulcer, purulent discharge, sometimes with an admixture of blood. How to take material for analysis?

- A) curettage
- C) biopsy by massage and pressure
- C) biopsy by scraping with a spatula
- D) biopsy by using a sponge or swab to transfer cells to the sight glass, if it is not possible to apply the glass to the wound
- E) examination of secretions

3. Individual tasks for students of higher education on the topic:

- Compile an indicative map of pathomorphological examination of tissues in neoplastic processes of various organs.

4. List of recommended literature

Main :

1. Atlas of micropreparations in pathomorphology / I.I. Starchenko, B.M. Filenko, N.V. Royko and others; VDZU "UMSA". - Poltava, 2018. - 190 p
2. Fundamentals of pathology according to Robbins: in 2 volumes. Volume 1 / Vinay Kumar, Abul K. Abbas, John C. Astaire; translation of the 10th Eng. edition. Publishing house: All-Ukrainian specialized publishing house "Medytsyna". – X II. - 2019. - 420 p.
- 3 . The basics of pathology according to Robbins: in 2 volumes. Volume 2 / Vinay Kumar, Abul K. Abbas, John C. Astaire; translation of the 10th Eng. edition. Publisher: All-Ukrainian specialized publishing house "Medytsyna". – X II. – 2019. – 512 p.
- 4 . Pathomorphology. General pathomorphology: a study guide / edited by Ya. Ya. Bodnara, V.D. Voloshina, A.M. Romanyuk, V.V. Gargin. - New Book, 2020. -

248 p.

5 . Workshop on biopsy-sectioning course / I.I. Starchenko, A.P. Hasyuk, S.A. Proskurnya [etc.] – Poltava, 2016. – 160 p.

Additional :

1. Sorokina IV Biopsy-autopsy course (clinical pathology) / IVSorokina, VD Markovskiy. - Kharkiv, 2012. - 60 c.

2 . General pathomorphology / I.I. Starchenko, N.V. Royko, B.M. Filenko [et al.] – Poltava, 2016. – 136 p.

3 . Zerbino D. D. Pathomorphology and histology: an atlas / D. D. Zerbino, M. M. Bagrii, Y. Ya. Bodnar, V. A. Dibrova. – Vinnytsia: Nova Kniga, 2016. – 800 p.

4 . Methods of morphological research / M.M. Baghrii, V.A. Dibrova, O.G. Papadynets, M.I. Grischuk; edited by M.M. Baghria, V.A. Dibrov – Vinnytsia: Nova Kniga, 2016. – 328 p.

5 . Pathomorphology: nats. handyman / V.D. Markovskiy, V.O. Tumansky I.V. Sorokina et al., edited by V.D. Markovsky, V.O. Tumanskyi. — K.: VSV "Medicine". 2015— 936 p., color. view. ISBN 978-617-505-450-5

Information resources

1. <http://moz.gov.ua> – Ministry of Health of Ukraine

2. www.ama-assn.org – American Medical Association

3. www.who.int - World Health Organization

4. www.dec.gov.ua/mtd/home/ - State Expert Center of the Ministry of Health of Ukraine

5. <http://bma.org.uk> - British Medical Association

6. www.gmc-uk.org - General Medical Council (GMC)

7. www.bundesaerztekammer.de – German Medical Association

8. <http://library.med.utah.edu/WebPath/webpath.html> - Pathology Laboratory

9. <http://www.webpathology.com/> - Web Pathology

10. National Scientific Medical Library of Ukraine <http://library.gov.ua/>

11. National Library of Ukraine named after V.I. Vernadsky <http://www.nbu.gov.ua>

Topic 8. Pathomorphological bases of resuscitation and intensive therapy, their connection with the forensic assessment of changes in organs and tissues.

Purpose: During life, a person is under the influence of various exogenous and

endogenous factors of extraordinary strength, duration or unusual, unusual character. The action of extreme factors leads to the development or adaptation to this factor, or to an extreme (critical, urgent) condition.

Basic concepts: 1. Terminal states of the body: coma, asphyxia, shock, shock reactions, agony, clinical and biological death.

2. Diseases of the living organism: Resuscitation, resuscitation pathology, anoxic encephalopathy, "respiratory brain", cardiopulmonary syndrome, hepatorenal syndrome, gastrointestinal syndrome.

3. Sudden cardiac death: Sudden cardiac death, ventricular fibrillation, ventricular flutter, asystole, electromechanical dissociation of the heart.

Plan

1. Theoretical questions:

Terminal conditions are severe emergency conditions in which the body is between life and death, and the body's independent exit from such conditions is impossible.

Terminal states include:

1. coma
2. asphyxia
3. shock and shock reactions (collapse, fainting).
4. Agony
5. clinical death
6. biological death

Such conditions require immediate resuscitation measures.

Collapse is an acute form of vascular insufficiency, characterized by a drop in vascular tone and a decrease in the mass (volume) of circulating blood (CCB). As a result of a rapid decrease in BCC, the flow of venous blood to the heart decreases, blood pressure and blood pressure drop, which leads to tissue hypoxia, primarily the brain, with

inhibition of important body functions.

Types of collapse:

1. Orthostatic - due to a sharp outflow of blood from the head when changing the position from horizontal to vertical.
2. Infectious-toxic - in septic conditions.
3. Cardiogenic - with acute heart diseases.
4. Pancreatogenic - with acute pancreatitis.
5. Intoxicating - with various intoxications.

Clinic: collapse is characterized by sudden general weakness, dizziness, pallor of the skin. Shortness of breath, tachycardia develop, blood pressure and blood pressure drop, cold sticky sweat appears. Consciousness is usually preserved, less often it is clouded.

Treatment: The patient should be placed at an angle: the head is below the body to improve blood flow to the head. Adrenaline, norepinephrine are prescribed to improve the tone of blood vessels, cardiac drugs, polyglucin, gelatinol transfusion is possible to increase blood pressure, restore BCC.

Fainting is a sudden short-term loss of consciousness caused by temporary hypoxia of the brain. It has a reflex character and occurs when frightened, seeing blood, expecting pain, when suffocating, etc.

Clinic: fainting is accompanied by pallor of the skin, cold sweat, a decrease in blood pressure and weakening of the pulse, dilation of the pupils, loss of consciousness.

Treatment: the patient should be laid down, allowed to inhale ammonia, provide fresh air, and remove constricting clothing. Fainting does not require medical treatment.

Shock is a pathological process that develops as a result of the influence of extraordinary external or internal factors, which is manifested by disruption and inhibition of the central nervous system, hypotension, hypoperfusion of the microcirculatory channel, hypoxia of organs and tissues.

According to the etiological feature, shock is distinguished:

1. Traumatic

2. Fiduciary
3. Anaphylactic
4. Bacterial-toxic (septic)
5. Hemorrhagic
6. Hemotransfusion
7. Cardiogenic
8. Pancreatogenic
9. Hypovolemic.

During the shock, 3 phases are distinguished:

The 1st phase is erectile: it is characterized by the patient's disorder, increased pulse rate, short-term rise in blood pressure, microcirculation disorder, shortness of breath. The erectile phase is short-lived.

The 2nd phase is torpid: it is characterized by inhibition of the nervous system, due to which BP falls, BCC decreases, the pulse is weak and threadlike, patients become adynamic, drowsy, reflexes are suppressed.

The 3rd phase is terminal (paralytic): there is a breakdown of the compensatory capabilities of the body, blood pressure drops below a critical level, the pulsation of peripheral vessels is not determined, the skin acquires a marble color. A fatal outcome follows. A number of authors do not distinguish the 3rd phase separately.

According to the severity of the course, there are 4 degrees of shock:

shock of the 1st degree : condition of patients of moderate severity, pulse 80-100 beats per minute, systolic pressure 100 mmHg.

2nd degree shock: the patient's condition is severe, pulse 100-110 beats per minute, systolic pressure 80-100 mmHg.

3rd degree shock: the patient's condition is extremely serious, pulse 110-120 beats per minute, systolic pressure 60-80 mmHg.

4th degree shock: the patient's condition is practically pre-agonal, the pulse is more than 120 beats per minute or is not determined on the peripheral arteries, blood pressure

is less than 60 mmHg. or not defined.

In addition, the severity of shock is divided into 3 degrees based on the shock index (SI) - this is the ratio of PS pulse to systolic BP pressure. Normally AI = 0.5 (RS-60: AD-120). Grade 1 shock corresponds to AI = 1.0 (RS-100: AD-100). Shock of the 2nd degree corresponds to AI = 1.5 (PC-120: AD-80). Grade 3 shock corresponds to AI greater than 1.5 (RS greater than 120: BP less than 80).

Treatment: shock requires emergency care, which consists of:

- in the elimination (if possible) of the cause of shock (narcotic analgesics, immobilization and novocaine blocks for fractures, termination of blood transfusion - for hemotransfusion shock, etc.).
- in the use of vasoconstrictor drugs (adrenaline, norepinephrine).
- in the use of corticosteroid hormones (prednisolone 80-120 mg).
- in the use of antihistamine drugs (diphenhydramine, pipolfen).
- infusion of anti-shock solutions (polyglukin, gelatinol).
- in the transfusion of protein preparations (albumin, plasma).
- prevention of DIC syndrome (heparin, contrical).

In severe cases of shock, anesthesia with artificial ventilation of the lungs is performed.

Agony - a period when blood pressure progressively decreases, the heart rate decreases, the pulse becomes rare, consciousness is depressed.

In the future, muscle tone decreases, sphincters relax, involuntary urination and excretion of feces occur. As a result of blood stagnation in the lungs, the permeability of the vessels of the small blood circulation increases, the swelling of the lungs increases and breathing becomes violently hoarse. Due to severe hypoxia and depression of the respiratory center, atonal breathing appears, reflexes disappear, in particular the reaction of the pupils to light. Further, clinical death develops.

Clinical death is a reversible stage of dying, which is characterized by the cessation of breathing and blood circulation, but the possibility of life recovery remains for some time.

This stage of dying lasts 5-6 minutes, during which the viability of the brain is

preserved. In slow dying, clinical death is preceded by agony.

Biological death is an irreversible stage of dying that follows clinical death and is characterized by the cessation of metabolism in the brain, and then in other organs, in the tissues of which irreversible changes incompatible with life develop.

Pathological anatomy.

Biological death is manifested by a number of signs. These include corpse cooling, corpse desiccation, corpse hypostasis, corpse stains, corpse tanning, postmortem autolysis and corpse decomposition, tissue decay and corpse decomposition.

Cooling of the corpse to ambient temperature begins some time after the cessation of breathing and blood circulation. This happens due to the cessation of metabolism, the generation of energy and heat.

Corpse drying begins as a result of the release of moisture into the environment. At the same time, the cornea of the eyes becomes cloudy, and yellow-brown "parchment" spots appear on the skin.

Corpse hypostasis - crimson-violet spots that disappear when pressed, develop after 3-5 hours as a result of redistribution of blood: the left chambers of the heart become empty, and in its right chambers, shiny smooth blood clots of red or yellow color are formed. Arteries also become empty, and the veins of the lower parts of the body are filled with blood.

Corpse spots develop as a result of postmortem hemolysis of erythrocytes: blood plasma containing hemoglobin leaves the veins and seeps into the tissues, after which the corpse hypostases no longer disappear when pressed.

Morbidity begins 2-6 hours after death. It appears in the muscles of the face and gradually spreading to the muscles of the trunk and lower limbs, after 24-32 hours it captures all the muscles. Muscles become very tight, lose elasticity and elasticity. The speed and nature of cadaveric browning depend on various reasons - the temperature of the environment, the nature of the disease and the condition of the patients before death. So, in exhausted, weakened by the disease deceased, as well as in small children, cadaveric emaciation can be weakly expressed. In premature fetuses, cadaveric

browning does not develop at all. After death from some infectious diseases (tetanus, cholera), cadaver emaciation develops quickly and is expressed very sharply. After 2-3 days, the corpse tan disappears.

Postmortem autolysis and cadaveric decomposition develop in dead cadaver tissues. These changes occur earlier in organs containing many proteolytic enzymes - in the liver, pancreas, and stomach.

Rotting of tissues is due to putrefactive processes as a result of the decomposition of intestinal bacteria in the tissues of the corpse. They melt, acquire a dirty green color and a foul smell.

Corpse decomposition is characterized by the fact that the gases produced as a result of decay permeate the tissues of the corpse and accumulate in the cavities. The corpse swells, sometimes to enormous sizes.

Reanimation - restoration of vital functions of the body.

DISEASES OF AN ANIMATED ORGANISM.

Postreanimation disease.

Disturbances in the functions of organs and tissues arising in the post-resuscitation period are superimposed on the manifestations of the underlying disease that caused clinical death. At the same time, post-resuscitation disorders are often expressed more intensively than changes associated with the underlying disease. Such disorders are manifested by the predominant damage of one or another physiological system in the form of certain syndromes.

Anoxic encephalopathy - damage to the brain due to severe oxygen starvation - is one of the main causes of death of patients in the postreanimation period.

At the heart of this brain damage are its edema and swelling, which arise as a result of hypoxia, increased permeability of blood vessels and the outflow of fluid from the blood vessels into the brain tissue. Widespread ischemic damage to the brain occurs, ending with the death of neurons and the disintegration of white matter fibers. These

disorders develop mainly in the cerebral cortex and cerebellum. Severe damage to the cortex leads to sharp suppression, and later to the loss of its functions - decerebration. This condition is called "brain death", because irreversible decerebration with a working heart means the death of a person as a social being, since only the functions of the brain determine the mental activity and individuality of a person. Along with this, decerebration usually ends with cessation of breathing.

If breathing stops with preserved cardiac activity and artificial ventilation of the lungs is used for a long time, even deeper damage to the brain - "respiratory brain" - can develop.

There is a displacement of the brain as a result of its deformation during edema and swelling, the formation of foci of disintegration of nervous tissue. Partial necrosis of brain tissue is also possible, most often it is symmetrical necrosis of subcortical formations. In extremely severe cases, necrosis of the entire brain occurs. Its substance acquires the character of a structureless semi-liquid mass enclosed in the meninges. Reflex activity. The central nervous system is absent, there is no own breathing, the bioelectric activity of the brain disappears. Cerebral blood flow is sharply disturbed or completely turned off, although cardiac activity can be preserved for a long time. As a result, cardiac arrest develops. Irreversible decerebration, and even more so total brain necrosis, are incompatible with life.

Cardiopulmonary syndrome will often occur after resuscitation even in the absence of severe brain damage. It is manifested by insufficiency of the function of the heart and lungs.

Damage to the heart in the post-resuscitation period is associated with protein and fatty dystrophy of the myocardium, death of groups of cardiomyocytes. These disorders arise as a result of myocardial hypoxia and its overload due to impaired blood circulation in the small circle. Hypoxia of the lung tissue in the post-resuscitation period causes microcirculation disorders and the development of thrombosis. Against this background, as a result of long-term use of artificial lung ventilation, they often develop bronchopneumonia, abscesses, etc. Clogging of small bronchi with mucus and

cellular detritus, damage to alveolar-capillary membranes, bronchopneumonia lead to insufficiency of gas exchange in lung function.

Hepato-renal syndrome occurs in the post-resuscitation period together with anoxic encephalopathy and cardiopulmonary syndrome, intensifying their course.

Insufficiency of liver and kidney function develops as a result of blood circulation disorders. Blood stagnation in the portal vein system, diffuse protein and fatty dystrophy of hepatocytes, foci of necrosis in the liver along with a sharp violation of microcirculation are observed. Ischemia and foci of necrosis occur in the kidneys. Particularly severe disorders of kidney function are observed with the breakdown of a large mass of skeletal muscles, which appears when the body dies and revives due to microcirculation disorders and the related necrosis of the muscles of the back, shoulder girdle, buttocks and thighs. The melting of muscle cells (myolysis) leads to the appearance of the muscle protein - myoglobin - in the blood plasma and its excretion by the kidneys. As a result, the tubules are blocked by this protein, the epithelium of the tubules is necrotized, and the excretory function of the kidneys is disturbed (myoglobinuric nephrosis). Insufficiency of the liver and kidneys contributes to the accumulation of toxic metabolic products in the blood, changes in KSHR and ion balance, protein composition of the blood, which complicates the course of encephalopathy and cardiopulmonary failure.

Gastrointestinal syndrome in the post-resuscitation period occurs less often than other disorders. Bleeding erosions and ulcers may occur as a result of general blood circulation disorders, blood stagnation in the portal system, and microcirculation disorders in the stomach and duodenum. It is possible to have a stomach or intestinal ulcer with the development of purulent peritonitis. In recent years, in the post-resuscitation period, large necroses with hemorrhagic leakage are increasingly found in the small intestine, the basis of which is thrombosis of venules, which spreads to large vessels, up to the portal vein.

SUDDEN CARDIAC DEATH.

Sudden cardiac death (sudden cardiac death; sudden coronary death) - a fatal outcome

of a cardiovascular system disease occurred naturally within one hour of the onset of its development in persons who were in a stable condition before that (in the absence of signs that allow making another diagnosis).

In 1964, a group of WHO experts first recommended a unified definition of sudden death, according to which the non-violent death of a healthy or sick person who was in a satisfactory condition, occurring unexpectedly within 6 hours, refers to sudden death. A few years later, it was proposed to consider sudden death as a natural death that occurred unexpectedly within 24 hours of the onset of acute symptoms.

Sudden cardiac death includes cases of sudden cessation of cardiac activity, which are characterized by the following signs:

- death occurred in the presence of witnesses within one hour after the appearance of the first threatening symptoms
- before the onset of death, the condition of the patients was assessed by those around them as stable and does not cause serious concerns
- death occurred under circumstances that exclude other causes (violent death, injuries, other fatal diseases)

Etiology:

Etiological risk factors are of great importance in understanding the occurrence of a fatal outcome. Myocardial infarction and its complications, such as cardiogenic shock, pulmonary edema, heart rhythm disturbances, may also be a combination of cardiogenic shock with pulmonary edema or rhythm disturbances with pulmonary edema. In second place are rhythm disturbances (atrial fibrillation), in third place are cardiomyopathies, in fourth place - angina pectoris and heart defects, in fifth place - pulmonary embolism. In addition, there are other risk factors, such as myocarditis, conduction disorders of unclear etiology (complete atrioventricular block, prolonged Q-T syndrome), postmyocarditis cardiosclerosis, mitral valve prolapse.

Morphological studies in the suddenly deceased showed that the most frequent etiological factor of sudden death is coronary heart disease, and the severity of

atherosclerotic lesions of the coronary arteries and changes in the myocardium is one of the important risk factors for sudden death. In most cases, foci of acute ischemic changes in the myocardium are found in those who died suddenly. Rarely, sudden arrhythmic death is observed in patients with rheumatic and congenital heart defects, postmyocardial cardiosclerosis, obstructive and dilated cardiomyopathy, alcoholic myocardial dystrophy, as well as in patients with ventricular hyperexcitation syndromes and prolonged QT interval, mitral valve prolapse, etc.

Individual cases of sudden death of arrhythmic persons without organic heart pathology are known.

Analysis of ECG monitoring data at the time of sudden circulatory arrest shows that in approximately 90 percent of cases, the mechanisms of the latter are ventricular fibrillation, which is often preceded by episodes of paroxysmal ventricular tachycardia, which turns into ventricular flutter. Sometimes ventricular tachycardia, which precedes fibrillation, has a bidirectional, spindle-like shape (like a "pirouette") on the ECG. In a significant number of cases, ventricular extrasystoles are registered immediately before the development of ventricular fibrillation, especially volleys of polymorphic complexes that begin with an early out-of-order contraction. Less often, ventricular fibrillation develops as a result of an acute violation of intraventricular conduction. At the same time, progressive expansion of the QRS complexes is observed on the ECG, and then ventricular flutter and fibrillation appear. This phenomenon may occur as a result of the use of antiarrhythmic drugs that slow intraventricular conduction.

One of the possible mechanisms of sudden arrhythmic death is ventricular asystole. According to various authors, primary ventricular asystole occurs in 5-20 percent of cases of sudden circulatory arrest. Ventricular asystole can be a consequence of atrioventricular block or weakness of the sinus node. The development of cardiac asystole can be facilitated by ectopic arrhythmia, oppressive function of the negative node or atrioventricular conduction. Thus, asystole sometimes occurs after a single extrasystole or a group of extrasystoles, against the background of a paroxysm of

supraventricular or ventricular tachycardia, flickering or fluttering of the atria.

The main electrophysiological mechanisms of VKS:

1. Ventricular fibrillation. The immediate cause of fibrillation is acute coronary insufficiency due to coronary artery thrombosis, a sharp increase in myocardial oxygen demand, a decrease in systolic and diastolic pressure, perfusion coronary pressure, coronary spasm. Ventricular fibrillation is characterized by random excitation of individual muscle fibers and lack of coordinated contraction of the ventricles.
 2. Fluttering of the ventricles. Coordinated contractions of the ventricles still occur, but their frequency is high (200-300 per minute) and there is no systematic ejection of blood into the aorta. In 75% of cases, flutter turns into ventricular fibrillation.
 3. Asystole of the heart - complete cessation of contractions of the heart, its stop. It is due to a violation of the automaticity function of the pacemakers of the 1st, 2nd, and 3rd orders (weakness of the sinus node with the absence of functioning or exhaustion of the function of the lower pacemakers).
 4. Electromechanical dissociation of the heart is the termination of the pumping function of the left ventricle while maintaining signs of electrical activity of the heart (gradually depleting sinus nodal or idioventricular rhythm, which turns into asystole).
2. The most frequent mechanism of VKS development is ventricular fibrillation, which can occur both against the background of acute myocardial ischemia and possibly without it. Other mechanisms (asystole, electromechanical dissociation), as a rule, develop in patients against the background of other severe complications (shock, heart failure, violation of atrioventricular conduction and myocardial rupture).
 3. The occurrence of ventricular fibrillation (VF) is explained either by the occurrence of conditions for the ectopic formation of the impulse, or by the

mechanism of reentry. Ectopic foci can occur as a result of increased automatism or the appearance of various types of residual oscillations. The reentry mechanism occurs if a premature impulse leads to a disruption of the propagation front of the excitation wave.

4. Both in the intact heart and in the body, single electrical impulses cause a single response, but suprathreshold stimuli applied during a short vulnerable period of the cardiac cycle induce multiple corresponding contractions and VF. With AMI or acute ischemia, the threshold for repeated response is reduced, remaining significantly higher than the threshold for a single response. In this regard, it is possible to postulate electrical instability of the myocardium (EMI), when a stimulus of threshold intensity induces repetitive electrical activity in the heart (B. Laun, 1983). In other words, the electrical instability of the myocardium is a decrease in the threshold for the occurrence of VF.

Pathomorphological changes in sudden death.

A decrease in the vessel lumen by 50 percent or more is accepted as a criterion for a stenotic lesion.

Most often, stenoses are localized in the anterior descending branch of the left coronary artery, less often in the right coronary artery and in the branches of the left coronary artery. Atherosclerotic stenosis of the main trunk of the left artery and the mouth of the coronary artery is rarely the only site of significant obstruction in sudden death. Roberts and Buya L.M. established that the atherosclerotic process captures only extramural vessels. In the arteries going perpendicular to the endocarditis, they did not find any changes that could be attributed to atherosclerotic ones. In a number of other studies, it has been noted that pathological changes in intramyocardial arteries as the main vascular lesion in sudden death are rare and almost always exist in isolation from atherosclerotic lesions of epicardial coronary arteries. The absence of acute changes in the main branches of the coronary arteries in most cases of sudden death indicates the presence of other causes causing electrophysiological disturbances that eventually lead

to ventricular fibrillation. With this formulation of the question, it should be considered legitimate to assume that fatal heart rhythm disturbances in such cases may be the result of relatively small foci of ischemia as a result of embolization of small vessels or the formation of small thrombi in them. The source of small emboli can be an ulcerated plaque in the aorta or large trunks of coronary arteries. The sudden onset of ventricular fibrillation is difficult to explain only by long-term damage to the coronary arteries.

The absence of fresh thrombosis of the coronary arteries requires the search for other reasons that explain the immediate cause of sudden death. In this connection, several hypotheses can be expressed.

One of them assumes that the possible cause is acute myocardial ischemia, which occurs in connection with an increase in the myocardial oxygen demand during physical, psychoemotional or other nature (alcohol intake) load, which is accompanied by a sharp release of catecholamines, and which cannot be cut out an adequate increase in coronary blood flow due to a significant narrowing of the lumen of the artery.

The second hypothesis relates sudden death to a decrease in coronary blood flow due to a significant drop in blood pressure that can occur during rest or sleep. The discrepancy between the need for oxygen is caused by spasm of the coronary artery. Indirect data indicate that all the listed factors can play a fatal role in different groups of patients.

Pathological anatomy.

In most cases of VKS in patients with coronary heart disease, stenotic lesions of the main trunks of the coronary arteries are found. Stenoses are more often localized in the anterior descending branch of the left coronary artery, somewhat less often - in the right and left branches. There are also hemorrhages in atherosclerotic plaques, tears and ruptures of their fibrous ring, small wall thrombi. Thrombosis of the coronary arteries is found in 10-50 percent of cases of VKS. According to N.A. Mazur, V.M. Zhukov died among those who died from VKS. (1976), Vyherta A.M. (1980) AMI is detected in 13-40 percent, large post-infarction scars - in 34-49 percent of cases.

Structural changes in single muscle cells or small cell groups are often detected. In most cases, the weight of the heart is increased.

Abnormalities of the development of coronary arteries, aneurysm of the aorta with spread to coronary vessels, arteritis, embolism of coronary vessels, etc. can be a rare cause of VKS. Reasons. With perinatal prolongation of the Q-T interval, lesions of intracardiac nerves and nodes are found at autopsy in a number of cases.

Morphological bases of ventricular fibrillation and arrhythmias

Causes of sudden coronary death: ventricular fibrillation (in 80% of cases), asystole or electromechanical dissociation, cardiomyopathy (10-20%).

Ventricular fibrillation develops suddenly, symptoms appear sequentially: the disappearance of the pulse on the carotid arteries, loss of consciousness, a one-time tonic contraction of skeletal muscles, disturbance and cessation of breathing. The reaction to timely cardiopulmonary resuscitation is positive, to the termination of cardiopulmonary resuscitation - rapid negative.

Electromechanical dissociation with massive thromboembolism of the pulmonary artery develops suddenly (often at the moment of physical stress) and is manifested by cessation of breathing, lack of consciousness and pulse on the carotid arteries, sharp cyanosis of the upper half of the body, swelling of the neck veins. With the timely start of cardiopulmonary resuscitation, signs of its effectiveness are determined.

Electromechanical dissociation with rupture of the myocardium and cardiac tamponade develops suddenly, usually against the background of a long, recurrent anginal attack. There are no signs of effectiveness of cardiopulmonary resuscitation. Hypostatic spots quickly appear in the lower parts of the body. The problem of sudden cardiac death, which has attracted the attention of cardiologists for many decades, has come to the fore again in recent years, when large epidemic studies conducted under the direction of WHO have demonstrated a significant frequency of sudden death among the adult population. According to the morphological

data, in case of sudden death, there are often no changes incompatible with life in the heart, in many cases of sudden stoppage of blood circulation, with the timely application of resuscitation measures, a return to life is possible. Extensive research is being conducted aimed at developing measures to prevent sudden death of cardiac patients.

Questions for self-control

1. Be able to distinguish collapse, fainting, coma.
2. What is shock, stages of shock, morphological manifestations.
3. What is agony, its pathogenesis.
4. Explain the difference between clinical and biological death.
5. What is resuscitation, post-resuscitation diseases, what is included in them.

Mechanisms of development.

6. What is sudden cardiac death. Mechanism, causes of development.

Pathomorphological signs.

Indicative tasks for processing theoretical material

- Compile a dictionary of basic concepts on the topic.

2. Test tasks for self-control :

1. The patient has been treated for chronic alcoholism for the past 2 years. Now he complains of a dull pain in the right hypochondrium, an increase in the volume of the abdomen, skin itching. The doctor performed a liver biopsy. He discovered portal cirrhosis of the liver. Select the type of biopsy in this case:

- A) forceps biopsy
- B) incisional biopsy
- C) puncture biopsy
- D) excisional biopsy
- E) endoscopic biopsy

The man suffered from bronchiectatic disease from early childhood . Recently, he complains of pain in the lumbar region, changes in the color and quantity of urine. During ultrasound examination, the kidneys are enlarged and dense. What type of biopsy can clarify the pathological process that has developed in the kidneys ?

- A) trepan biopsy
- C) excisional biopsy
- C) forceps biopsy

- D) endoscopic biopsy
- F) examination of secretions (urine)

3. A 55-year-old man underwent a biopsy, during which an exophytic tumor was found in the left main bronchus, narrowing the lumen of the bronchus by 2/3. Histologically - bronchus cancer. Name the type of biopsy in which pieces of the tumor were obtained :

- A) incisional biopsy
- C) puncture biopsy
- C) forceps or endoscopic biopsy
- D) trepan biopsy
- E) maz rk - reflection current

- old woman was brought to the surgical department with complaints of acute attack-like pains in the right lower part of the abdomen, nausea, vomiting. An appendectomy was performed. Histologically - superficial appendicitis. The name of the biopsy in this case ?

- A) incisional biopsy
- C) excisional biopsy
- C) forceps biopsy
- D) maz ok -repulse current
- F) curettage

5. The man suffered from stomach ulcer disease for a long time. During endoscopic examination, the biopsy revealed chronic gastritis. The edges of the ulcer are compacted with a tumor-like thickening. The biopsy material was delivered to the pathology department at the end of the working day, the doctor was not notified. How to fix the material?

- A) neutral formalin
- B) 10% alcohol solution
- C) sulema solution
- D) chloramine
- E) 96% alcohol

6. A 60-year-old man has been complaining of coughing attacks and expectoration of viscous sputum for several years. When examining the bronchi, areas of growth of granulation tissue, exploding into the lumen of the bronchus in the form of a polyp, were noted. During one of the patient's coughing fits, a dense piece of tissue was found in the sputum. Histological examination of a piece of tissue confirmed the diagnosis - polyp of the mucous membrane with foci of malignancy. What is the name of this type of rejection of pathological tissues?

- A) aspiration biopsy

- C) curettage
- C) random biopsy
- D) puncture biopsy
- F) incisional biopsy

7. A 35-year-old man had a cough with a lot of sputum for 1.5 months. Radiologically, the presence of exudate in the left pleural cavity. What type of biopsy will give an opportunity to investigate the nature of the exudate?

- A) smear-imprint
- C) biopsy by massage
- C) catheterization biopsy
- D) aspiration biopsy
- F) curettage

8. In a 30-year-old patient, during an operation for a mammary gland tumor, a compacted enlarged lymph node was found near the operative field. The surgeon sent the removed lymph node for an express examination. Did the surgeon act correctly in this case?

- A) it is not possible to process lymph nodes using the express method
- C) in this case it is necessary
- C) does the biopsy affect the course of the operation in this case
- D) express biopsy without the warning of the pathologist is possible
- E) there is no difficulty in carrying out cyto-diagnostics of lymph nodes

9. A tumor of the left ovary was found in a young woman. During the operation, the tumor (cyst) was large, 30*30 mm, with a dense capsule. The surgeon hesitated whether to send a piece of this mass for an express biopsy. Your opinion?

- A) it is possible to send 1 piece of cyst for an express biopsy
- C) many pieces from an ovarian cyst can be examined
- C) should not take responsibility for urgent research
- D) it is better to make urgent preparations on a freezing microtome
- E) express biopsy will not change the course of the operation

10. In the otolaryngology department, a 12-year-old sick boy was prescribed a biopsy from a tumor of the right auricle, with an ulcer, purulent discharge, sometimes with an admixture of blood. How to take material for analysis?

- A) curettage
- C) biopsy by massage and pressure
- C) biopsy by scraping with a spatula
- D) biopsy by using a sponge or swab to transfer cells to the sight glass, if it is not possible to apply the glass to the wound
- E) examination of secretions

3. Individual tasks for students of higher education on the topic:

- Compile an approximate map of pathomorphological changes of organs and systems in various near-death states.

4. List of recommended literature

Main :

1. Atlas of micropreparations in pathomorphology / I.I. Starchenko, B.M. Filenko, N.V. Royko and others; VDZU "UMSA". - Poltava, 2018. - 190 p

2. Fundamentals of pathology according to Robbins: in 2 volumes. Volume 1 / Vinay Kumar, Abul K. Abbas, John C. Astaire; translation of the 10th Eng. edition. Publishing house: All-Ukrainian specialized publishing house "Medytsyna". – X II. - 2019. - 420 p.

3 . The basics of pathology according to Robbins: in 2 volumes. Volume 2 / Vinay Kumar, Abul K. Abbas, John C. Astaire; translation of the 10th Eng. edition. Publisher: All-Ukrainian specialized publishing house "Medytsyna". – X II. – 2019. – 512 p.

4 . Pathomorphology. General pathomorphology: a study guide / edited by Ya. Ya. Bodnara, V.D. Voloshina, A.M. Romanyuk, V.V. Gargin. - New Book, 2020. - 248 p.

5 . Workshop on biopsy-sectioning course / I.I. Starchenko, A.P. Hasyuk, S.A. Proskurnya [etc.] – Poltava, 2016. – 160 p.

Additional :

1. Sorokina IV Biopsy-autopsy course (clinical pathology) / IV Sorokina, VD Markovskiy. - Kharkiv, 2012. - 60 c.

2 . General pathomorphology / I.I. Starchenko, N.V. Royko, B.M. Filenko [et al.] – Poltava, 2016. – 136 p.

3 . Zerbino D. D. Pathomorphology and histology: an atlas / D. D. Zerbino, M. M. Bagrii, Y. Ya. Bodnar, V. A. Dibrova. – Vinnytsia: Nova Kniga, 2016. – 800 p.

4 . Methods of morphological research / M.M. Baghrii, V.A. Dibrova, O.G. Papadynets, M.I. Grischuk; edited by M.M. Baghria, V.A. Dibrovyy – Vinnytsia: Nova Kniga, 2016. – 328 p.

5 . Pathomorphology: nats. handyman / V.D. Markovskiy, V.O. Tumansky I.V. Sorokina et al., edited by V.D. Markovskiy, V.O. Tumanskyi. — K.: VSV "Medicine". 2015— 936 p., color. view. ISBN 978-617-505-450-5

Information resources

1. <http://moz.gov.ua> – Ministry of Health of Ukraine

2. www.ama-assn.org – American Medical Association

3. www.who.int - World Health Organization

4. www.dec.gov.ua/mtd/home/ - State Expert Center of the Ministry of Health of Ukraine

5. <http://bma.org.uk> - British Medical Association

6. www.gmc-uk.org - General Medical Council (GMC)

7. www.bundesaerztekammer.de – German Medical Association
8. <http://library.med.utah.edu/WebPath/webpath.html> - Pathology Laboratory
9. <http://www.webpathology.com/> - Web Pathology
10. National Scientific Medical Library of Ukraine <http://library.gov.ua/>
11. National Library of Ukraine named after V.I. Vernadsky <http://www.nbuv.gov.ua>

Topic 9. Preparation and holding of a meeting of the medical and control commission, the commission for the study of fatal consequences, and the clinical-anatomical conference. Deontological and ethical aspects in patho-anatomical practice.

Purpose: Clinical-pathological-anatomical conferences are held with the aim of improving the qualifications of doctors and improving the quality of clinical diagnostics, identifying the causes and sources of errors in diagnosis and treatment at all stages of providing medical care, and organizational deficiencies. Treatment and control commissions are conducted for the purpose of competent and scientific verification of the methods and content of the doctor's treatment and diagnostic work, the correctness of the organization of the treatment process.

Basic concepts: LKK (treatment and control commission), clinical and morphological analysis of fatal consequences

Plan

1. Theoretical questions:

Treatment and control commission

The treatment and control commission (LCC) is organized in all treatment and prevention centers institutions

Tasks of the LCC:

- 1) systematic control of hospital departments, the completeness of clinical,

laboratory, X-ray, electrocardiographic and other methods of examination of patients, the correctness and timeliness of their treatment, including operative interventions;

2) detection of defects in the operation of the operating unit, pharmacy, laboratory, X-ray, physiotherapy, pathology and other departments;

3) identification of deficiencies in the treatment and care of patients through selective study and verification of incoming complaints;

4) control over therapeutic nutrition of patients;

5) control over the correctness and timeliness of consultations;

6) systematic control over the introduction and widespread use of the latest research and treatment methods.

Clinical and morphological analysis of fatal consequences

Clinical and morphological analysis is a method of learning the circumstances of the occurrence of diseases, the peculiarities of their course, as well as the immediate causes and mechanisms of death.

The main methodological condition for clinical and morphological analysis is compliance with the principles of the unity of morphological and functional changes. At the same time, based on the study of clinical information about the patient's complaints, the nature of the symptoms that occurred during his life, physical, clinical and laboratory and other data in their comparison with macroscopic, microscopic and ultrastructural changes, the pathologist reveals the degree of correspondence between the clinical manifestations of the disease and their morphological and functional changes.

The final clinical-expert opinion regarding each specific fatal outcome is taken collegially, when discussing the case at a meeting of the medical and control commission (LC K), the clinical-expert commission (KEK) and the clinical-pathological-anatomical conference at the health care institution. If a pathologist or other specialist disagrees with the conclusion of the meeting of the LC K , KEK and

the clinico-pathological conference, this is recorded in the protocol (act) of the meeting and submitted for consideration to the KEK of the regional health management body.

Organization and procedure of the treatment and control commission

The medical and control commission is appointed to comprehensively and qualifiedly clarify the circumstances and features of the course of the disease, the immediate cause and mechanism of deficiencies in the provision of care to patients who died in this medical institution, as well as in the polyclinic, at home, in the area served by this institution.

The chief physician of the health care institution is responsible for the organization and state of the work of the commission, whose annual order determines the composition of the commission. As a rule, the chairman of the commission is the deputy chief physician for the medical department, the permanent members are the chief medical specialists, department heads, the head of the pathology department, and one of the resident clinicians as the secretary.

The final composition of the commission is established in an operational manner in depending on the nature of the disease in the deceased with necessary participation the pathologist or the doctor who performed the autopsy. Doctors who participated in treatment of the patient, members of the commission should not be appointed. Head of Commission is obliged to study all the necessary documentation related to this in case of death (medical history, extract from the patho-anatomical protocol examination of the deceased and other materials), and appoint reviewer from the most qualified doctors of the medical and preventive institution. If necessary materials from other medical institutions are requested, where the patient was previously treated .

The meeting of the commission is scheduled no later than 20 days after the death the patient On short reports of the attending physician, pathologist , and reviewer are heard at commission meetings if there were shortcomings of the pre-hospital period. The meeting of the commission is recorded by the secretary.

The attending physician is obliged to substantiate the diagnosis given to the patient, using the results of his examination for this purpose, to report how the disease developed, when and for what reason complications arose, what specific measures were taken in connection with this and their results.

The pathologist reports to the commission the patho-anatomical diagnosis and epicrisis, conducts a comparison of clinical and patho-anatomical diagnoses under all rubrics, provides information on the identified deficiencies in the provision of medical care and their causes.

Based on the studied medical documentation, the reviewer reports and presents to the commission a written opinion on the timeliness of the patient's hospitalization, the completeness of his examination, the correctness of the treatment at the pre-hospital stage and during the hospital period.

By comparing clinical and pathological data, the reviewer establishes specific reasons for the mistakes made, suggests measures to prevent them in future. In cases of differences of opinion between the pathologist and the attending physician, the reviewer substantiates one of them or offers his own, using data from the scientific literature for this purpose. It determines the dependence of the errors of the attending physician on the entire system of organization of medical and diagnostic work in the hospital.

The commission is obliged to find out the circumstances of the occurrence of the disease (injury), the peculiarities of its course, thanatogenesis, to establish the quality of the provision of medical care, to develop specific practical measures for the elimination and prevention of identified deficiencies.

When analyzing medical care at the pre-hospital stage, the commission establishes:

- the state of active detection of patients and the timeliness of the patient's initial request for medical assistance;
- completeness of examination in the polyclinic, quality and timeliness of diagnosis, correctness of treatment;
- timeliness of hospitalization;
- the correctness of transporting the patient to the medical institution;
- the quality of in-depth medical examinations and dispensary dynamic observation of the patient in the hospital.

When analyzing medical care during the hospital period, the commission establishes:

- completeness, reasonableness and timeliness of examination of the patient in the medical institution;
- timeliness the final diagnosis of the disease, him completeness and correctness;
- validity of medical appointments and operative interventions;
- the correctness of medical procedures and surgical operations;
- adequacy of postoperative management of the patient;
- maintaining consistency in the diagnosis and treatment of the patient at all stages of hospitalization.

Quality driving medical documentation is evaluated by the commission in accordance with each stage of hospitalization. At the same time, attention is drawn to the professional literacy of medical records, the completeness of the display of complaints,

anamnesic information, data of an objective examination, the presence of records of visits by the head of the department, other officials; preoperative epicrisis, postoperative diagnoses, the state of keeping anesthesia charts and intensive care charts.

At the end of the work, the commission draws up an act, which is signed by all members of the commission.

In the event that the commission identifies shortcomings in the provision of medical care, the following must be indicated in the acts: the essence and nature of the shortcomings, where they were admitted, the surnames and initials of the doctors who admitted the shortcomings, to what extent the specific practical recommendations of the commission for the elimination and prevention of the identified shortcomings in the medical - preventive work of the hospital.

When the commission discovers deficiencies in the provision of medical care, admitted by doctors of other medical institutions, the chairman of the commission must send an extract from the report of the commission to the address of the corresponding chief doctor.

In cases of disagreement between the members of the commission, a re-examination of the fatal case is scheduled at the KEK of the regional health management body

Clinical-anatomical conference

Clinical-anatomical conference provides a comprehensive and objective analysis of clinical and morphological materials with clarification of causes and sources errors in terms of hospitalization, diagnosis and treatment, detection of gaps organizational order in the medical service of the population, promotion qualifications of doctors.

At the clinico-pathological conference, the following are discussed:

- all cases of discrepancies between clinical and patho-anatomical diagnoses;
- all observations of scientific and practical interest;
- unusual course of the disease;
- cases of drug-induced diseases and drug-induced pathomorphosis of diseases;
- cases of death of patients after surgical, diagnostic and therapeutic interventions, especially those patients who were hospitalized urgently;
- acute infectious diseases;
- cases of late diagnosis, difficult to diagnose the disease, unclear cases that require joint discussion.

At one of the conferences, a report on the past work is being discussed year of the head of the pathology bureau, head of the pathology department (children's pathology department), in which summary data on in-hospital mortality and quality analysis should be presented diagnostics and shortcomings of medical care at all stages of patient treatment.

On clinical and patho-anatomical conferences are obliged to be the chief doctor, his deputies in the medical department, all doctors are present of this medical and preventive institution, as well as doctors of those medical and preventive institutions who participated in the examination and treatment of the patient at the previous stages.

Clinical-pathological-anatomical conferences are held regularly, during working hours, at least once a month.

The agenda of the next clinical and pathological anatomical conference is brought to the attention of the doctors of the health care institution no later than 7 days before the conference. The preparation of the clinico-pathological conference is carried out by the deputy chief physician for the medical part and the head of the department of the pathological bureau (pathological department).

To cancel the discussion of the case proposed by the boss the pathology bureau, the head of the pathology department, the administration of the health care institution has no right.

To conduct a clinical-pathological conference, the head of the medical institution appoints two co-chairs (clinician and head of the pathology bureau, head of the pathology department), as well as an opponent from among the most qualified doctors (therapist or pediatrician, surgeon, pathologist, and others).

Two permanent members are appointed to keep the minutes of the conference secretaries from the hospital team.

It is appropriate to limit the agenda of the conference to the discussion of one observation.

The cases to be discussed are reported by treating doctors, the pathologist who performed the autopsy of the deceased, the reviewer who analyzed the data from the medical card of the inpatient (for maternity hospitals, the history of childbirth, the history of the development of the newborn), the quality of the examination, the maintenance of medical documentation, and then it is discussed by the participants of the conference, including doctors of another specialty who participated in the diagnosis of the disease.

The administration of the health care institution, based on the materials, conclusions and proposals of the clinico-pathological conference, develops and implements measures to prevent and eliminate deficiencies in the organization and provision of medical care to the patient.

When comparing the final clinical and pathological diagnoses, only the diagnosis recorded on the first page of the medical history is taken into account; in the clinical and patho-anatomical diagnosis, the main disease, complications of the main disease and concomitant disease must be clearly distinguished. The date of diagnosis of each disease and its complications must be indicated on the title page and in the epicrisis of the medical history.

In monocausal final clinical and patho-anatomical only the corresponding one

should appear in the diagnoses as the main disease nosological unit. Clinical diagnosis cannot be replaced by enumeration syndromes or symptoms of the disease. In the patho-anatomical diagnosis it has to be the morphogenetic essence of the disease.

When conducting clinical and pathological examinations conferences follow take into account that in modern conditions, especially the elderly, there are often two or more diseases at the same time that develop independently of each other, or are in complex pathogenetic relationships.

Among these diseases, it is not easy, and quite often it is impossible to single out the main ones. This situation made it necessary to enter into the diagnostic definition of concepts and terms - competing, combined, background disease, combined underlying disease. Placement in the diagnosis and epicrisis

of the detected diseases in accordance with these concepts allows us to more clearly imagine their interdependence and the influence of one on the other, as well as the importance of each disease and its complications in the genesis of death; at the same time, it is possible to think more reasonably about the expediency, completeness and timeliness of treatment and diagnostic measures.

Complications of diseases include those pathological processes that are pathogenetically directly related to the main disease, but in some cases may have a different etiology (for example: purulent meningitis with purulent otitis, peritonitis with perforated stomach ulcer and others).

In cases where death did not occur from the main disease or a complication of the main disease, but from the use of medical or even diagnostic procedures and manipulations, special headings are provided. For example, ICD rubrics E936 (accidents and complications occurring during surgical and other types of treatment), N 960-979 (adverse complications associated with the administration of drugs and other medicinal

substances),

N 997 (specific complications associated with some surgical interventions), N 998 (other complications due to medical interventions).

When discussing such cases at the conference, the following options for their analysis are possible:

5. The medical actions that caused the patient's death were taken based on a false diagnosis. In similar cases, these actions (operative, diagnostic intervention, reactions to medications, radiation energy, etc.) are assigned to the place of the main disease in the diagnosis in accordance with the ICD rubrics E930-E936.
6. Medical actions that caused the death of the patient were performed in accordance with certain indications, but were performed incorrectly, which led to the death of the patient (for example, transfusion of blood of a different group than the patient, excessively cooled, hemolyzed; overdose of potent drugs, gross error during operative intervention, conducting anesthesia, etc.). Such cases usually become the subject of a forensic medical examination. As in the previous category, the actions that led to the death of the patient should appear in the diagnosis at the place of the main disease.
7. The medical actions that led to the patient's death were "adequate", that is, applied on the basis of correctly established indications and carried out correctly. Its adverse effect was related to individual intolerance or severity of the condition and neglect of the disease, which could not be determined before. In such cases, the actions that led to the death of the patient, although they can formally be included in one of the above-listed categories of the ICD, should be included in the group of complications. However, complications of this nature should be distinguished from the total mass of detected complications of the main disease, which developed as a result of the natural course of the disease. Thus, in the analysis, it is necessary to distinguish two categories of complications - "complications of the disease" and "complications from treatment". The last

group should include processes related to medical actions, if they led to the death of the patient.

At the clinico-patho-anatomical conference, the categories and reasons for the discrepancy in the final clinical - patho-anatomical diagnoses must be discussed.

Given that the clinical diagnosis must be not only correct, but also timely, all sectional observations when the clinical and pathological diagnoses coincide are analyzed in relation to the timeliness of their establishment; the materials of this analysis are discussed at clinical and pathological-anatomical conferences, and are given in the reports of the pathological-anatomical department.

Sources and causes of false clinical diagnoses can be objective and subjective. The objective reasons for a false clinical diagnosis are due to the short duration of the patient's stay in a medical institution, the difficulty and impossibility of his examination due to his serious condition,

atypical development and the course of the process or insufficient study of the disease.

Subjective causes of erroneous clinical diagnosis are determined by the level of training and qualification of the doctor. When analyzing these two categories of errors, in each case, the specific reasons for their origin are indicated and highlighted (severe condition of the patient that does not allow for his examination, atypical or asymptomatic course of the disease, rarity of the disease, insufficient laboratory tests, attention to history, etc.).

Analyzing the cases in which there were discrepancies in the diagnoses, it is necessary to single out those of them when the main disease and the fatal complication were

recognized late, which led to the untimeliness of rational treatment and the fatal outcome.

Based on the tasks facing the clinico-pathological conferences, it is necessary that the analysis of the mistakes made should be fundamental, and the speeches at them should not have the character of accusations against individuals who made certain mistakes. The benefit for patients in the future and the improvement of medical qualifications should be the main goal of clinical-pathological comparison.

When controversial issues arise in the formulation of the final diagnosis, its final version is established not by a simple vote of those present at the clinical-pathological-anatomical conference, but by the clinical-expert commission of the Ministry of Health of Ukraine in the specialty "pathological anatomy" or by a group of expert pathologists in agreement with the chief freelance specialist of the Ministry of Health of Ukraine with the specialty "pathological anatomy".

ETHICAL AND LEGAL STANDARDS WORKS OF DOCTOR-PATHOLOGIST

Determination of biological death.

The biological death of a person is ascertained a medical worker. Death of patients can be confirmed at home medical an emergency medical service worker or a family member a doctor, and in the case of their absence in rural areas - a medical one a middle-ranking employee. The fact of biological death is recorded in the medical record documentation of the deceased at the time of death in a health care institution; in the act statement of death made by a medical worker who established death, when death occurs outside a health care institution. Act of ascertainment of death is issued by a medical worker to relatives of the deceased or persons who represent his interests.

In order to ensure the right to respect the body of the deceased the medical worker who ascertained death is obliged to take measures, which exclude the deformation of tissues caused by cadaveric incantation (close eyes of the deceased, fix the lower one jaw and give the body of the deceased horizontal position on the back). In case of death outside the institution of health care, the specified measures are carried out with the permission of the employee of the bodies of internal affairs after examining the body of the deceased at the place of death. The call of the employee of the internal affairs bodies and the service of transportation (evacuation) of the dead is carried out by a medical worker, who ascertained death _

In the event of death in health and social care institutions provision and in places of deprivation of liberty, a medical worker stated death, upon referral the body of the deceased to the post-mortem office must indicate in the medical documentation of the deceased, the presence of valuables (jewelry, dental prostheses made of precious metals, etc.) that are on the deceased. Information is also entered into the medical records of the deceased about documents, money and valuables deposited by the patient during admission to the institution. In case of death at home, medical the employee who ascertained death, together with the employee of the internal affairs bodies, is obliged to examine the body of the deceased and make a description of the documents, money and valuables found there with the deceased The description is made in two copies by signature a medical worker who confirmed death, and an employee of internal affairs bodies. At this documents, money and valuables that are with the deceased, with one a copy of the description is delivered by an employee of the internal affairs bodies to storage in the Department of Internal Affairs. The second copy of the description with the body the deceased is heading to pathology bureau.

The procedure for reporting the death of a patient.

In case of death of the patient in health care institution and inpatient social service institution information about this is communicated by the treating doctor (on duty) to the specified person by a patient during admission to a medical institution. In the absence of such persons, this information is transferred to the internal affairs authorities

at the place of residence of the deceased indicated in the medical documentation, who are obliged to inform the relatives of the deceased or persons representing the interests of the deceased. In the event of the death of a patient in places of deprivation of liberty, the obligation to informing relatives or persons representing interests the deceased relies on the administration of the institution at the place of death .

About respect for the body of the deceased. The attitude towards the body of the deceased should to correspond to the deceased's lifetime expression of will, excluding cases mandatory pathological autopsy. The corpse, its organs and tissues are not can be the subject of sales and commercial transactions.

In the absence of a written will manifestation of will patient and in the absence of relatives, other representatives of the deceased or at impossibility of carrying out the burial of corpses by them after establishing the cause death can be transferred to educational institutions of health care or research institutions of health care for use in educational and scientific goals After the end of using the corpse for educational or scientific purposes an educational or research institution is obliged to provide burial troupe through a specialized service.

When conducting a pathological autopsy, it is allowed to take organs and tissues of a corpse for diagnostic, educational and scientific purposes, which is recorded in the medical documentation.

The right of citizens information about the results of the pathological examination research. Information about the results of the post-mortem examination of the corpse is issued in writing by the institution, where this study was conducted. The right to receive a conclusion on a patho-anatomical autopsy is granted to a relative of the deceased who received a death certificate, or to other legal representatives of the deceased. Pathologists, like other medical professionals, are responsible for concealment and/or deliberate distortion of information about the results pathological autopsy in accordance with the legislation.

Questions for self-control

1. Tasks of the clinico-pathological conference.
2. What cases are discussed at the clinico-pathological conference.
3. Analysis of the results of the study of surgically removed organs and biopsies.
4. The procedure for holding a clinical and pathological conference.
5. Objective and subjective reasons for the discrepancy in diagnoses.
6. Tasks of the medical and control commission in a medical and preventive institution.
7. The composition of the LCC and the procedure for conducting its work.

Indicative tasks for processing theoretical material

- Compile a dictionary of basic concepts on the topic.

2. Test tasks for self-control :

1. The patient was in the hematology department for 44 days due to lymphogranulomatosis. The examination revealed enlarged lymph nodes of the right half of the neck, supraclavicular, axillary, and elbow. It was detected with more on the liver, the spleen without changes . X-ray examination revealed a clear, oval-shaped obscuration measuring 3*5 cm in the basal part of the right lung. Exudate in the pleural cavity on the right at the level of the IV rib. Cough with sputum in the form of raspberry jelly. Dyspnea. In a punctate smear from a peripheral lymph node , reticular cells and cells The family of Berezovsky - Sternberg .

Clinical diagnosis:

1. The main disease is lymphogranulomatosis
2. Complication - myelotoxic anemia. Bilateral pleurisy. Anasarka Swelling of the lungs . Ascites

During histological examination : in the lungs , liver and lymph nodes revealed squamous cell carcinoma without keratinization, with a large number of pathological mitoses.

What in this case led to the diagnostic error?

- A. underestimation of statistical data
- B. underestimation of clinical data
- S. underestimation of clinical and laboratory data
- D. lack of anthropometric data
- E. underestimation of morphological data

2. Patient V. , 52 years old , spent 3 days in the surgical department. Clinical diagnosis:

1. The main disease is colon cancer;
2. Complications - Edema of the brain;
3. Concomitant disease - General atherosclerosis. Hematomas of the trunk and lower limbs.

After the autopsy , the following diagnosis was made:

1. The main disease - Cerebrovascular disease: ischemic infarction of the left hemisphere of the brain (6.5*8*4.5 cm), thrombosis a. cerebri media sinistra, atherosclerosis of the arteries of the lower surface of the brain.
2. Complications - Bilateral g and static pneumonia. Edema of the brain. Parenchymatous dystrophy of the heart, liver, and kidneys.
3. Concomitant disease - general atherosclerosis, gall bladder stone, hematoma of the torso (4*2 cm) and right thigh (1.5*2.5 cm).

- anatomical diagnoses

next we category we :

- A. discrepancy according to the main disease
- B. discrepancy due to complications of the main disease
- C. discrepancy due to concomitant diseases m
- D. discrepancy according to the main disease and complications of the underlying disease
- E. discrepancy according to the main disease and for accompanying diseases m .

3. The cause of death of a 38-year-old drug addict suffering from HIV infection, stage CH I D, was miliary tuberculosis with the development of specific leptomeningitis. In clinical and patho-anatomical diagnoses, tuberculosis is considered as:

- A. the main disease
- B. concomitant disease
- S. competitive disease
- D. complications of B I L infection
- E. manifestation of VL infection

4. A 25 - year-old woman was admitted to the maternity ward at the 36th week of pregnancy. She has a history of 4 medical abortions . 5th pregnancy , first delivery. Previous pregnancies ended in medical abortions. In the first half of pregnancy, nausea, mild anemia was observed, in the 11th week - a threat of abortion, ureaplasmosis, for which she received treatment. Delivery at 37-38 weeks by caesarean section. A girl was born , weighing 30 48 g, height 50 cm. Premature detachment of the normally located placenta, tight wrapping of the umbilical cord around the neck 2 times, acute fetal hypoxia , Apgar score at birth 1 point was observed. Resuscitation measures were carried out. The death of the newborn occurred 1 day 14 hours after delivery.

Clinical diagnosis:

Intrauterine infection of unspecified etiology. Premature detachment of a normally

located placenta. Acute fetal hypoxia. Anemia. Timely operative deliveries.

Pathological examination data:

Soft meninges are swollen, cloudy, full of blood, with multiple hemorrhages. The lungs have a testy consistency, dark red in section. A blood mass is separated from the cut surface. In smears - prints from the lungs and meninges treated with anti-chlamydial serum, the fluorescence of anti-chlamydial antigen is recorded in the cytoplasm of alveolocytes, endothelium and macrophages. The reason for the discrepancy in diagnoses:

- A. short stay
- B. the severity of the condition
- S. underaccounting of clinical data
- D. reassessment of the expert's opinion
- E. insufficient clinical examination

5. See the condition of the previous task. What is the main disease in the pathological diagnosis?

- A. newborn asphyxia
- B. Congenital chlamydial infection
- C. premature detachment of the placenta
- D. oedema , hemorrhagic syndrome
- E. treated ureaplasmosis

6. See the condition of the previous task. Discrepancy of diagnoses by :

- A. complication
- B. competitive disease
- C. concomitant disease
- D. the main disease
- E. the main disease and complication

7. Woman 24 years old, 2nd pregnancy at 35-36 weeks. First childbirth. Medical abortion in the anamnesis. Placentitis was diagnosed from the 23rd week of pregnancy, from the 28th week - edema, proteinuria, chronic fetoplacental insufficiency. 4 days before delivery, the fetal heartbeat disappeared. In used scalp forceps. A dead macerated fetus weighing 2,300 g was born, with a diameter of 46 cm.

Clinical diagnosis:

Premature birth with a dead fetus. Nephropathy of a mild degree against the background of neurocirculatory dystonia of the hypertensive type, candidal colpitis.

Pathological examination data:

Maceration of the skin of the fetus, their staining with meconium masses in a greenish color, there is little meconium in the large intestine. Internal organs are flaccid, full-blooded. In soft meninges and epicardium and - point hemorrhages. The weight of the placenta is 450 g , the fruit surface is green in color . The periamniotic

membranes are cloudy, swollen, greenish in color, the umbilical cord is 60 cm long, with false nodes along its course.

During histological examination in the lungs - fine-grained eosinophilic masses and masses of meconium ; in the kidneys, liver and myocardium - partial autolysis. Venous full blood. Phlegmonous inflammation in the placenta, swelling in the fetal membranes, focal leukocyte infiltration. What is the main disease in the pathological diagnosis?

Choose one correct answer:

- A. prematurity
- B. purulent placentitis
- C. neurocirculatory dystonia
- D. antenatal hypoxia of the fetus
- E. intrauterine emptying of the colon

8. See the condition of the previous task. Direct cause of fetal death:

- A. imposition of skin-head forceps
- B. maceration of skins and coverings
- C. hemorrhage in the meninges
- D. hypoxia
- E. aspiration of amniotic fluid

9. See the condition of the previous task. What is the cause of chronic fetoplacental insufficiency ?

- A. phlegmonous placentitis
- B. false nodes of the umbilical cord
- C. premature detachment of the placenta
- D. history of medical abortion
- E. candidal colpitis

10. The main task of clinical and pathological - anatomical conferences:

- A. analysis of anatomical material
- B. _ analysis of clinical material
- C. _ analysis of clinical and anatomical material
- D. improvement of doctor's qualifications
- E. professional development of medical personnel

3. Individual tasks for students of higher education on the topic:

- Prepare a list of conditions for holding a meeting of the medical and control commission, the commission for the study of fatal consequences, and the clinical-anatomical conference.
- to propose one special case for a sample of the LCC.

4. List of recommended literature

Main :

1. Atlas of micropreparations in pathomorphology / I.I. Starchenko, B.M. Filenko, N.V. Royko and others; VDZU "UMSA". - Poltava, 2018. - 190 p
2. Fundamentals of pathology according to Robbins: in 2 volumes. Volume 1 / Vinay Kumar, Abul K. Abbas, John C. Astaire; translation of the 10th Eng. edition. Publishing house: All-Ukrainian specialized publishing house "Medytsyna". – X II. - 2019. - 420 p.
- 3 . The basics of pathology according to Robbins: in 2 volumes. Volume 2 / Vinay Kumar, Abul K. Abbas, John C. Astaire; translation of the 10th Eng. edition. Publisher: All-Ukrainian specialized publishing house "Medytsyna". – X II. – 2019. – 512 p.
- 4 . Pathomorphology. General pathomorphology: a study guide / edited by Ya. Ya. Bodnara, V.D. Voloshina, A.M. Romanyuk, V.V. Gargin. - New Book, 2020. - 248 p.
- 5 . Workshop on biopsy-sectioning course / I.I. Starchenko, A.P. Hasyuk, S.A. Proskurnya [etc.] – Poltava, 2016. – 160 p.

Additional :

1. Sorokina IV Biopsy-autopsy course (clinical pathology) / IV Sorokina, VD Markovskiy. - Kharkiv, 2012. - 60 c.
- 2 . General pathomorphology / I.I. Starchenko, N.V. Royko, B.M. Filenko [et al.] – Poltava, 2016. – 136 p.
- 3 . Zerbino D. D. Pathomorphology and histology: an atlas / D. D. Zerbino, M. M. Bagrii, Y. Ya. Bodnar, V. A. Dibrova. – Vinnytsia: Nova Kniga, 2016. – 800 p.
- 4 . Methods of morphological research / M.M. Baghrii, V.A. Dibrova, O.G. Papadynets, M.I. Grischuk; edited by M.M. Baghria, V.A. Dibrovyy – Vinnytsia: Nova Kniga, 2016. – 328 p.
- 5 . Pathomorphology: nats. handyman / V.D. Markovskiy, V.O. Tumansky I.V. Sorokina et al., edited by V.D. Markovsky, V.O. Tumanskyi. — K.: VSV "Medicine". 2015— 936 p., color. view. ISBN 978-617-505-450-5

Information resources

1. <http://moz.gov.ua> – Ministry of Health of Ukraine
2. www.ama-assn.org – American Medical Association
3. www.who.int - World Health Organization
4. www.dec.gov.ua/mtd/home/ - State Expert Center of the Ministry of Health of Ukraine
5. <http://bma.org.uk> - British Medical Association
6. www.gmc-uk.org - General Medical Council (GMC)
7. www.bundesaerztekammer.de – German Medical Association
8. <http://library.med.utah.edu/WebPath/webpath.html> - Pathology Laboratory
9. <http://www.webpathology.com/> - Web Pathology
10. National Scientific Medical Library of Ukraine <http://library.gov.ua/>
11. National Library of Ukraine named after V.I. Vernadsky <http://www.nbuv.gov.ua>

Topic 10. Procedure for review of medical history.

Purpose: Reviewing the medical history and patho-anatomical autopsy is necessary to fully assess the quality of medical and diagnostic care and preventive measures, to identify diagnostic errors and prevent them in the future.

Basic concepts: medical history, epicrisis, review

Plan

1. Theoretical questions:

METHODOLOGICAL RECOMMENDATIONS FOR REVIEWING THE HISTORY OF THE DISEASE AND PROTOCOLS OF THE PATHOLOGICAL AND ANATOMICAL DISCUSSION

1. The quality of preventive measures and the provision of medical and diagnostic care is determined on the basis of the study of the medical history, the outpatient card and the protocol of the pathological-anatomical autopsy. For this:

a) information on the prehospital period is studied (timeliness of hospitalization, correctness and timeliness of transportation);

b) the quality of medical examination in the polyclinic is analyzed (lack of observation, defects in diagnosis and treatment);

c) information about the hospital period is studied (time of stay in the reception department, the period of establishment of the main diagnosis and its complications, timeliness, correctness and validity of laboratory and diagnostic procedures, operative interventions, defects of anesthesia and resuscitation, reasons for late diagnosis and inadequacy of medical and diagnostic measures, their influence on the outcome of

treatment);

d) defects in drug and surgical treatment, postoperative management of the patient with clarification of their influence on the result are revealed

2. In case of a diagnostic error:

a) its reasons are noted (short stay in the hospital, lack of continuity in observation and treatment, severity of the patient's condition, incomplete clinical and laboratory examination, incorrect interpretation of the obtained data, incorrect appointment of consultants, lack of necessary conditions for diagnosis and treatment - lack of medicines, equipment, established methods, etc.);

b) a judgment is expressed about the category of discrepancy between clinical and pathological-anatomical diagnoses (I, II, III).

3. In the presence of iatrogenic pathology:

a) the reasons and conditions of its occurrence are analyzed;

b) a judgment is expressed about the category of iatrogenicity (I, II, III).

4. Possible defects in the maintenance and design of medical documentation are noted:

a) medical history (collection of anamnesis, description of objective data, plan of examination and treatment of the patient, surgical interventions, informativeness of diary entries, stage epicrisis, construction of clinical diagnosis and terms of its establishment);

b) autopsy protocol (detail of opening, completeness of macro- and microscopic descriptions, terms of development of diseases and their complications (first of all - coronary artery disease, central venous thrombosis, infectious and inflammatory lesions, including pneumonia), the need for additional analyzes - microbiological, biochemical, etc. , accounting of clinical data, adequacy of clinical and anatomical comparisons, construction of the diagnosis, informativeness of epicrisis, correctness of

conclusion about the cause of death).

5. When canceling a pathological-anatomical autopsy, a statement on the legality and justification of its cancellation is provided.

6. Proposals aimed at eliminating identified errors and omissions are made.

Questions for self-control

1. On the basis of which the quality of preventive measures and the provision of medical and diagnostic assistance is determined.

2. Necessary actions in case of a diagnostic error.

3. Review procedure for iatrogeny.

Indicative tasks for processing theoretical material

- Compile a dictionary of basic concepts on the topic.

2. Test tasks for self-control :

3. Individual tasks for students of higher education on the topic:

- draw up an algorithm for working with medical history (autopsy protocol) and its analysis.

4. List of recommended literature

Main :

1. Atlas of micropreparations in pathomorphology / I.I. Starchenko, B.M. Filenko, N.V. Royko and others; VDZU "UMSA". - Poltava, 2018. - 190 p

2. Fundamentals of pathology according to Robbins: in 2 volumes. Volume 1 / Vinay Kumar, Abul K. Abbas, John C. Astaire; translation of the 10th Eng. edition. Publishing house: All-Ukrainian specialized publishing house "Medytsyna". – X II. - 2019. - 420 p.

3 . The basics of pathology according to Robbins: in 2 volumes. Volume 2 / Vinay Kumar, Abul K. Abbas, John C. Astaire; translation of the 10th Eng. edition. Publisher: All-Ukrainian specialized publishing house "Medytsyna". – X II. – 2019. – 512 p.

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- 3 . Zerbino D. D. Pathomorphology and histology: an atlas / D. D. Zerbino, M. M. Bagrii, Y. Ya. Bodnar, V. A. Dibrova. – Vinnytsia: Nova Kniga, 2016. – 800 p.
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Information resources

1. <http://moz.gov.ua> – Ministry of Health of Ukraine
2. www.ama-assn.org – American Medical Association
3. www.who.int - World Health Organization
4. www.dec.gov.ua/mtd/home/ - State Expert Center of the Ministry of Health of Ukraine
5. <http://bma.org.uk> - British Medical Association
6. www.gmc-uk.org - General Medical Council (GMC)
7. www.bundesaerztekammer.de – German Medical Association
8. <http://library.med.utah.edu/WebPath/webpath.html> - Pathology Laboratory
9. <http://www.webpathology.com/> - Web Pathology
10. National Scientific Medical Library of Ukraine <http://library.gov.ua/>
11. National Library of Ukraine named after V.I. Vernadsky <http://www.nbu.gov.ua>

Topic 11. “Preparation for credit class.”

Purpose: In the practice of every doctor, there are no planned cases with a defined and well-studied pathology. In the hospital, the doctor applies the entire set of knowledge and skills acquired during all the years of study. That is why the final assessment (control) classes allow to deepen, consolidate, and systematize the acquired knowledge.

Basic concepts: concepts from all studied topics

Plan

1. Theoretical questions: Theoretical material of all previous topics (see above).

Questions for self-control

1. Definition of pathological anatomy (pathomorphology) as a science and practical field.
2. The place of pathomorphology in the health care system of Ukraine and the world and the role and place in the education of students of higher medical education.
3. Stages of development of pathomorphology as a science and practical field.
4. Contribution of domestic scientists to the development of world pathomorphology.
5. Research methods in pathomorphology.
6. Legislative basis of the patho-anatomical service in Ukraine.
7. Procedure for sending material for research.
8. Procedure for registration of postoperative and biopsy material.
9. Rules for taking and processing material from pathological formations
10. The procedure for preparing biopsy, operative and sectional materials for histological studies.
11. Normative indicators regarding the number of investigated fragments in various pathological conditions and tumors of various organs and tissues.
12. Procedure for sending material for research.
13. Procedure for registration of postoperative and biopsy material.
14. Rules for taking and processing material from pathological formations
15. The order of preparation of biopsy, operative and sectional materials for histological studies.

16. Normative indicators regarding the number of investigated fragments in various pathological conditions and tumors of various organs and tissues.
17. Definition of biological death, clinical death.
18. The main causes of biological death.
19. Early signs of biological death of the patient.
20. Late signs of biological death.
21. Concept of terminal state.
22. Definition, purpose and tasks of the ICF.
23. Principles of disease classification.
24. Coding of causes of death.
25. Reasons for revising the ICF. International Exhibition Center 11.
26. Differences between the last revision of the ICJ and the previous ones.
27. Documentation required for autopsy.
28. In what cases is it not allowed to cancel the autopsy .
29. Signs of death and their meaning.
30. External examination of the body and evaluation of the obtained data.
31. The most common methods of dissection and their features.
32. Macroscopic examination of cavities and internal organs, macroscopic differential diagnosis of detected pathological processes.
33. Peculiarities of autopsy of stillborns and newborns
34. Importance of autopsy for medical science and practical health care.
35. Clinical and anatomical analysis of a specific autopsy.
36. Pathological autopsy algorithm.
37. Shor's method of evisceration.
38. Method of evisceration according to Abrikosov.
39. The procedure for dissection of corpses of young children,
40. Procedure for dissection of corpses of newborns,
41. Procedure for dissection of corpses of stillborns,
42. Procedure for dissection of corpses of miscarriages.
43. Be able to distinguish collapse, fainting, coma.
44. What is shock, stages of shock, morphological manifestations.
45. What is agony, its pathogenesis.

46. Explain the difference between clinical and biological death.
47. What is resuscitation, post-resuscitation diseases, what is included in them. Mechanisms of development.
48. What is sudden cardiac death. Mechanism, causes of development. Pathomorphological signs.
- 49 . Tasks of the clinico-pathological conference.
- 50 . What cases are discussed at the clinical and pathological conference.
- 51 _ Analysis of the results of the study of surgically removed organs and biopsies.
- 52 . The procedure for conducting a clinical and pathological anatomical conference.
- 53 . Objective and subjective reasons for the discrepancy in diagnoses.
- 54 . Tasks of the medical and control commission in a medical and preventive institution.
55. The composition of the LCC and the procedure for conducting its work.

Indicative tasks for processing theoretical material

- Compile a dictionary of basic concepts on the topic.

2. Test tasks for self-control : See Test tasks of all previous topics.

3. Individual tasks for students of higher education on the topic:

not provided

4. List of recommended literature

Main :

1. Atlas of micropreparations in pathomorphology / I.I. Starchenko, B.M. Filenko, N.V. Royko and others; VDZU "UMSA". - Poltava, 2018. - 190 p
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3 . Zerbino D. D. Pathomorphology and histology: an atlas / D. D. Zerbino, M. M. Bagrii, Y. Ya. Bodnar, V. A. Dibrova. – Vinnytsia: Nova Kniga, 2016. – 800 p.

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5 . Pathomorphology: nats. handyman / V.D. Markovskiy, V.O. Tumansky I.V. Sorokina et al., edited by V.D. Markovsky, V.O. Tumanskyi. — K.: VSV "Medicine". 2015— 936 p., color. view. ISBN 978-617-505-450-5

Information resources

1. <http://moz.gov.ua> – Ministry of Health of Ukraine

2. www.ama-assn.org – American Medical Association

3. www.who.int - World Health Organization

4. www.dec.gov.ua/mtd/home/ - State Expert Center of the Ministry of Health of Ukraine

5. <http://bma.org.uk> - British Medical Association

6. www.gmc-uk.org - General Medical Council (GMC)

7. www.bundesaerztekammer.de – German Medical Association

8. <http://library.med.utah.edu/WebPath/webpath.html> - Pathology Laboratory

9. <http://www.webpathology.com/> - Web Pathology

10. National Scientific Medical Library of Ukraine <http://library.gov.ua/>

11. National Library of Ukraine named after V.I. Vernadsky <http://www.nbuv.gov.ua>