

ЛД – 21ИИ

Federal State Budgetary Educational Institution of Higher Education «North-Ossetia State Medical Academy» of the Ministry of Healthcare of the Russian Federation

(FSBEI HE NOSMA Ministry of Health of the Russian Federation)

Department of Pathological Anatomy with Forensic Medicine

**METHODOLOGICAL RECOMMENDATIONS TO PERFORM INDEPENDENT
EXTRACURRICULAR WORK BY STUDENTS**

main professional educational program of higher education - specialty programs by specialty
31.05.01 "General Medicine", approved on 24.05.2023

Vladikavkaz 2023

Methodical recommendations are intended for extracurricular independent work
3rd year students of Medical Faculty
FSBEI HE SOGMA of the Ministry of Health of Russia in the discipline "Pathological anatomy,
clinical pathological anatomy "

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Topic: "Damage and death of cells and tissues."

Knowledge of the topic is necessary for mastering other topics of general and particular courses of pathological anatomy, as well as for clinical anatomical analysis in the study of clinical disciplines and the practical work of a doctor.

I. Objectives:

The student must know	<ul style="list-style-type: none">•Causes and mechanisms of development of various types of necrosis, their functional significance•Morphological differences between necrosis and other pathological processes
The student must be able to	<ul style="list-style-type: none">•Distinguish clinical and morphological forms by macroscopic and microscopic picture of necrosis
The student must own	<ul style="list-style-type: none">•Pathological knowledge for understanding morphogenesis, and microscopic diagnostics of some

II. Required level of knowledge:

a) from related disciplines

1. The histological structure of tissues
2. Biochemical metabolic processes

b) from the previous topics:

1. concept of dystrophies
2. mechanisms of development of dystrophies

c) from the current lesson

1. Definition of necrosis
2. Stages of the necrotic process
3. Morphological signs of necrosis
4. Etiological and pathogenetic types of necrosis, the mechanism of their development
5. Clinical and morphological forms of necrosis, their macro- and microscopic characteristics
6. Functional significance and outcomes of necrosis.
7. Apoptosis.
8. Differences between apoptosis and necrosis.
9. Death. Signs of death

III. Object of study:

Microslides:

one.

Cardiac muscle necrosis

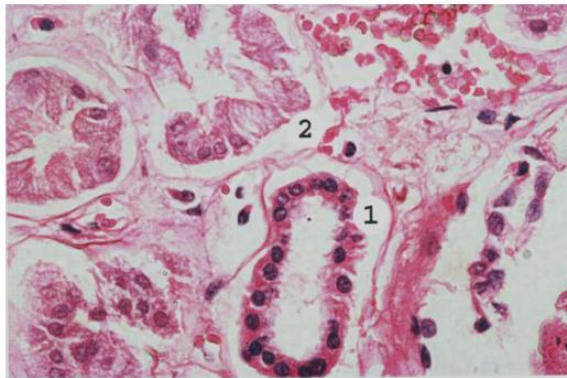
2. Renal tubular epithelial necrosis

Tables:

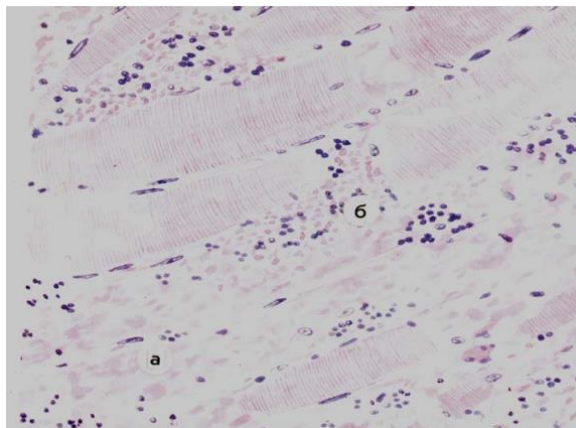
one.

Zenker necrosis

2. Gangrene of the foot



Microslide for sketching Necrosis of the epithelium of the convoluted tubules of the kidneys. The glomeruli and epithelium of the rectus tubules are preserved, in their cells containing nuclei (1). The epithelium of the proximal and distal nephron tubules (2) does not contain nuclei (karyolysis), the cytoplasm of some cells is homogeneous, eosinophilic (in a state of coagulation). In other cells, the cytoplasm looks like lumps (plasmarexis). In places, the basement membrane of the convoluted tubules is destroyed (tubulorexis). The capillaries of the glomeruli are anemic, the vessels of the medulla are full-blooded. Staining with hematoxylin and eosin.



Microslide for sketching: Skeletal muscle necrosis (with gas gangrene). Lumpy decay and cytolysis of muscle fibers (a). The stroma is edematous, infiltrated by leukocytes with foci hemorrhages (b). Staining with hematoxylin and eosin.

The plan for the description of the microslide:

1. Title
2. Name the tissue (organ), color
3. Describe the available changes
4. Etiology of the pathological process
5. Pathogenesis
6. Exodous
7. Clinical significance

X. Literature.

1. AI Strukov, VV Serov. Pathological anatomy: textbook / M.: GEOTAR-Media, 2014
2. MA Fingers, NM Anichkov, MG Rybakova / Guide to practical exercises in pathological anatomy / M.: Medicine, 2002
3. M.A. Fingers A.B. Ponomarev / Atlas on pathological anatomy M.: Medicine, 2005.
4. Workshop on general pathological anatomy K.M. Kozyrev, K. D. Salbiev, A.A. Epkhiev Vladikavkaz: Press Project,

2006

5. G.Z. Lekoev. A series of lectures on pathological anatomy. Vladikavkaz, 2010

6. Textbook in 2 volumes by M.A. Fingers, N.M. Anichkov. Pathological anatomy M.: Medicine, 2005

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Topic: "DYSTROPHIES. GENERAL CHARACTERISTICS.
MORPHOGENESIS.PARENCHYMATOUS DYSTROPHIES ".

I. Objectives:

The student must know	<ul style="list-style-type: none"> • Definition of dystrophies • Classification of dystrophies • Etiology of parenchymal dystrophies • Mechanisms of development of dystrophies • Morphogenesis and morphological manifestations of parenchymal dystrophies
The student must be able to	<ul style="list-style-type: none"> • describe morphological changes in cells and determine the main morphological characteristics of protein, fatty and carbohydrate parenchymal dystrophies based on application histochemical research methods; • predict the outcome of these processes and assess their significance based on the nature, degree, prevalence and localization of parenchymal dystrophies.
The student must own	<ul style="list-style-type: none"> • Pathological knowledge for understanding morphogenesis, and microscopic diagnosis parenchymal dystrophies.

II. Required level of knowledge:

a) from related disciplines

1. The histological structure of tissues
2. Biochemical metabolic processes

b) from the current lesson

1. Morphogenetic mechanisms of development of dystrophies
2. Classification of dystrophies
3. Hyaline droplet dystrophy: development mechanism, macro- and microscopic characteristics, outcome, functional value.
4. Hydropic dystrophy: development mechanism, macro- and microscopic characteristics, outcome, functional meaning.
5. Horny dystrophy: development mechanism, macro- and microscopic characteristics, outcome, functional significance.
6. Parenchymal fatty degeneration (lipidosis): morphogenesis, microscopic diagnostics, functional meaning, outcome.
7. Parenchymal carbohydrate dystrophies: morphogenesis, microscopic diagnostics, functional significance, Exodus.

III. Object of study:

Microslides:

3. Hyaline droplet dystrophy of the renal tubules (stained with hematoxylin and eosin)
4. Hydropic dystrophy of renal tubules (staining with hematoxylin and eosin)
5. Fatty degeneration of the myocardium (staining with Sudan III)

Tables:

1. Hyaline droplet dystrophy of the kidney
2. Hydropic renal dystrophy
3. Fatty degeneration of the liver

Student independent work

Study of microslides.

1. Microslide for sketching: "Hyaline-drop dystrophy of the epithelium of the proximal and distal convoluted tubules of the nephron ". Eosin and hematoxylin staining.

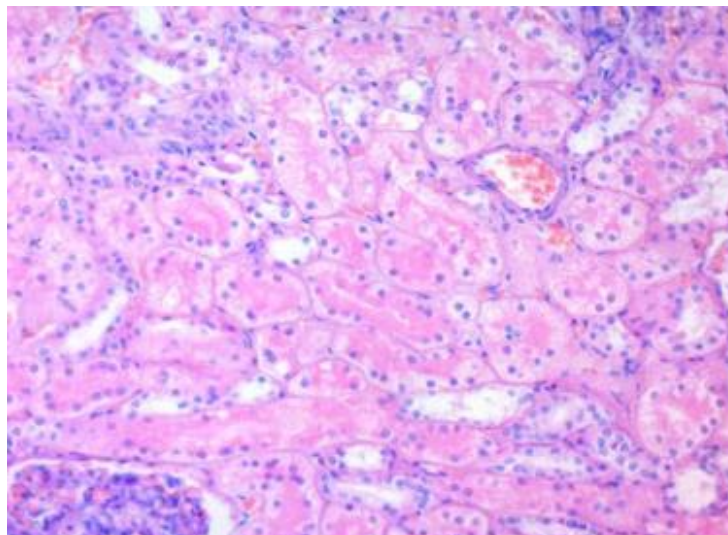
Find the proximal convoluted tubules. Compare them with the tubules of other parts of the nephron, paying attention to:

1. The difference in the state of the epithelium of the proximal convoluted tubules of the nephron and the epithelium of other departments.
2. Significant narrowing of the lumen of the proximal convoluted tubules of the nephron; compare the state of the lumen of the tubules with the norm.

To learn what is the basis of hyaline droplet degeneration of nephrocytes lies the insufficiency of the vacuolar-lysosomal apparatus of the epithelium of the proximal tubules, normally reabsorbing proteins. For this reason, this type of nephrocyte dystrophy very common in nephrotic syndrome, which is a manifestation of many kidney diseases (glomerulonephritis, amyloidosis of the kidneys, paraproteinemic nephropathy, etc. With electron microscopic examination, destruction is observed in mitochondria, endoplasmic reticulum, ribosomes, Golgi complex, brush border.

Sketch under high magnification of the microscope * cross and longitudinal sections of several proximal convolutions tubules with stroma and designate:

1. The appearance in the cytoplasm of large hyaline-like protein droplets merging and filling the entire cage.
2. A large amount of protein in the lumen of the dilated tubules.
3. Absence of nuclei (lysis) in epithelial cells filled with protein masses.
4. Plasma impregnation of the interstitial connective tissue (stroma) of the kidney.



2. **Microslide for sketching:** "Vacuolar or hydropic degeneration of the epithelium of the convoluted tubules nephron ". Eosin and hematoxylin staining

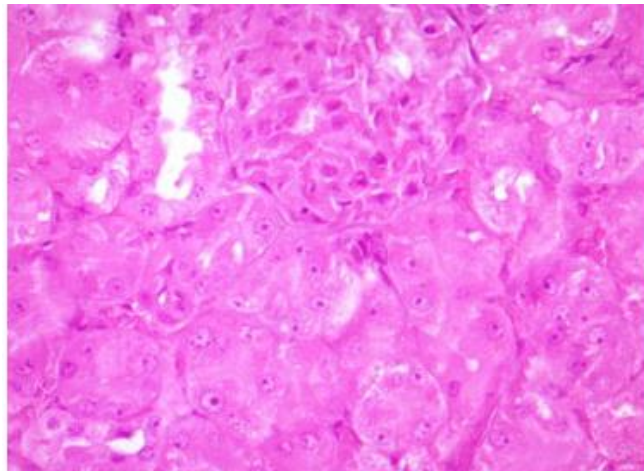
Sketch under high magnification a section of the convoluted tubule of the nephron and mark:

1. The appearance in the cells of the epithelium of vacuoles filled with cytoplasmic fluid, the displacement of the nucleus to the periphery cells or lysis.
2. The accumulation of protein in the lumen of the dilated tubules.
3. Edema, hyperemia of the kidney stroma.

Note the irreversibility of this form of protein dystrophy.

Hydropic degeneration of tissue structures entails oncotic edema of organs - the release of fluid into tissue space. Swelling of tissue structures and organs differs from edema; possible transition of acute swelling to oncotic edema.

It is characteristic that with hydropic dystrophy, lipid staining is usually negative and vacuoles do not contain fat.



3. **Microslide for sketching:** "Fatty infiltration of the liver." Two microslides are given: staining with eosin-hematoxylin and Sudan III.

Note the presence of small and large fatty droplets in the liver cells, located mainly around central veins and on the periphery of the hepatic lobule. Pay attention to the fact that fatty degeneration of the liver occurs under the influence of intoxications and hypoxia.

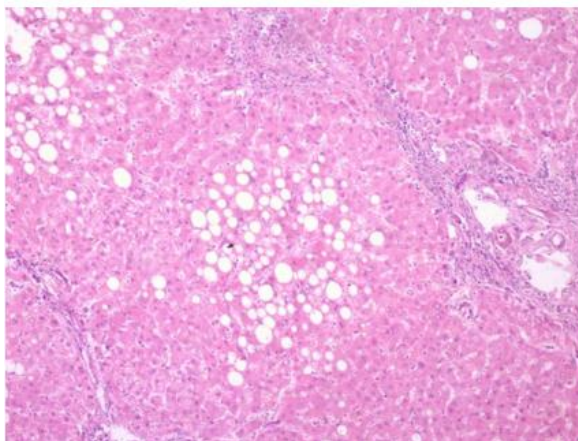
Sketch at high magnification and mark:

1. Central Vein.
2. Small drops of fat in hepatocytes.
3. Large drops of fat in hepatocytes

Mark in the microslide stained with eosin and hematoxylin, in place of fatty drops - voids (result extraction of fats with alcohol).

Note. As indicated, fatty metabolic degeneration and fatty infiltration of parenchymal organs in some cases are morphologically distinguishable processes. A reliable criterion is the conditions for the appearance of lipids in the cytoplasm of hepatocytes and, to some extent, a combination of this process with other forms of decomposition.

To assimilate that in the liver during the decomposition of lipoprotein complexes of the hepatocyte, the degree of refinement of fatty drops is much higher. Under the influence of organ-specific hemodynamic factors, finely dispersed drops are localized mainly along the periphery of the lobules, and with obesity - in the center of the lobules, where the fat droplets are larger. However, these signs are conditional. The localization of fatty drops in the hepatic lobules also depends on the pathways of liver intoxication and the time of its exposure. So, intoxication coming from the intestines causes fatty droplet degeneration of mainly peripheral parts of hepatic lobules.



4. Microslide for the study "Fatty degeneration of the myocardium" (table) (coloring Sudan III) (E). In the cytoplasm cardiomyocytes located around venules and veins are striped yellow accumulations of fat; other muscle cells are free from fatty inclusions. The transverse striation of muscle cells disappears, the nucleus shrinks or lyses.

I. Study of macro-preparations.

1. "Tiger heart" (table). Note the color and consistency of the myocardium and the macroscopic endocardial view.

Explain this figurative expression.

2. To characterize fatty degeneration of the liver (table). Mark yellow color, doughy consistency, dimensions

liver, weight. Test with water. Small pieces of liver containing a lot of lipids do not sink in water.

To understand that any yellow liver, the cells of which contain a large amount of lipids, is called "goose", because such a color has a goose liver when it is fed. "Goose" liver in humans is often the result of two pathological processes, morphologically difficult to distinguish: lipid dystrophy (decomposition) and lipid infiltration. However, in a well-fed goose a similar condition of the liver is not dystrophy, is easily reversible and is a physiological lipid infiltration. Fatty degeneration of the liver is caused, as a rule, by a combination of several types of degeneration, in particular protein, although lipid dystrophy predominates.

Explain the causes of fatty degeneration: these are all kinds of poisoning (chloroform, ether, phosphorus), intestinal intoxication, especially with dysentery, various kinds of prolonged hypoxia, tuberculous intoxication, etc.

To note the possibility of lipid loss from the cytoplasm, for example, in the liver within 5-10 minutes after the onset of poisoning drugs, phosphorus.

Indicate that, normally, up to 5% of free lipid inclusions are in the cytoplasm of liver cells.

Emphasize the role of bound and free lipids in the cytoplasm, which bind toxins and dissolve some of them (chloroform, benzene compounds, etc.)

The plan for the description of the microslide:

1. Title
2. Name the tissue (organ), color
3. Describe the available changes
4. Etiology of the pathological process
5. Pathogenesis
6. Exodous
7. Clinical significance

X. Literature.

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- Electronic library of a medical university www.Studmedlib.ru

Topic: "STROMA-VASCULAR DYSTROPHIES"

I. Objectives:

The student must know	<ul style="list-style-type: none"> • morphological manifestations of vascular-stromal protein dystrophies: <ul style="list-style-type: none"> - mucoid swelling; - fibrinoid swelling; - hyalinosis; - amyloidosis • diseases in which protein dystrophies are considered the leading (main) morphological substrate damage • morphological manifestations of vascular-stromal fatty degeneration • morphological manifestations of vascular-stromal carbohydrate dystrophies
The student must be able to	<ul style="list-style-type: none"> • describe morphological changes in cells and determine the main morphological characteristics of proteinaceous, fatty and carbohydrate stromal-vascular dystrophies based on the use of histochemical research methods; • distinguish between the types of vascular-stromal protein dystrophies; • explain the mechanisms of development of protein dystrophies in various organs; • to evaluate the functional significance of protein dystrophies and their outcomes.
The student must own	<ul style="list-style-type: none"> • Pathological knowledge for understanding the morphogenesis, and microscopic diagnosis of stromal vascular dystrophy

II. Required level of knowledge:

a) from related disciplines

1. The histological structure of tissues
2. Biochemical metabolic processes

b) from the previous topics:

1. concept of dystrophies
2. mechanisms of development of dystrophies

c) from the current lesson

8. Definition of stromal-vascular dystrophies.
9. Classification of stromal-vascular dystrophies.
10. Types of stromal-vascular protein dystrophies.
11. The essence of mucoid swelling.
12. The essence of fibrinoid swelling.
13. Hyalinosis.
14. Amyloidosis.
15. Stromal-vascular fatty degeneration.
16. Stromal-vascular carbohydrate dystrophies.
- 17..

III. Object of study:

Microslides:

6. Hyalinosis of cerebral vessels in hypertension (staining with hematoxylin and eosin)
7. Amyloidosis of the kidney (staining with Congo red and hematoxylin-eosin)

Macro preparations:

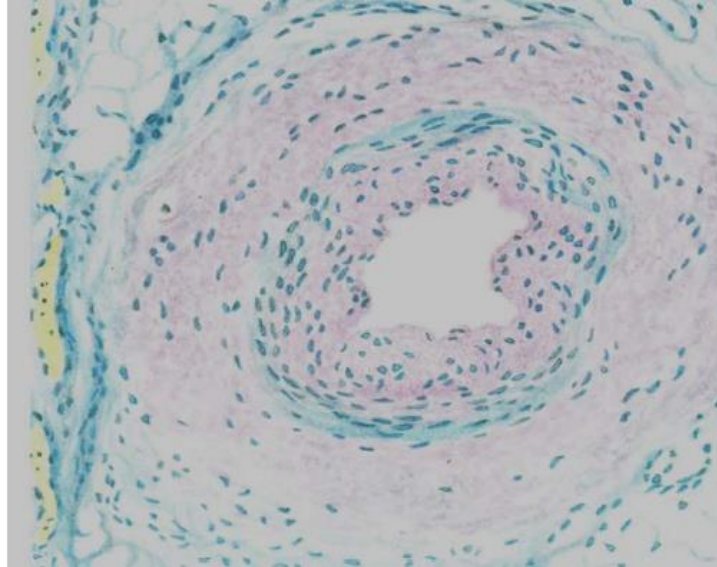
4. Sago spleen

5. Obesity of the heart

Tables:

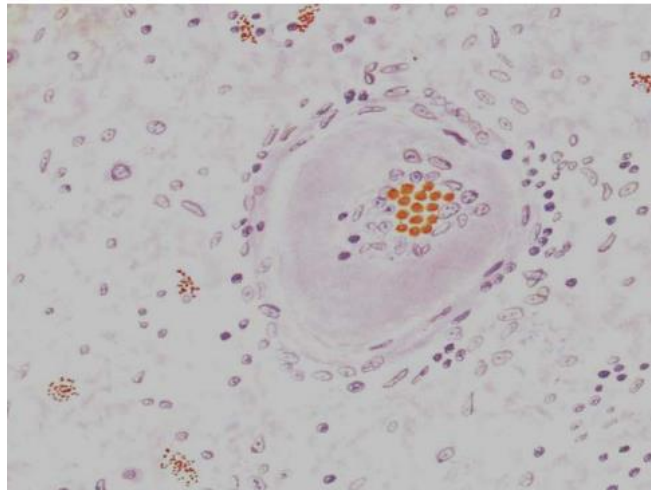
1. Muroid swelling of the endocardium in rheumatism (staining with toluidine blue)
2. Fibrinoid swelling of the endocardium in rheumatism (staining with picrofuschin)

Material and tasks for independent work:



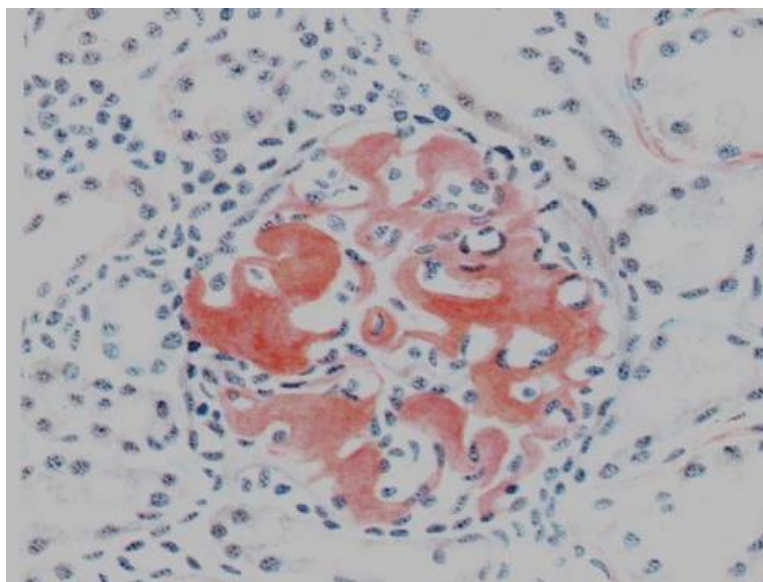
Microslide for sketching: Muroid swelling of the artery wall with rheumatism.

The artery wall is thickened, metachromatic due to the accumulation of acidic glycosaminoglycans. Toluidine blue staining.



Microslide for sketching: Hyalinosis of a small artery of the brain (with hypertension).

The artery wall is thickened, represented by a homogeneous hyaline-like substance, the lumen is sharply narrowed. The brain tissue is edematous. Staining with hematoxylin and eosin.



Microslide for sketching: Kidney amyloidosis.

Amyloid in the capillary loops of the glomerulus and under the tubular basement membrane.
Congo red color.

The plan for the description of the microslide:

1. Title
2. Name the tissue (organ), color
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7. Clinical significance

Literature.

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9. M.A. Fingers A.B. Ponomarev / Atlas on pathological anatomy M .: Medicine, 2005.
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11. GZ Lekoev. A series of lectures on pathological anatomy. Vladikavkaz, 2010
12. Textbook in 2 volumes by M.A. Fingers, N.M. Anichkov. Pathological anatomy M .: Medicine, 2005
13. Electronic library of a medical university www.Studmedlib.ru

Topic: "MIXED DYSTROPHIES".

Knowledge of the topic is necessary for mastering other topics of general and particular courses of pathological anatomy, as well as for clinical anatomical analysis in the study of clinical disciplines and the practical work of a doctor.

I. Objectives:

The student must know	<ul style="list-style-type: none">• morphological manifestations of chromoprotein metabolism disorders:<ul style="list-style-type: none">- hemosiderin;- bilirubin;- hematoidin, hematin, porphyrins;- melanin- lipofuscin• morphological manifestations of chromoprotein metabolism disorders• morphological manifestations of mineral metabolism disorders:<ul style="list-style-type: none">- calcium;- copper;- iron;- potassium• formation of stones, mechanisms, factors, types of calculi• morphological manifestations of impaired metabolism of nucleoproteins
The student must be able to	<ul style="list-style-type: none">• describe morphological changes in cells and determine the main morphological characteristics of metabolic disorders of hemoglobinogenic, proteinogenic and lipogenic pigments on the basis of the use of histochemical research methods;• describe morphological changes and determine the main morphological characteristics metabolic disorders of calcium, copper;• determine the types of calculi;• to determine the main morphological characteristics of metabolic disorders of pigments, minerals, nucleoproteins;
The student must own	<ul style="list-style-type: none">• Pathological knowledge for understanding morphogenesis, and microscopic diagnosis of impaired exchange of chromoproteins, minerals, nucleoproteins

II. Required level of knowledge:

a) from related disciplines

1. The histological structure of tissues
2. Biochemical metabolic processes

b) from the previous topics:

1. concept of dystrophies
2. mechanisms of development of dystrophies

c) from the current lesson

18. Classification of chromoproteins

19. Disorders of hemosiderin metabolism
20. Disorders of bilirubin metabolism
21. Disorders of the exchange of hematoidin, hematin and hematoporphyrin
22. Disorders of the metabolism of proteinogenic (tyrosine-tryptophan) pigments
23. Disorders of the metabolism of lipogenic pigments (lipopigments)
24. The functions of calcium in the body
25. Types of calcifications (calcifications)
26. Macro- and microscopic characteristics of the types of calcifications
27. Types of stones formed in the urinary tract
28. Types of stones formed in the biliary tract
29. Local and general factors of stone formation
30. Violation of the metabolism of nucleoproteins

III. Object of study:

Microslides:

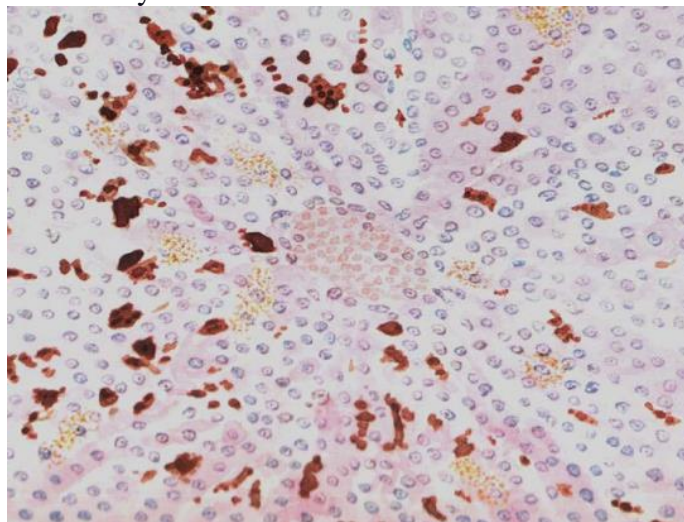
8. Hemomelanosis of the liver (stained with hematoxylin and eosin)
9. Lipofuscinosis of the myocardium with its atrophy (staining with Sudan)
10. Hemosiderosis of the lung (brown induration of the lung). Perls staining eleven.
11. Metastatic calcification of the kidneys (staining with hematoxylin and eosin)
12. Gout (hematoxylin and eosin staining) thirteen.
13. Petrification of an atherosclerotic plaque (staining with hematoxylin and eosin)

Tables:

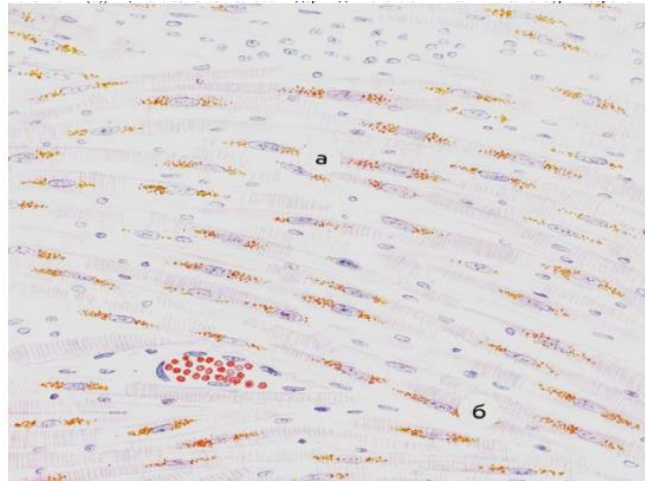
3. Liver with obstructive jaundice
4. Malarial spleen
5. Syphilitic leukoderma
6. Kidney stones
7. Gallbladder stones
8. Petrification in the lungs

Practical work

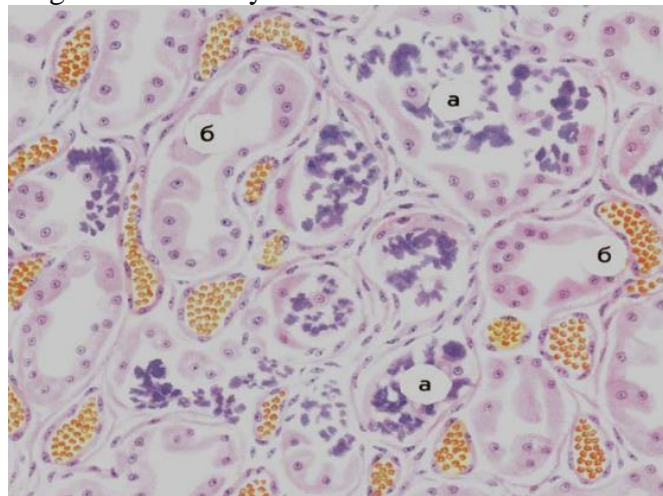
1. Microslide for sketching Hemomelanosis of the liver. Hemomelanosis is associated with ingestion of malaria pigment (hemomelanin) into the blood, which occurs when erythrocytes are destroyed and phagocytosis by liver cells. In them Along with hemomelanin, hemosiderin is released. Staining with hematoxylin and eosin.



2. Microslide for sketching Lipofuscinosis of the myocardium in its atrophy . Muscle fibers of the heart thinned (a), in the cytoplasm along the poles of the nuclei, accumulations of small yellow-brown lipofuscin grains (b) are visible.



3. Metastatic calcification of the kidneys. A - tubules with lime-encrusted nephrocytes; B- preserved tubules. Staining with hematoxylin and eosin.



4. Microslide for sketching Gout Around the deposits of uric acid salts (a), giant multinucleated cells, absorbing salts (c), in the joint capsule - proliferation of connective tissue (b).

The plan for the description of the microslide:

1. Title
2. Name the tissue (organ), color
3. Describe the available changes
4. Etiology of the pathological process
5. Pathogenesis
6. Exodus
7. Clinical significance

X. Literature.

14. AI Strukov, VV Serov. Pathological anatomy: textbook / M.: GEOTAR-Media, 2014
15. M. Finger, NM Anichkov, MG Rybakova / Guide to practical exercises in pathological anatomy / M.: Medicine, 2002
16. M.A. Fingers A.B. Ponomarev / Atlas on pathological anatomy M.: Medicine, 2005.
17. Workshop on general pathological anatomy K.M. Kozyrev, K. D. Salbiev, A.A. Epkhiev Vladikavkaz: Press Project, 2006
18. GZ Lekoev. A series of lectures on pathological anatomy. Vladikavkaz, 2010
19. Textbook in 2 volumes by M.A. Fingers, N.M. Anichkov. Pathological anatomy M.: Medicine, 2005
20. Electronic library of a medical university www.Studmedlib.ru

Topic: "GENERAL AND LOCAL DISORDERS OF BLOOD CIRCULATION".
 Knowledge of the topic is necessary for mastering other topics of general and particular courses of pathological anatomy, as well as for clinical anatomical analysis in the study of clinical disciplines and the practical work of a doctor.

I. Objectives:

The student must know	<ul style="list-style-type: none"> •Definition of venous congestion, causes and mechanisms of its development •Definition of shock, name types •Definition of disseminated intravascular coagulation •Types of edema •Definition of thrombosis, name its causes, conditions •Definition of embolism, its types •Definition of a heart attack, its cause and stage of development
The student must be able to	<ul style="list-style-type: none"> •Give the morphological characteristics of shock organs, distinguish it from thromboembolism and posthumous blood clot •To assess the importance of venous plethora for the body, the mechanisms of death in chronic venous congestion •Give the morphological characteristics of thrombosis, distinguish it from thromboembolism and postmortem clotting of blood •To assess the significance of embolism for the body, the mechanisms of death in pulmonary thromboembolism arteries •Diagnose various types of infarction by macro- and microscopic picture
The student must own	<ul style="list-style-type: none"> •Pathological knowledge for understanding morphogenesis, and microscopic diagnostics of circulatory and lymph drainage disorders • Pathological knowledge for understanding morphogenesis, and microscopic diagnosis of local circulatory disorders

II. Required level of knowledge:

a) from related disciplines

1. The histological structure of tissues
2. Biochemical metabolic processes

b) from the previous topics:

1. concept of dystrophies
2. mechanisms of development of dystrophies

c) from the current lesson

1. General circulatory disorders
2. General arterial plethora
3. General venous congestion
4. General anemia
5. General acute anemia

6. General chronic anemia
7. Disorders of lymphatic drainage
8. Violations of the content of tissue fluid
9. Disseminated intravascular coagulation syndrome
10. Shock
11. Local arterial plethora
12. Local venous congestion
13. Bleeding and hemorrhage
14. Thrombosis
15. Embolism
16. Local anemia, or ischemia
17. Heart attack

III. Object of study:

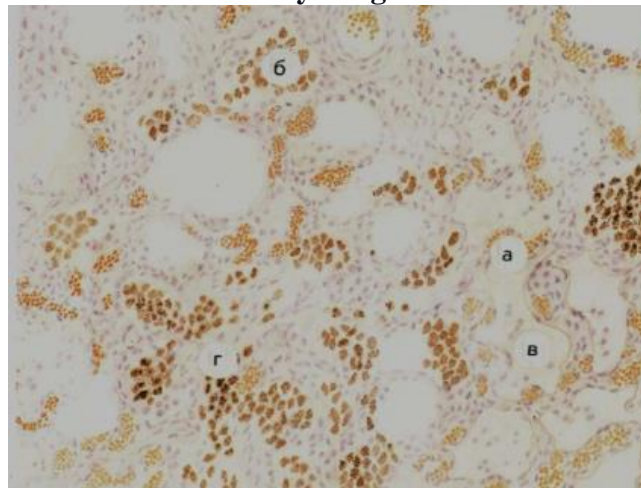
Microslides:

1. Chronic venous blood filling of the liver (nutmeg liver)
2. Brown induration of the lungs
3. Organization and sewerage of a blood clot
4. Fat embolism of the lung vessels
5. Brain hemorrhage

Tables:

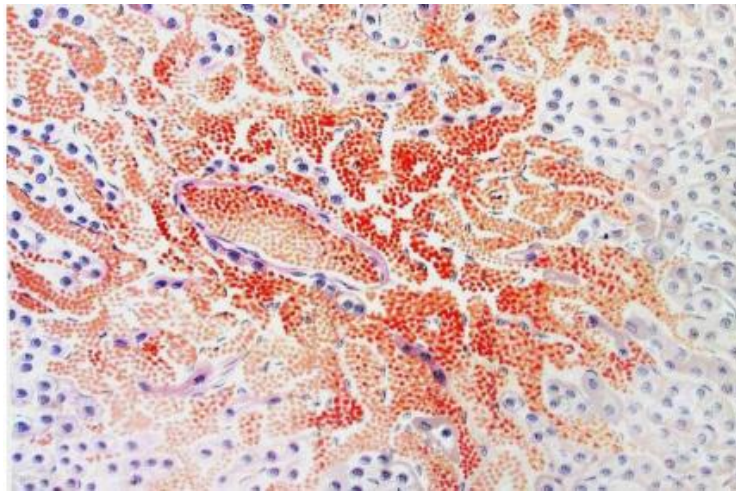
1. Chronic venous blood filling of the liver (nutmeg liver)
2. Brown induration of the lungs
3. Mixed thrombus
4. Kidney rupture
5. Fat embolism of the lung

Self-study assignments

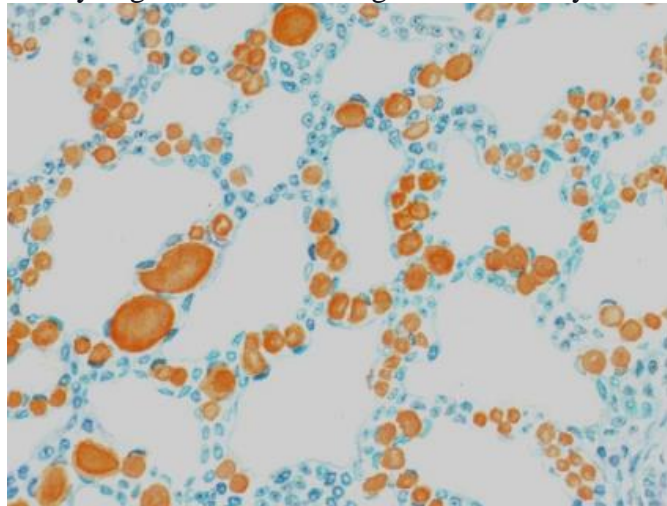


Microslide for sketching. Chronic venous congestion of the lungs (brown induration of the lungs).

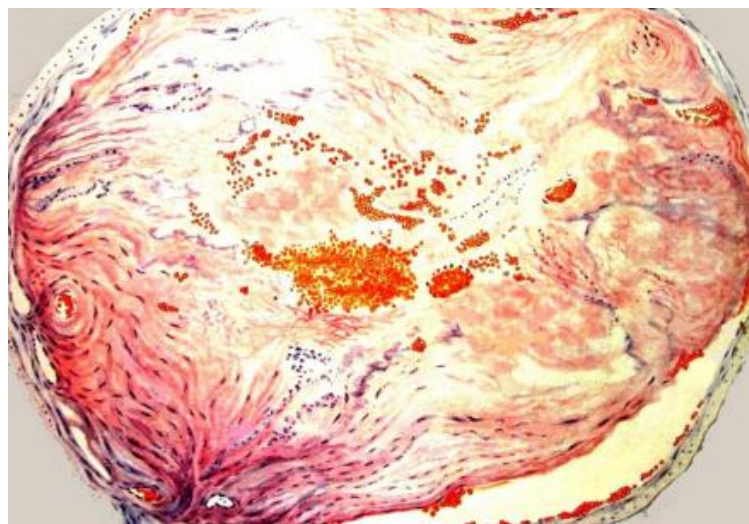
The vessels of the interalveolar septa are dilated (a). In the stroma of the lung and the lumen of the alveoli clusters of siderophages loaded with hemosiderin (b). Part of the alveoli is filled with edematous liquid (c). Interalveolar septa are thickened and sclerosed (d).



Microslide for sketching. Chronic venous congestion liver (nutmeg liver). In the center of the lobules, the capillaries are sharply expanded, are full-blooded, liver cells are atrophic, and in the area of hemorrhage destroyed. On the periphery of the lobules, the hepatic tracts are preserved, hepatocytes in a state of fatty degeneration. Staining with hematoxylin and eosin.



Microslide for sketching. Fatty embolism of blood vessels lung . Fat stained with Sudan III is visible in the vessels of the interalveolar septa in orange.



Microslide for sketching. Obstructive thrombus with symptoms organization and vascularization.

The lumen of the vessel is almost completely closed by thrombotic masses, consisting of fibrin, leukocytes and hemolyzed erythrocytes. Among the granulations that

a thrombus grows, from the side of the endothelial lining of the vessel there are lined endothelium of the gap. Hematoxylin and eosin staining

The plan for the description of the microslide:

1. Title
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7. Clinical significance

Literature.

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6. Textbook in 2 volumes by M.A. Fingers, N.M. Anichkov. Pathological anatomy M .: Medicine, 2005
7. Electronic library of a medical university www.Studmedlib.ru

Topic of the lesson: "INFLAMMATION"

Knowledge of the topic is necessary for mastering other topics of general and particular courses of pathological anatomy, as well as for clinical anatomical analysis in the study of clinical disciplines and the practical work of a doctor.

I. Objectives:

The student must know	<ul style="list-style-type: none"> • Definition of inflammation • Etiology of inflammation ”. Classic clinical manifestations. • Morphological manifestations of the inflammatory process. • Classification of inflammation • Exudative inflammation. Classification. Pathogenesis. • Morphological characteristics of various types of exudative inflammation.
The student must be able to	<ul style="list-style-type: none"> • describe morphological changes in cells and determine the main morphological characteristics of various types of inflammation based on the use of histochemical research methods; • predict the outcome of these processes and assess their significance based on the nature, degree, the prevalence and localization of inflammation.
The student must own	Pathological knowledge for understanding morphogenesis, and microscopic diagnosis of inflammatory process.

II. Required level of knowledge:

a) from related disciplines

1. The histological structure of tissues
2. Pathophysiological aspects of the inflammatory process.

b) from the current lesson

31. Morphogenetic mechanisms of inflammation development.
32. Classification of inflammation.
33. Exudative inflammation: development mechanism, macro- and microscopic characteristics, outcome, functional significance.

III. Object of study:

Microslides:

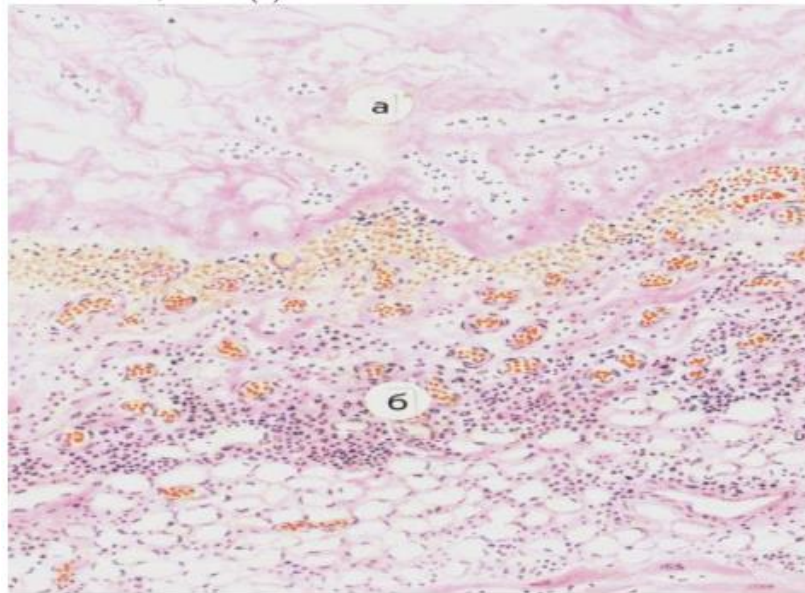
14. Fibrinous pericarditis in rheumatism (staining with hematoxylin and eosin)
15. Serous dermatitis with eczema (staining with hematoxylin and eosin)

Tables:

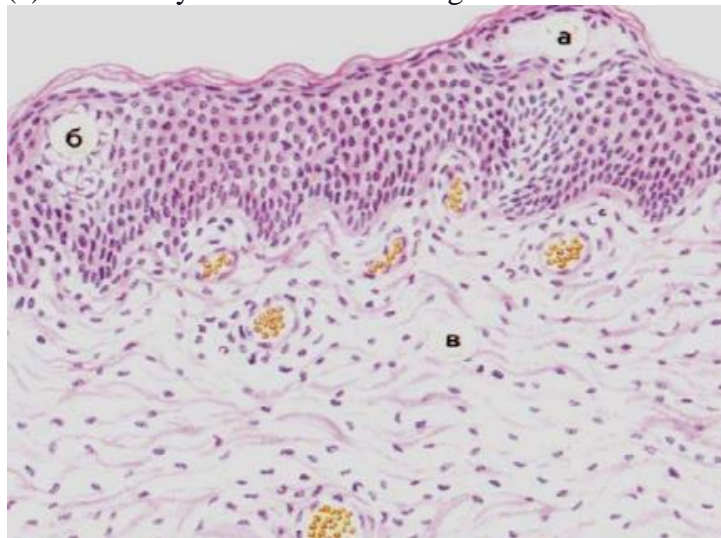
6. Fibrinous inflammation
7. Exudative inflammation

Practical work:

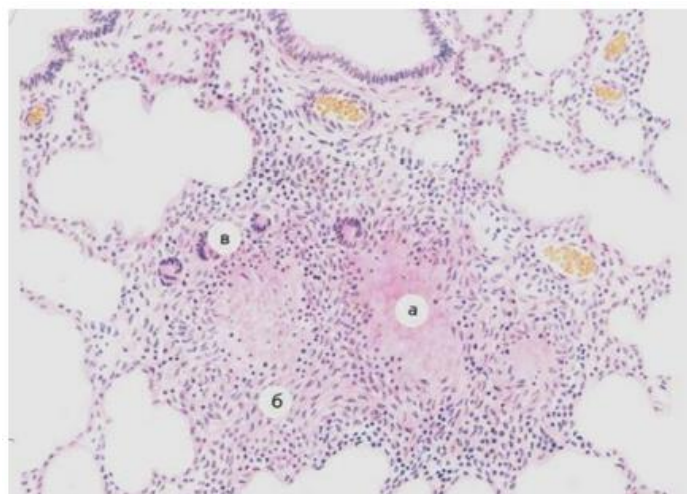
Microslide for sketching . Fibrinous pericarditis in rheumatism. Env. Hematoxylin and eosin. Loose overlays of fibrinous exudate on the epicardium (a). The underlying tissues are full-blooded, edematous, infiltrated with leukocytes. (b)



Microslide for sketching . Serous dermatitis with eczema. The vesicle of the epidermis is filled with serous exudate (a). In this area, there is a discompletion of cells of the thorny layer (b), dermis full-blooded (c). Hematoxylin and eosin staining

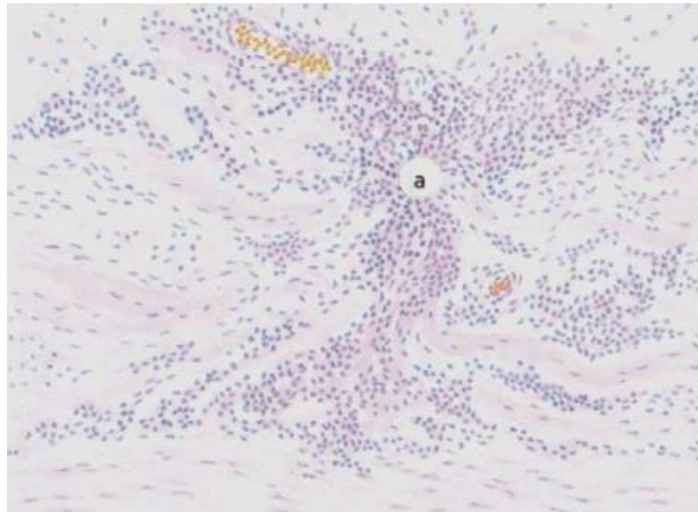


Microslide for sketching . Tuberculous granulomas in the lung. Env. Hematoxylin and eosin. Caseous necrosis of the central part of the granulomas (a), on the border with the foci of necrosis, epithelioid cells (b) and giant cells of Pirogov-Langhans (c). On the periphery of the granulomas, there are accumulations of lymphoid cells.



Microslide for sketching . Syphilitic mesaortitis. Env. Hematoxylin and eosin. Gummy

infiltrates in the middle aortic membrane (a). Destruction of elastic fibers in areas of gummy infiltration.



Microslide description plan

1. Title
2. Name the tissue (organ), color
3. Describe the available changes
4. Etiology of the pathological process
5. Pathogenesis
6. Exodus
7. Clinical significance

Literature.

1. AI Strukov, VV Serov. Pathological anatomy: textbook / M .: GEOTAR-Media, 2014
2. MA Fingers, NM Anichkov, MG Rybakova / Guide to practical exercises in pathological anatomy / M .: Medicine, 2002
3. M.A. Fingers A.B. Ponomarev / Atlas on pathological anatomy M .: Medicine, 2005.
4. Workshop on general pathological anatomy K.M. Kozyrev, K. D. Salbiev, A.A. Epkhiev Vladikavkaz: Project press, 2006
5. G.Z. Lekoev. A series of lectures on pathological anatomy. Vladikavkaz, 2010
6. Textbook in 2 volumes by M.A. Fingers, N.M. Anichkov. Pathological anatomy M .: Medicine, 2005
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Knowledge of the topic is necessary for mastering other topics of general and particular courses of pathological anatomy, as well as for clinical anatomical analysis in the study of clinical disciplines and the practical work of a doctor.

I. Objectives:

The student must know	<ul style="list-style-type: none"> •Determination of hypersensitivity reactions. •Immunopathological features and morphological manifestations of reactionshypersensitivity types I-IV. •Definition of autoimmune diseases. •Definition, etiology, pathogenesis, morphological manifestations, complications and outcomes autoimmune diseases on the example of Hashimoto's struma, systemic lupus erythematosus, rheumatoid arthritis, Sjogren's syndrome, periarteritis nodosa.
The student mustbe able to	<ul style="list-style-type: none"> •To study the issues of etiology, pathogenesis, morphology, complications and outcomes of reactions hypersensitivity.
The student must own	<ul style="list-style-type: none"> •Pathological knowledge for understanding morphogenesis, and microscopic diagnostics of the inflammatory process.

II. Required level of knowledge:

a) from related disciplines

1. The histological structure of tissues
2. Pathophysiological aspects of immune processes.

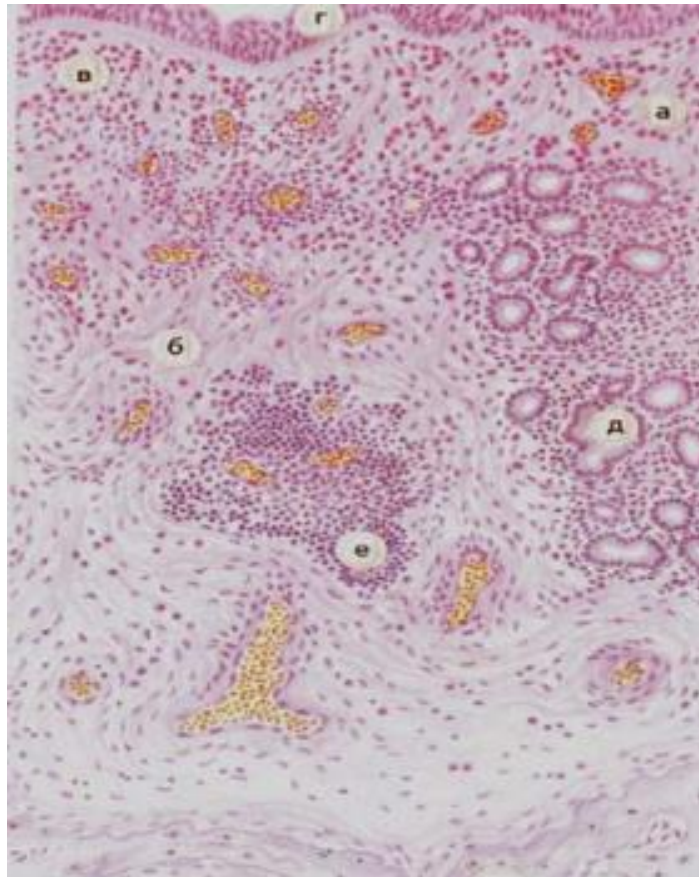
b) from the current lesson

- Immune hypersensitivity.
- Hypersensitivity type I (immediate).
- Type II hypersensitivity.
- Type III hypersensitivity.
- Type IV (delayed) hypersensitivity.
- Morphological changes in organs with hypersensitivity.
- Graft rejection.
- Autoimmune diseases.
- Congenital (primary) immunodeficiency.
- Secondary (acquired) immunodeficiency.

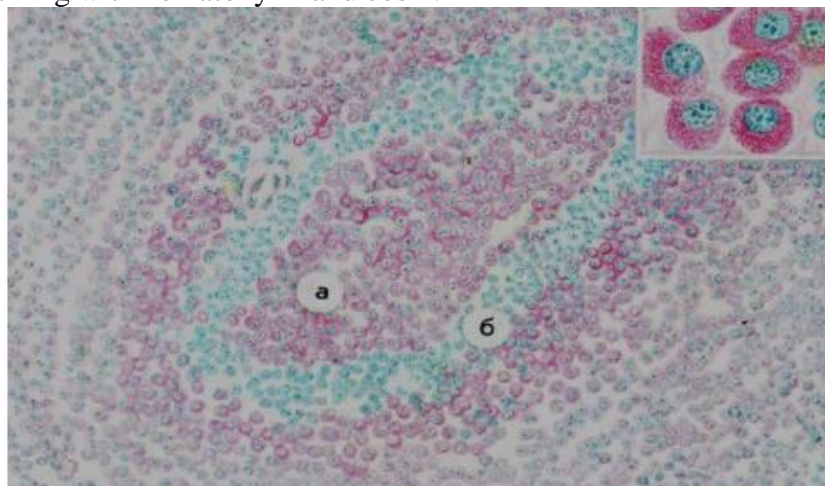
III. Object of study:

- Tables:
- Allergic rhinitis

Practical work



Microslide for sketching: Allergic rhinitis. A - the vessels of the mucous membrane are dilated, full-blooded. B - the connective tissue is edematous. B - eosinophilic leukocytes predominate in the inflammatory infiltrate. G - integumentary epithelium. D - glands. E - lymphoid follicle. F - bone beams. Staining with hematoxylin and eosin.



Microslide for sketching the Spleen during antigenic stimulation. The cytoplasm of plasma cells is colored pyronine in a crimson-red color (a), which indicates the accumulation of RNA in cells and active synthesis antibodies. The nuclei are greenish-blue (b). Staining according to Brachet with methyl green and pyronine.

Microslide description plan

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5. Pathogenesis

6. Exodus

7. Clinical significance

Literature.

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2. MA Fingers, NM Anichkov, MG Rybakova / Guide to practical exercises in pathological anatomy / M .: Medicine, 2002
3. M.A. Fingers A.B. Ponomarev / Atlas on pathological anatomy M .: Medicine, 2005.
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Topic: "PROCESSES OF REGENERATION AND ADAPTATION".

Knowledge of the topic is necessary for mastering other topics of general and particular courses of pathological anatomy, as well as for clinical anatomical analysis in the study of clinical disciplines and in the practical work of a doctor.

I. Objectives:

The student must know	<ul style="list-style-type: none">•Determination of adaptation and compensation•The essence of compensatory and adaptive processes•Types of compensatory and adaptive processes•Types of hypertrophies, mechanisms of their development•Types of regeneration, their mechanisms•The concept of metaplasia
The student must be able to	<ul style="list-style-type: none">•Diagnose myocardial hypertrophy by macro- and microscopic picture•Diagnose granulation tissue by microscopic picture•Diagnose atrophy by macroscopic picture
The student must own	<ul style="list-style-type: none">•Pathological knowledge for understanding morphogenesis, and microscopic diagnosis compensatory and adaptive processes

II. Required level of knowledge:

a) from related disciplines

1. The histological structure of tissues
2. Biochemical metabolic processes

b) from the previous topics:

1. concept of dystrophies
2. mechanisms of development of dystrophies

c) from the current lesson

1. Definitions of the concepts of "adaptation" and "compensation".
2. Compensatory and adaptive processes: types; phases and stages of the compensatory process.
3. Morphological manifestations of various types of compensatory and adaptive processes: regeneration, hypertrophy, hyperplasia, atrophy, metaplasia, mechanisms of their development.
4. The functional significance of compensatory and adaptive processes.
5. Wound healing, types, morphology.

III. Object of study:

Microslides:

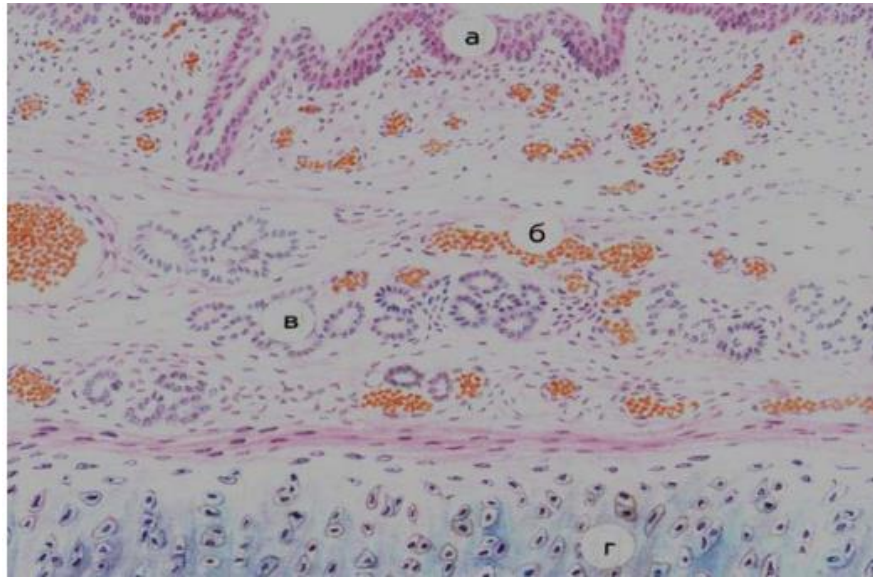
1. Immature granulation tissue (stained with hematoxylin and eosin).
2. Mature granulation tissue (stained with hematoxylin and eosin).
3. Myocardial hypertrophy - No. 58, (staining with hematoxylin and eosin).
4. Metaplasia of bronchial epithelium - No. 245, (stained with hematoxylin and eosin).

Tables:

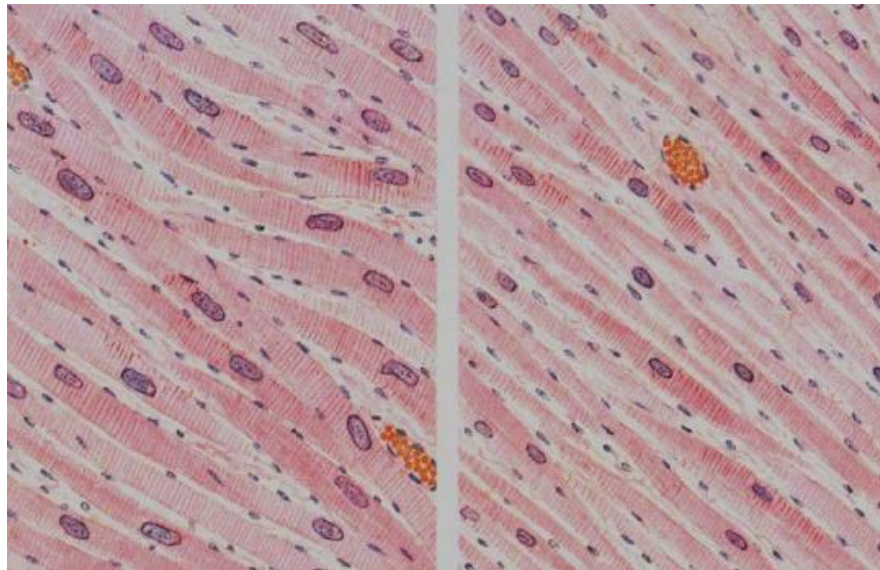
1. Wound healing.
2. Types and levels of regeneration.
3. Metaplasia of the epithelium in the bronchus.
4. Regeneration of connective tissue.

5. Myocardial hypertrophy.
6. Endometrial hyperplasia.

V. Practical work



Microslide for sketching. Metaplasia of the epithelium of the mucous membrane bronchus (with avitaminosis A). Staining with hematoxylin and eosin. a- stratified squamous epithelium in place of a single-layer cylindrical epithelium; b - blood vessels, c - glands, d - cartilage.



Microslide for sketching. Myocardial hypertrophy. Hypertrophied muscle fibers (left) compared to normal (right) increased in size, their nuclei are also enlarged, hyperchromatic. Coloration hematoxylin and eosin.

Microslide description plan

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6. Iso
7. Clinical significance

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Topic of the lesson: "Basic properties of tumors. Tumors from epithelial tissue. "

Knowledge of the topic is necessary for mastering other topics of general and particular courses of pathological anatomy, as well as for clinical anatomical analysis in the study of clinical disciplines and the practical work of a doctor.

I. Objectives:

The student must know	<ul style="list-style-type: none"> •Definition of tumors. •Etiology and theories of tumor occurrence •Tumor morphology. •Tumor growth. Types of tumor growth. •Classification of tumors •Morphology and types of tumors from epithelial tissue.
The student must be able to	<ul style="list-style-type: none"> •Distinguish between benign and malignant tumors by the nature of their growth, differentiation, degree of tissue and cellular atypism •Describe morphological changes in major epithelial tumors, predict their outcome
The student must own	<ul style="list-style-type: none"> • Pathological knowledge for understanding morphogenesis, and microscopic diagnostics of the tumor process.

II. Required level of knowledge:

a) from related disciplines

1. The histological structure of tissues
2. Pathophysiological aspects of tumor processes.

b) from the current lesson

- Definition of tumors
- Etiology, tumor growth
- Classification of tumors.
- Morphological characteristics of the tumor process.

III. Object of study:

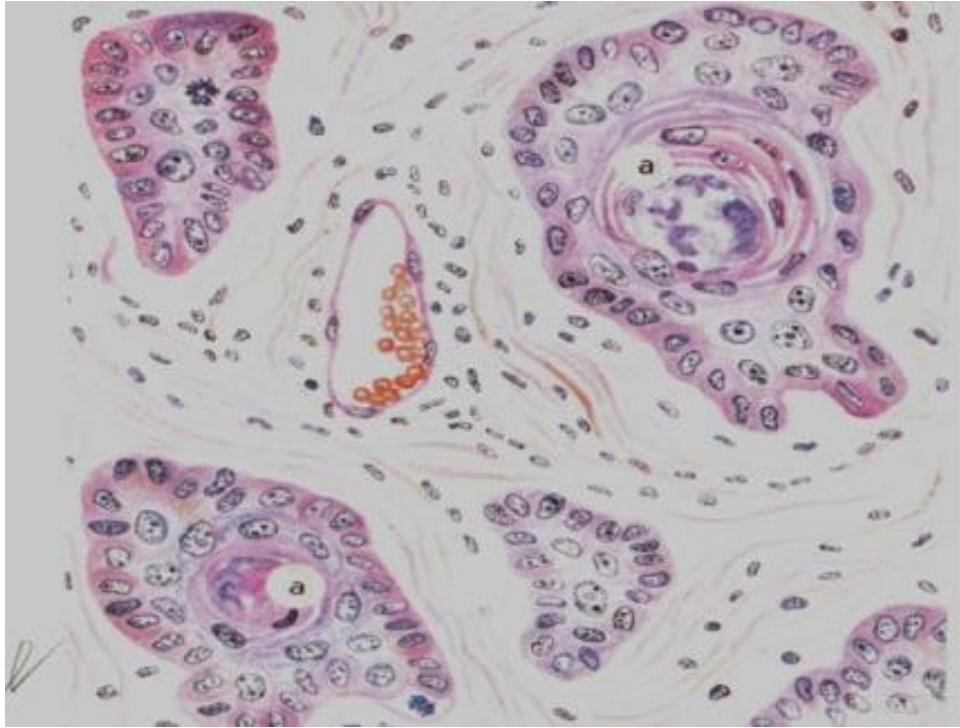
Tables

- Skin papilloma - (wart).
- Papilloma of the bladder or larynx.
- Squamous cell carcinoma of the skin with and without keratinization
- Signet ring cell carcinoma
- Mucous cancer
- Fibrous stomach cancer

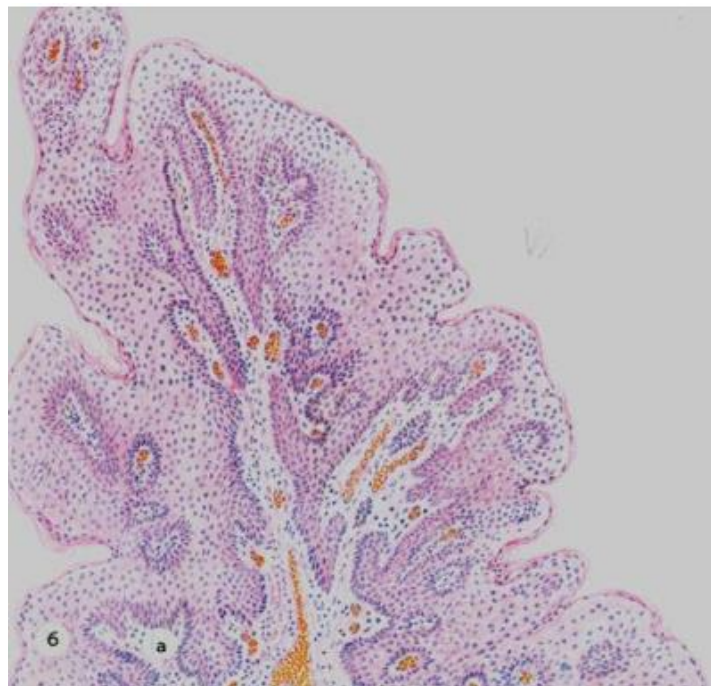
Microslides

- Adenocarcinoma
 - Stomach cancer
 - Squamous cell carcinoma of the skin without keratinization
- Papilloma of the skin

Practical work



Microslide for sketching. Keratinizing squamous cell carcinoma of the skin. Nested accumulations of tumor cells keratinizing in the central sections (a). Hematoxylin and eosin staining



Microslide for sketching. Papilloma of the skin. The connective tissue papillae of the tumor (a) are covered with flat keratinized epithelium (b). Hematoxylin and eosin staining

Microslide description plan

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6. Exodus

7. Clinical significance

Literature.

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6. Textbook in 2 volumes by M.A. Fingers, N.M. Anichkov. Pathological anatomy M .: Medicine, 2005
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Topic of the lesson: "Tumors from mesenchymal, nervous and melanin-producing tissues."
 Knowledge of the topic is necessary for mastering other topics of general and particular courses of pathological anatomy, as well as for clinical anatomical analysis in the study of clinical disciplines and the practical work of a doctor.

I. Objectives:

The student must know	<ul style="list-style-type: none"> •Classification of non-epithelial tumors •Brief description, histological signs, typical localization of tumors from the mesenchyme •Definition, classification, morphological characteristics of melanin-producing tumors •Classification and brief morphological characteristics of benign and malignant tumors of the nervous tissue
The student must be able to	<ul style="list-style-type: none"> •Describe morphological and histological features of major non-epithelial tumors, predict their outcome
The student must own	<ul style="list-style-type: none"> • Pathological knowledge for understanding morphogenesis, and microscopic diagnostics of tumors from the mesenchyme, nervous and melanin-producing tissues.

II. Required level of knowledge:

a) from related disciplines

1. The histological structure of tissues
2. Pathophysiological aspects of immune processes.

b) from the current lesson

- Determination of mesenchymal tumors.
- Classification of epithelial tumors
- Macroscopic and microscopic characteristics of mesenchymal tumors
- Tumors of melanin-forming tissue
- Bone-forming and cartilage-forming tumors
- Tumors of the central nervous system and meninges

III. Object of study:

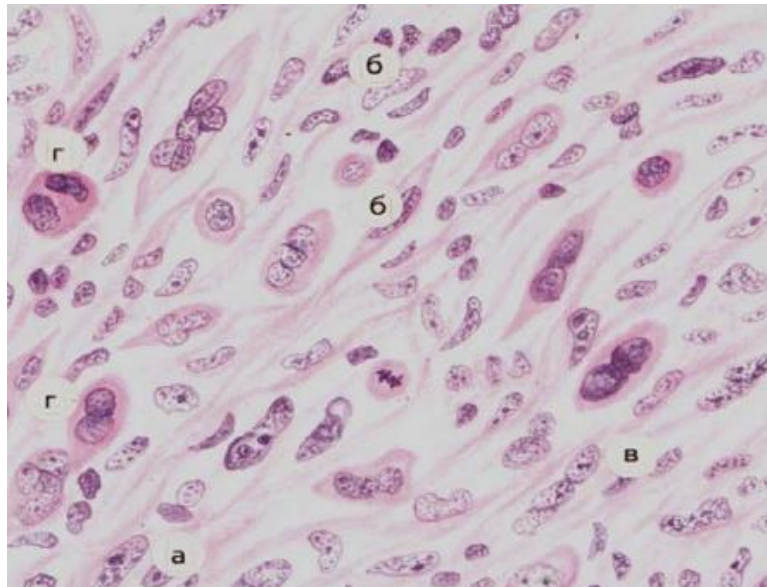
Tables

- Cavernous hemangioma of the liver
- Melanoma

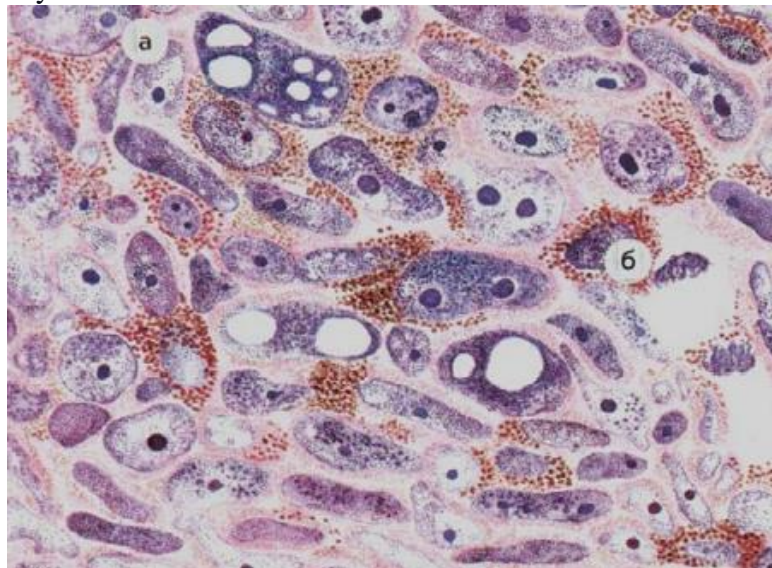
Microslides:

- Capillary hemangioma
- Melanoma
- Low-grade fibrosarcoma

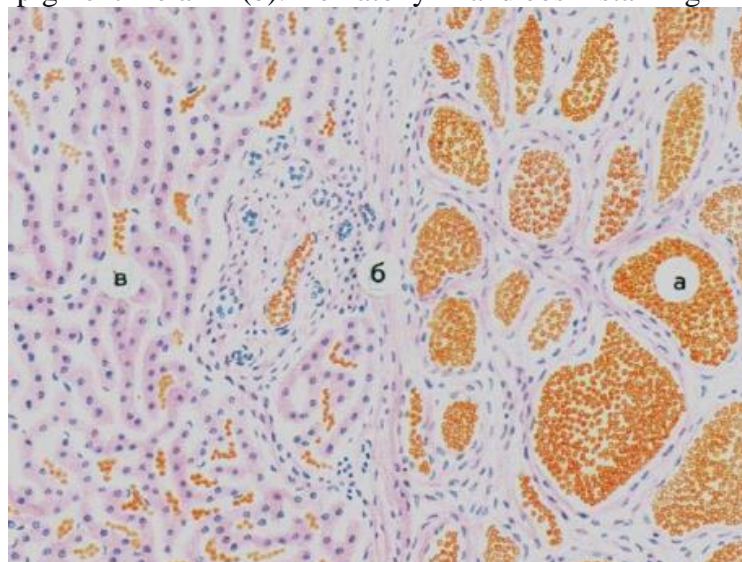
Self-study material



Microslide for sketching: Low-grade fibrosarcoma. The tumor consists of various sizes and the shape of cells: round (a), epithelioid type (b), fusiform (c), giant multinucleated (d). Coloration hematoxylin and eosin



Microslide for sketching: Melanoma. Tumor cells are extremely polymorphic (a). The cytoplasm of many of them contains fine-grained brown pigment melanin (b). Hematoxylin and eosin staining



Microslide for sketching: Cavernous hemangioma of the liver. Avascular cavities filled with blood; b - connective tissue capsule; c - liver tissue. Staining with hematoxylin and eosin.

Microslide description plan

1. Title
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6. Exodius
7. Clinical significance

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3. M.A. Fingers A.B. Ponomarev / Atlas on pathological anatomy M .: Medicine, 2005.
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5. G.Z. Lekoev. A series of lectures on pathological anatomy. Vladikavkaz, 2010
6. Textbook in 2 volumes by M.A. Fingers, N.M. Anichkov. Pathological anatomy M .: Medicine, 2005
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Topic of the lesson: "Diseases of the heart and blood vessels, diseases of the connective tissue."
 Knowledge of the topic is necessary for mastering other topics of general and particular courses of pathological anatomy, as well as for clinical anatomical analysis in the study of clinical disciplines and in the practical work of a doctor.

I. Objectives:

The student must know	<ul style="list-style-type: none"> •morphological features of atherosclerosis, hypertension; •etiology, pathogenesis, morphology of atherosclerosis and hypertension at different stages their development •morphogenesis, complications, outcomes of clinical and anatomical forms of atherosclerosis •long-term consequences of diseases, causes and mechanisms of dying (thanatogenesis) in atherosclerosis and hypertension; morphological features of ischemic heart disease, cerebrovascular diseases, rheumatic diseases •complications, outcomes. •long-term consequences of diseases, causes and mechanisms of dying (thanatogenesis);
The student must be able to	<ul style="list-style-type: none"> •determine macro- and microscopic manifestations of hypertension and atherosclerosis, explain the mechanism of development, assess its probable outcome and determine the significance of complications for organism •determine the macro- and microscopic manifestations of coronary heart disease and cerebrovascular diseases, rheumatic diseases, explain the mechanism of development, evaluate its probable outcome and determine the significance of complications for the body
The student must own	<ul style="list-style-type: none"> •pathological knowledge for understanding morphogenesis, and microscopic diagnosticscardiovascular disease.

II. Required level of knowledge:

a) from related disciplines

1. The histological structure of tissues.
2. Pathophysiology of the cardiovascular system and blood pressure regulation.

b) from the current lesson

- Etiology of atherosclerosis
- Pathogenetic factors in the development of atherosclerosis
- Pathological anatomy and morphogenesis
- Clinical course
- Complications of atherosclerosis
- Chronic complications

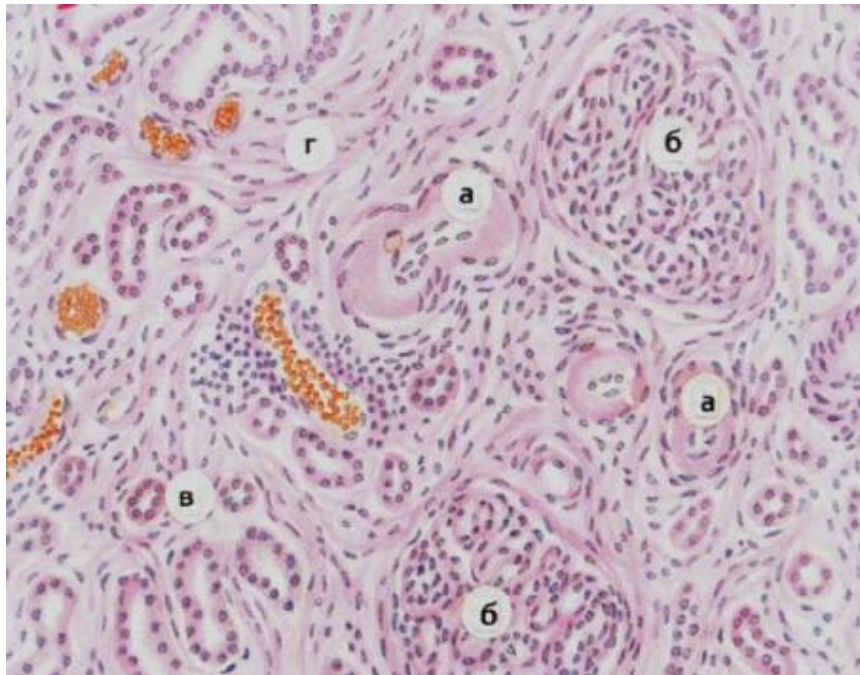
- Acute complications
- Hypertension: etiology, pathogenesis, pathological anatomy, causes of death
- Definition, classification of ischemic heart disease.
- Sudden coronary death.
- Ischemic myocardial dystrophy: definition, morphology.
- Myocardial infarction: definition, etiology, classification, morphology.
- Morphological characteristics of the stages of myocardial infarction.
- Complications and causes of death in patients with myocardial infarction.
- Types of cardiosclerosis.
- Transient cerebral ischemia.
- Stroke: definition, etiology, classification, morphological characteristics
- Rheumatism

III. Object of study:

Tables

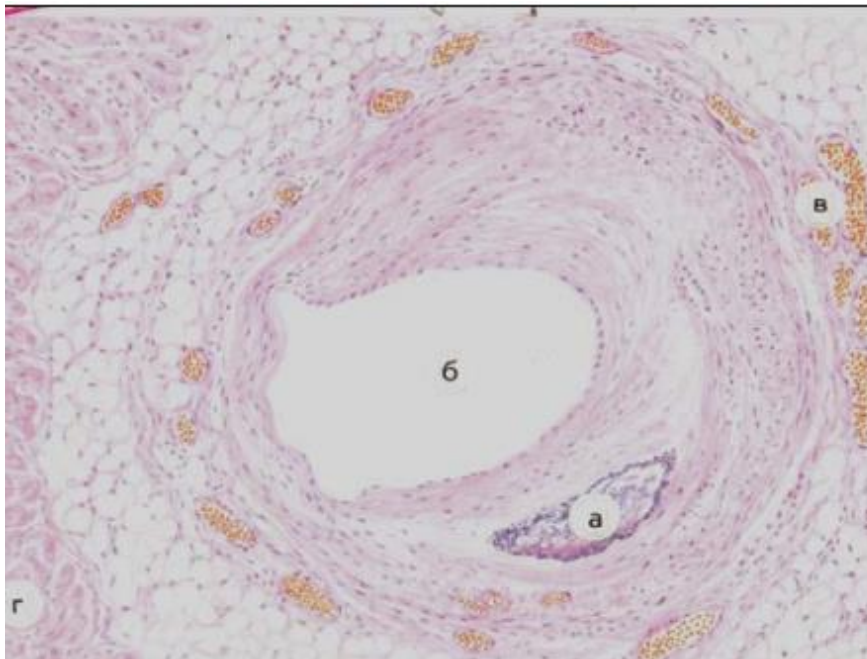
- Atherosclerosis of the abdominal aorta with ulceration and calcification of the intima.
- Arteriolosclerotic nephrocirrhosis (primary contracted kidney)
- Postinfarction cardiosclerosis.
- Hemorrhage in the brain. Staining with hematoxylin and eosin.
- Rheumatic acute warty endocarditis.
- Rheumatic granuloma (Aschoff-Talalaev).

Practical work

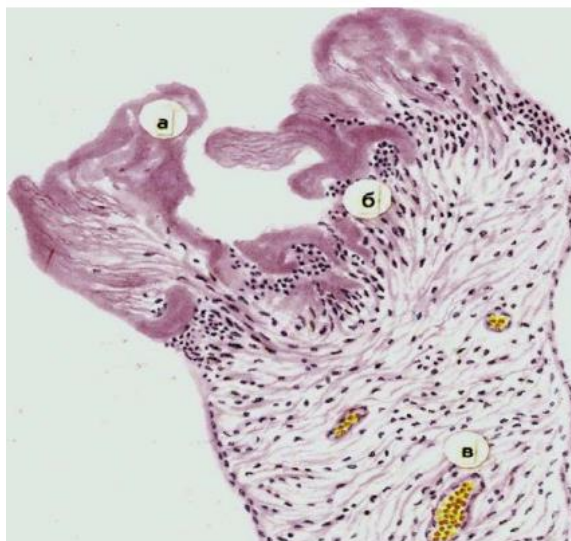


Microslide for sketching Hypertension, arteriolosclerotic nephrosclerosis.

a - hyalinized arterioles; b - collapsed glomeruli; c - atrophic tubules; d - the growth of the intermediate connective tissue. Hematoxylin and eosin staining



Microslide for sketching Atherosclerosis of the coronary artery of the heart, stage of atherocalcinosis. A fibrous plaque with calcification of the site of atheromatosis; b - narrowed lumen of the artery; c - expansion and plethora of the vessels of the para-arterial bed; g - myocardium. Hematoxylin and eosin staining



Microslide for sketching Rheumatic acute warty endocarditis A - thrombotic overlay on the surface of the valve (warts), devoid of epithelial cover, b – lymphohistiocytic infiltrates, in - blood vessels. Hematoxylin and eosin staining

Microslide description plan

1. Title
 2. Name the tissue (organ), color
 3. Describe the available changes
 4. Etiology of the pathological process
 5. Pathogenesis
 6. Exodus
- Clinical significance

Literature.

1. AI Strukov, VV Serov. Pathological anatomy: textbook / M.: GEOTAR-Media, 2014

- 2.M.A. Paltsev, N.M. Anichkov, M.G. Rybakova / Guide to practical exercises in pathological anatomy / Moscow: Medicine, 2002**
- 3. M.A. Fingers A.B. Ponomarev / Atlas on pathological anatomy M .: Medicine, 2005.**
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- 5. G.Z. Lekoev. A series of lectures on pathological anatomy. Vladikavkaz, 2010**
- 6. Textbook in 2 volumes by M.A. Fingers, N.M. Anichkov. Pathological anatomy M .: Medicine, 2005**
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Topic of the lesson: "LUNG DISEASES".

Knowledge of the topic is necessary for mastering other topics of general and particular courses of pathological anatomy, as well as for clinical anatomical analysis in the study of clinical disciplines and in the practical work of a doctor.

I. Objectives:

The student must know	<ul style="list-style-type: none">•classification of acute and chronic lung diseases;•etiology, pathogenesis and morphological manifestations of acute pneumonia;•outcomes and complications of acute pneumonia;•etiology, pathogenesis and morphological manifestations of bronchitis;•causes and morphology of destructive processes in the lungs;•chronic obstructive pulmonary disease;•major tumors of the bronchi and lungs;•pathological processes in the pleura.
The student must be able to	<ul style="list-style-type: none">•by macroscopic and microscopic signs to diagnose and•carry out differential diagnosis of major diseases and•respiratory diseases;•to assess the causes and mechanisms of development of respiratory diseases and•their significance for the whole organism.
The student must own	<ul style="list-style-type: none">•pathological knowledge for understanding morphogenesis, and microscopic diagnostics respiratory diseases.

II. Required level of knowledge:

a) from related disciplines

1. The histological structure of the respiratory system.
2. Pathophysiology of the respiratory system.

b) from the current lesson

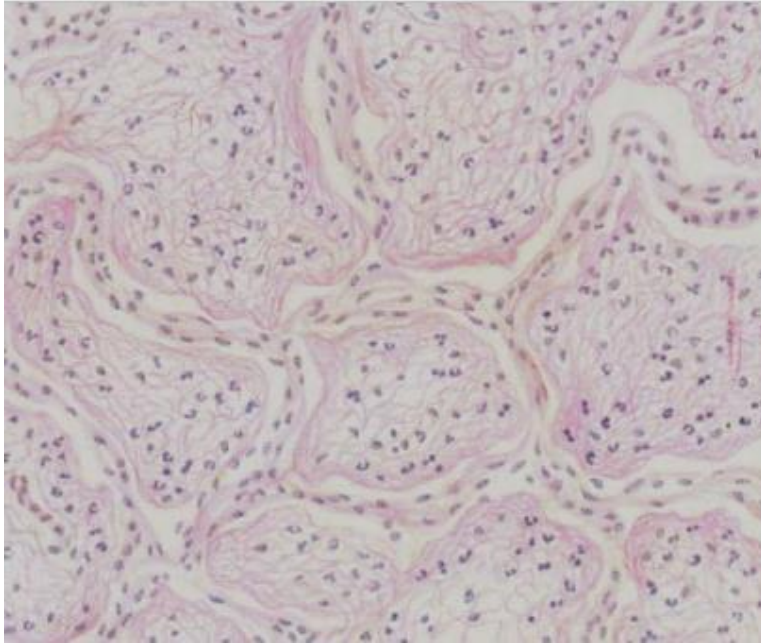
1. Morphological characteristics of acute pneumonia: croupous, focal.
2. Chronic nonspecific lung disease.
3. Pathological anatomy of chronic bronchitis.
4. Pathological anatomy of bronchiectasis.
5. Pathological anatomy of pulmonary emphysema.
6. Pathological anatomy of chronic pneumonia, obligate and optional signs.
7. Pathological anatomy of chronic lung abscess.
8. Morphological characteristics of lung cancer, its classification and complications.

III. Object of study:

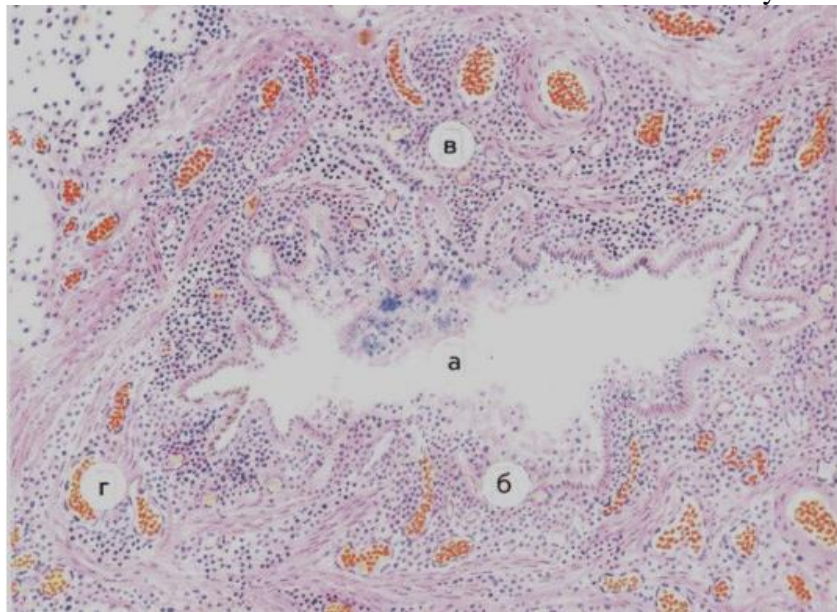
Macro preparations:

1. Croupous pneumonia.
2. Chronic lung abscess.
3. Chronic pulmonary emphysema.
4. Lung cancer.

Practical work



Microslide for sketching. Croupous pneumonia. Coloration hematoxylin and eosin
The lumen of the alveoli is filled with reticular masses of fibrin and leukocytes



Microslide for sketching Chronic purulent bronchitis with the formation of bronchiectasis.
Staining with hematoxylin and eosin. A - the lumen of the bronchus is expanded, B - necrosis and purulent fusion of the mucous membrane shell; B - diffuse infiltration of the bronchial wall with leukocytes; G - plethora and sclerosis of the peribronchial tissue.

Microslide description plan

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3. Describe the available changes
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6. Exodus
7. Clinical significance

Literature.

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Topic of the lesson: "DISEASES OF THE DIGESTIVE ORGANS".

Knowledge of the topic is necessary for mastering other topics of general and particular courses of pathological anatomy, as well as for clinical anatomical analysis in the study of clinical disciplines and in the practical work of a doctor.

I. Objectives:

The student must know	<ul style="list-style-type: none">•morphological features of diseases of the digestive system.•etiology, pathogenesis, classification of diseases of the digestive system at different stages development.•complications, causes of death.
The student must be able to	<ul style="list-style-type: none">•determine macro- and microscopic manifestations of diseases of the gastrointestinal tract,•explain the mechanism of development,•assess the likely outcome,•determine the significance of complications for the body.
The student must own	<ul style="list-style-type: none">•pathological knowledge for understanding morphogenesis, and microscopic diagnostics diseases of the digestive system.

II. Required level of knowledge:

a) from related disciplines

1. The histological structure of the tissues of the gastrointestinal tract.
2. Pathophysiology of the digestive system.

b) from the current lesson

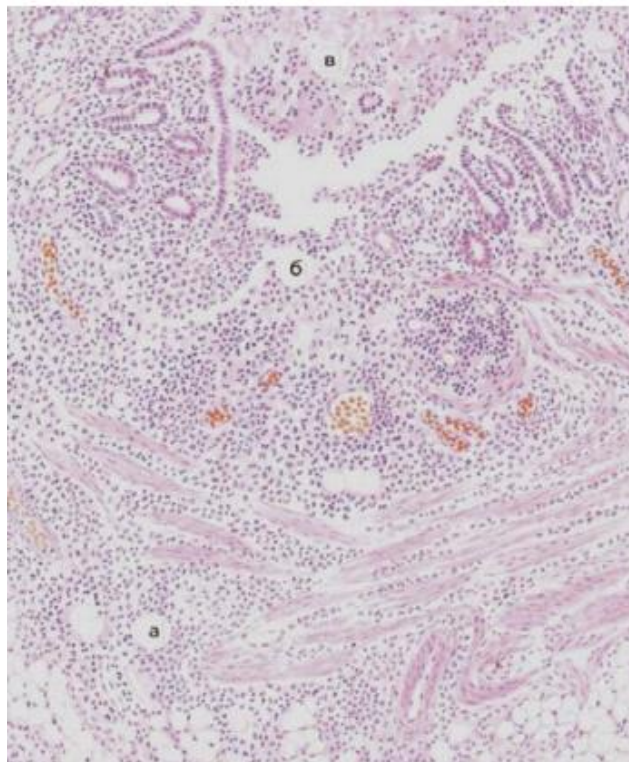
1. Acute gastritis: definition, causes, morphology, outcomes.
2. Chronic gastritis: types, causes, morphological manifestations, outcomes.
3. Chronic stomach and duodenal ulcer: morphological characteristics.
4. Complications of chronic stomach ulcers.
5. Stomach cancer: types, morphology, complications.
6. Acute appendicitis: types, morphological characteristics.
7. Chronic appendicitis: types, morphological characteristics.
8. Complications of appendicitis.

III. Object of study:

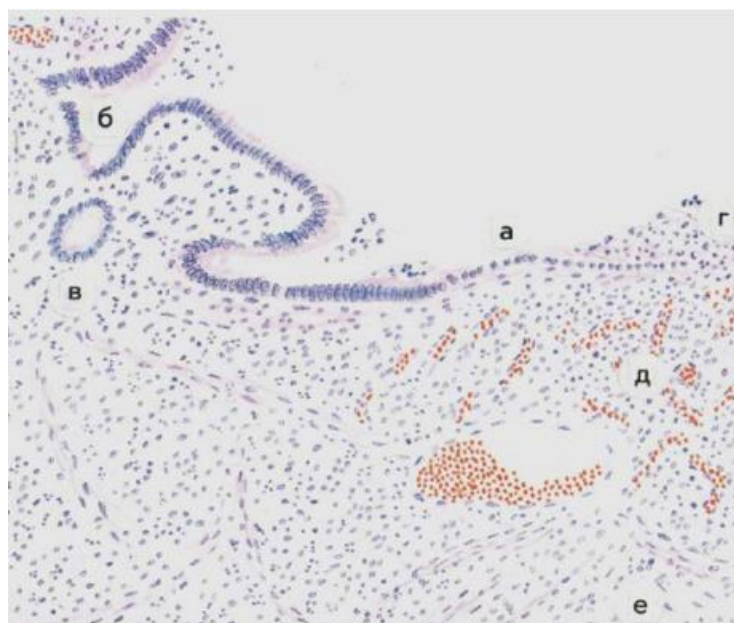
Tables

1. Postinfarction cardiosclerosis.
2. Hemorrhage in the brain. Staining with hematoxylin and eosin.

V. Practical work



Microslide for sketching 1 Phlegmonous-ulcerative appendicitis. All layers of the wall of the appendix are sharply edematous and infiltrated by polymorphonuclear leukocytes (a), destroyed mucous membrane is visible - an ulcer (b), c the lumen of the appendix pus (c). Staining with hematoxylin and eosin.



Microslide for sketching 2 Chronic stomach ulcer (healing). A - newly formed cubic cells crawl over the ulcer defect. B - epithelium of the gastric fossa. B - iron. D - fibrinous exudate with leukocytes. D. -granulation tissue. E - scar tissue. Staining with hematoxylin and eosin.

Microslide description plan

1. Title
2. Name the tissue (organ), color
3. Describe the available changes
4. Etiology of the pathological process
5. Pathogenesis

6. Exodus
7. Clinical significance

X. Literature.

1. AI Strukov, VV Serov. Pathological anatomy: textbook / M .: GEOTAR-Media, 2014
2. M.A. Paltsev, N.M. Anichkov, M.G. Rybakova / Guide to practical exercises in pathological anatomy / M .: Medicine, 2002
3. M.A. Fingers A.B. Ponomarev / Atlas on pathological anatomy M .: Medicine, 2005.
4. Workshop on general pathological anatomy K.M. Kozyrev, K. D. Salbiev, A.A. Epkhiev Vladikavkaz: Project press, 2006
5. G.Z. Lekoev. A series of lectures on pathological anatomy. Vladikavkaz, 2010
6. Textbook in 2 volumes by M.A. Fingers, N.M. Anichkov. Pathological anatomy M .: Medicine, 2005
7. Electronic library of a medical university www.Studmedlib.ru

Topic of the lesson: "Diseases of the liver."

Knowledge of the topic is necessary for mastering other topics of general and particular courses of pathological anatomy, as well as for clinical anatomical analysis in the study of clinical disciplines and the practical work of a doctor.

I. Objectives:

The student must know	<ul style="list-style-type: none">•causes, mechanisms of development and pathological anatomy of liver diseases;•morphology of liver failure syndrome;•complications and outcomes of liver diseases;•causes, mechanisms of development and morphology of liver diseases, their complications and outcomes.
The student must be able to	<ul style="list-style-type: none">•by macroscopic and microscopic morphological signs to diagnose and carry out differential diagnosis of liver diseases;•to evaluate the causes and mechanisms of development of liver diseases, their complications, as well as their significance for organism.
The student must own	<ul style="list-style-type: none">•Pathological knowledge for understanding morphogenesis, and microscopic diagnosis liver diseases.

II. Required level of knowledge:

a) from related disciplines

1. The histological structure of tissues
2. Pathophysiological aspects of the tuberculous process.

b) from the current lesson

1. Causes, mechanisms of development and morphological manifestations of hepatitis, their complications and outcomes.
2. Viral hepatitis (types A, B, C, D, E), etiology, pathogenesis, morphology, complications and outcomes.
3. Liver cirrhosis, etiology, pathogenesis, morphology, complications and outcomes.
4. Clinical and anatomical characteristics of liver cancer.

III. Object of study:

Tables:

1. Postnecrotic cirrhosis of the liver.
2. Toxic liver dystrophy (stage of yellow dystrophy).

Practical work:

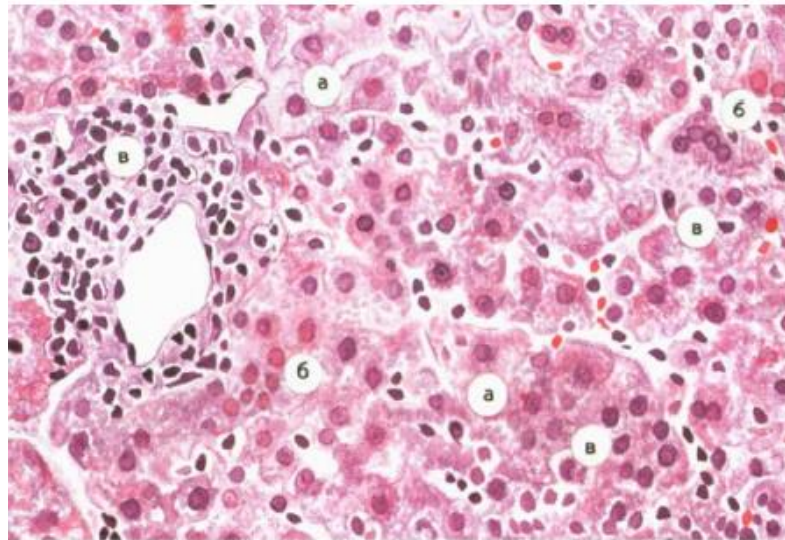


Рис. 304. Острый вирусный гепатит. Гидропическая дистрофия и некроз гепатоцитов (а), тельца Каунсилмена (б), гистиолимфоцитарная инфильтрация портального тракта и внутридольковой стромы (в). Окраска гематоксилином и эозином.

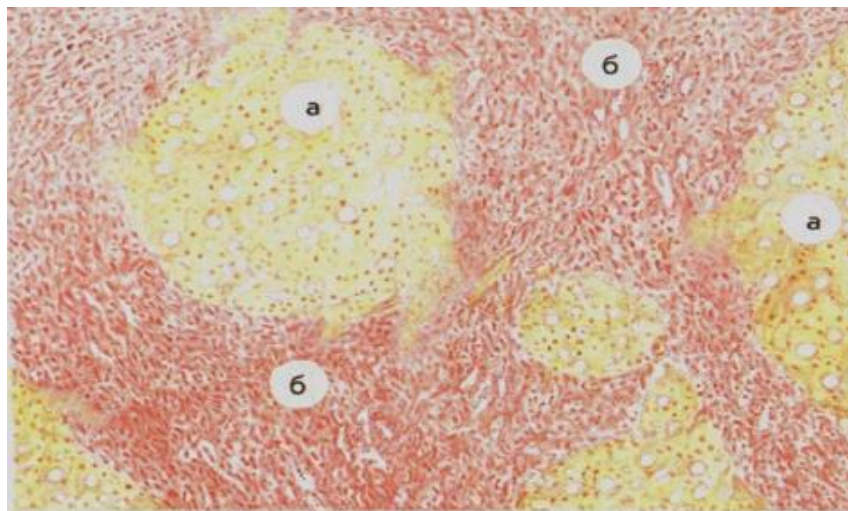


Рис. 310. Постнекротический цирроз печени.
а — узлы-регенераты (ложные дольки) различной величины; б — широкие поля соединительной ткани с несколькими триадами. Окраска пикрофуксином по Ван-Гизону.

Microslide description plan

1. Title
2. Name the tissue (organ), color
3. Describe the available changes
4. Etiology of the pathological process
5. Pathogenesis
6. Exodus
7. Clinical significance

Literature.

7. AI Strukov, VV Serov. Pathological anatomy: textbook / М.: GEOTAR-Media, 2014
8. M. Finger, NM Anichkov, MG Rybakova / Guide to practical exercises in pathological anatomy / М.: Medicine, 2002

9. M.A. Fingers A.B. Ponomarev / Atlas on pathological anatomy M.: Medicine, 2005.
10. Workshop on general pathological anatomy K.M. Kozyrev, K. D. Salbiev, A.A. Epkhiev Vladikavkaz: Project press, 2006
11. GZ Lekoev. A series of lectures on pathological anatomy. Vladikavkaz, 2010
12. Textbook in 2 volumes by M.A. Fingers, N.M. Anichkov. Pathological anatomy M.: Medicine, 2005
13. Electronic library of a medical university www.Studmedlib.ru

Topic of the lesson: "Kidney disease"

Knowledge of the topic is necessary for mastering other topics of general and particular courses of pathological anatomy, as well as for clinical anatomical analysis in the study of clinical disciplines and the practical work of a doctor.

I. Objectives:

The

student must know	<ul style="list-style-type: none">•causes, mechanisms of development and pathological anatomy of kidney disease;•morphology of renal failure syndrome;•complications and outcomes of kidney disease;•causes, mechanisms of development and morphology of kidney diseases, their complications and outcomes.
The student must be able to	<ul style="list-style-type: none">•by macroscopic and microscopic morphological signs to diagnose and carry out differential diagnosis of kidney disease;•to evaluate the causes and mechanisms of development of kidney diseases, their complications, as well as their significance for organism.
The student must own	<ul style="list-style-type: none">•Pathological knowledge for understanding morphogenesis, and microscopic diagnosis kidney disease.

II. Required level of knowledge:

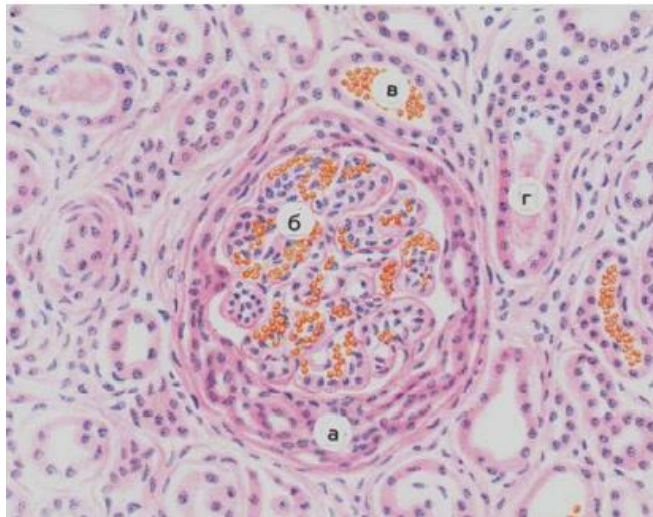
a) from related disciplines

1. The histological structure of tissues
2. Pathophysiological aspects of renal diseases.

b) from the current lesson

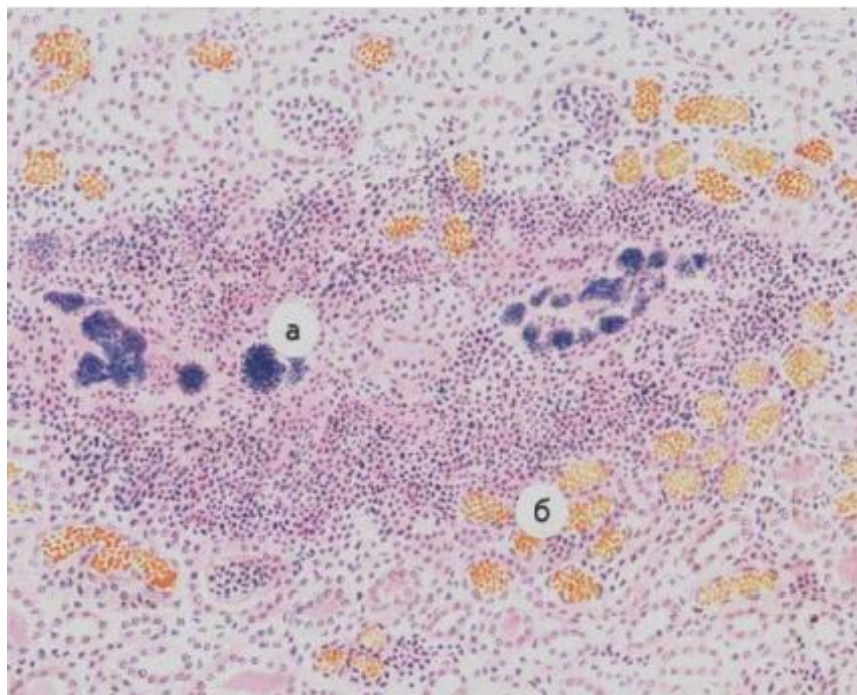
1. Causes, mechanisms of development and morphological manifestations of glomerular diseases, their complications and outcomes.
2. Pyelonephritis, etiology, pathogenesis, morphology, complications and outcomes.
3. Glomerulonephritis, etiology, pathogenesis, morphology, complications and outcomes.
4. Tubulopathies, etiology, pathogenesis, morphology, complications and outcomes.
5. Renal failure, etiology, pathogenesis, morphology, complications and outcomes.

Self-study assignments:



Microslide for Sketches Extracapillary productive glomerulonephritis (glomerulonephritis with crescents). Staining with hematoxylin and eosin.

Vcavities glomerular capsules half moon from proliferating podocytes and nephrothelium (a). Capillaries the glomerulus is full-blooded (b), in the lumen of individual tubules erythrocytes (c) and cylinders (d) are visible.



Microslide for sketching Embolic purulent nephritis.

Staining with hematoxylin and eosin.

In the focus of purulent tissue fusion, bacterial emboli (a). The vessels around the abscess are sharply dilated, full-blooded (b).

Microslide description plan

1. Title
2. Name the tissue (organ), color
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5. Pathogenesis
6. Exodus

7. Clinical significance

Literature.

14. AI Strukov, VV Serov. Pathological anatomy: textbook / M .: GEOTAR-Media, 2014
 15. M. Finger, NM Anichkov, MG Rybakova / Guide to practical exercises in pathological anatomy / M .: Medicine, 2002
 16. M.A. Fingers A.B. Ponomarev / Atlas on pathological anatomy M .: Medicine, 2005.
 17. Workshop on general pathological anatomy K.M. Kozyrev, K. D. Salbiev, A.A. Epkhiev Vladikavkaz: Project press, 2006
 18. GZ Lekoev. A series of lectures on pathological anatomy. Vladikavkaz, 2010
 19. Textbook in 2 volumes by M.A. Fingers, N.M. Anichkov. Pathological anatomy M .: Medicine, 2005
- Electronic library of a medical university www.Studmedlib.ru

Topic of the lesson: "DISEASES OF THE ENDOCRINE SYSTEM."

I. Objectives:

The student must know	<ul style="list-style-type: none">•the basics of the classification of diseases of the endocrine glands;•morphological manifestations and complications of diabetes mellitus;•clinical and anatomical manifestations of hyperthyroidism and hypothyroidism;•morphological manifestations of different types of thyroid struma;•morphological manifestations of thyroiditis (Hashimoto, de Quervain, Riedel);•causes, mechanisms of development and morphological manifestations of Addison's, Itsenko-Cushing's diseases;• clinical and anatomical features of tumors of the endocrine glands
The student must be able to	<ul style="list-style-type: none">•by macroscopic and microscopic manifestations, diagnose and carry out differential diagnostics of diseases and syndromes of endocrine glands;•to evaluate the causes and mechanisms of the development of diseases of endocrine organs and their importance for the body.
The student must own	<ul style="list-style-type: none">• pathological knowledge for understanding morphogenesis, and microscopic diagnostics diseases of the endocrine system.

II. Required level of knowledge:

a) from related disciplines

1. The histological structure of tissues
2. Pathophysiology of the endocrine system.

b) from the current lesson

1. Structural and functional organization of the endocrine system.
2. Diabetes mellitus (DM), definition, classification. Etiology and pathogenesis of insulin-dependent and non-insulin-dependent diabetes mellitus.
3. Morphological characteristics of diabetes.
4. Complications and causes of death in diabetes.
5. Clinical and morphological features of diabetes in children.
6. Goiter - definition of the concept, the state of the function of the gland.
7. Morphological classification and morphological characteristics of the most common forms of goiter.
8. Thyroiditis, the definition of the concept, classification, morphological characteristics.
9. Causes and manifestations of Cushing's syndrome and disease.
10. Causes and manifestations of Addison's disease.

III. Object of study:

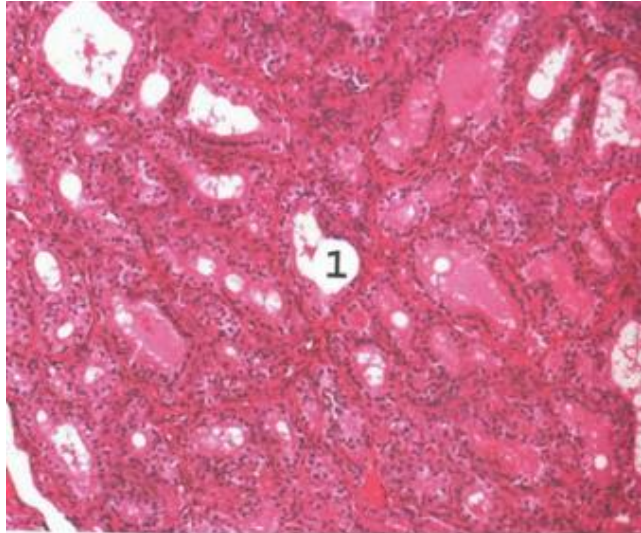
Macro preparations:

1. Nodular colloid goiter of the thyroid gland.
2. Adrenal adenoma.

Tables:

1. Pathological anatomy of diseases of the endocrine glands.
2. Based on goiter.
3. Atrophy of the pancreas in diabetes mellitus.
4. Hashimoto's thyroiditis.
5. Colloidal struma.

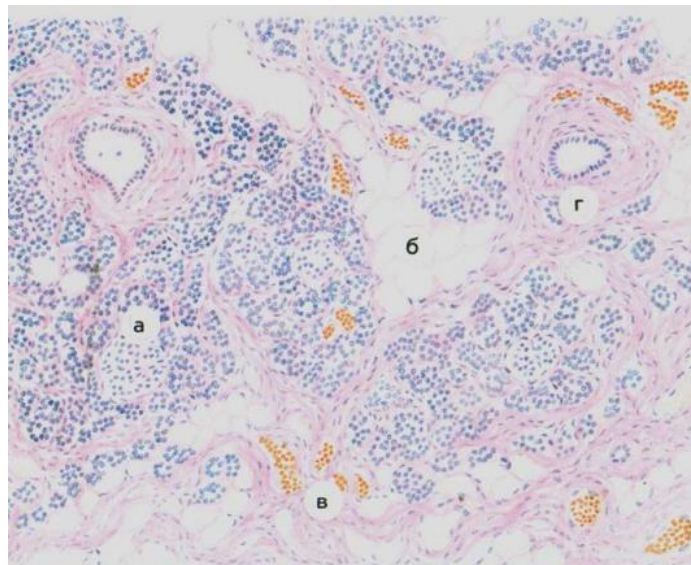
Self-study assignments:



1. Microslide for sketching. Diffuse toxic goiter.

Follicles of irregular shape, lined with high hyperplastic epithelium (1).

The colloid is bright pink, vacuolated, in the stroma, lymphoma-macrophage is visible in places infiltrate. Staining with hematoxylin and eosin.



Microslide for sketching: Diabetes mellitus, pancreatic atrophy.

Lobules of the gland with atrophic islets of Langerhans (a), surrounded by growths of adipose (b) and connective (c) tissue. Periductal sclerosis is sharply expressed (d). Staining with hematoxylin and eosin.

Microslide description plan

1. Title
2. Name the tissue (organ), color
3. Describe the available changes

4. Etiology of the pathological process
5. Pathogenesis
6. Exodus
7. Clinical significance

Literature.

1. AI Strukov, VV Serov. Pathological anatomy: textbook / M .: GEOTAR-Media, 2014
2. M.A. Paltsev, N.M. Anichkov, M.G. Rybakova / Guide to practical exercises in pathological anatomy / M .: Medicine, 2002
3. M.A. Fingers A.B. Ponomarev / Atlas on pathological anatomy M .: Medicine, 2005.
4. Workshop on general pathological anatomy K.M. Kozyrev, K. D. Salbiev, A.A. Epkhiev Vladikavkaz: Project press, 2006
5. G.Z. Lekoev. A series of lectures on pathological anatomy. Vladikavkaz, 2010
6. Textbook in 2 volumes by M.A. Fingers, N.M. Anichkov. Pathological anatomy M .: Medicine, 2005
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Topic: "Pre- and perinatal pathology. Pathology of pregnancy and the postpartum period. "

I. Objectives:

The student must know	<ul style="list-style-type: none">•Definition of prenatal pathology, etiology and pathogenesis of development•Concepts of the progenesis and cymatogenesis; Gametopathy, blastopathy, embryopathy•Classification of congenital malformations
The student must be able to	<ul style="list-style-type: none">•To assess the significance of prenatal pathology for the fetus, what is the cause of death in congenital malformations development, infectious and non-infectious pathologies of the fetus?
The student must own	<ul style="list-style-type: none">•Pathological knowledge for understanding morphogenesis, and microscopic diagnostics of congenital malformations, infectious and non-infectious pathologies of the fetus

II. Required level of knowledge:

a) from related disciplines

- 1 Development of the embryo
2. Concepts of embryogenesis

b) from the current lesson

18. Periods of development of the embryo.
 19. Reasons for the development of prenatal pathology and its significance for the body
 20. Congenital malformations
 21. Birth trauma
 22. Hemolytic disease of the newborn
 23. Hemorrhagic disease of newborns
 24. The most important pneumopathies
- Asphyxia of the fetus and newborn

III. Object of study:

Macro preparations:

1. Siamese twins
2. diabetic fetopathy
6. phakomelia

Microslides:

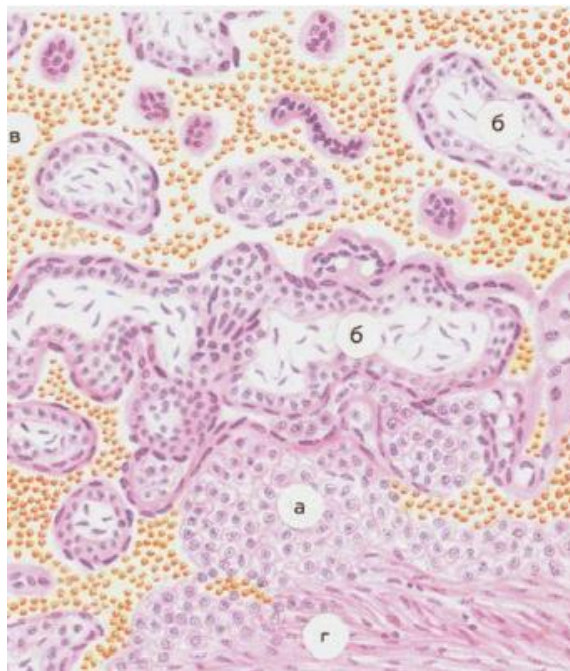
1. diabetic fetopathy
7. miliary gums of the liver in congenital syphilis
8. Hyaline membranes of the lungs
9. Atelectasis of the lungs

IV. Topics control questions:

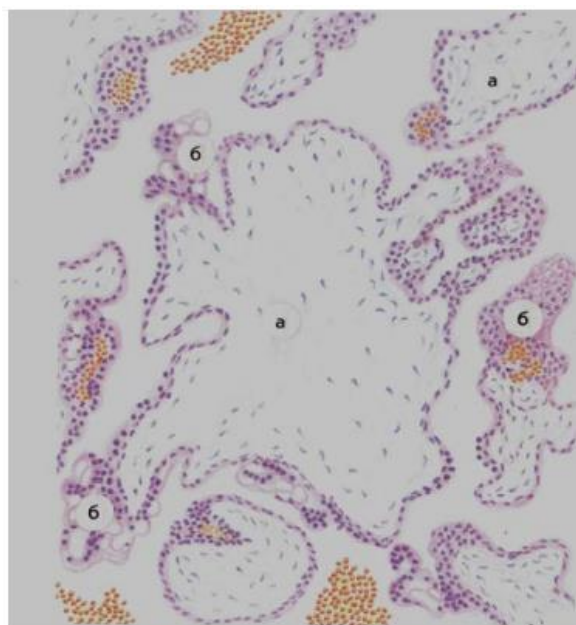
1. Periodization of cymatogenesis
2. The main patterns of the pathology of the prenatal period
3. Gametopathies, brief morphological characteristics
4. The main malformations of the cardiovascular, nervous, digestive, urinary, sexual systems.
5. Infectious fetopathy: congenital syphilis
6. Infectious fetopathy: congenital toxoplasmosis

7. Infectious fetopathy: congenital listeriosis
8. Infectious fetopathy: congenital cytomegalovirus infection
9. Non-infectious fetopathies
10. Definition of perinatal pathology,
11. The concept of prematurity, immaturity, postmaturity
12. Hemolytic disease of the newborn
13. Hemorrhagic disease of the newborn
14. Asphyxia of the fetus and newborn
15. Major pneumopathies (respiratory distress syndrome of the newborn)
16. Birth trauma

Practical work



Microslide for sketching 1. Tubal pregnancy: a - decidua cells, b - chorionic villi, c - blood, D - tube wall



Microslide for sketching 2: Bubble drift: hydropic transformation of the villous stroma, b- epithelial proliferation and syncytial cells

Microslide description plan

1. Title
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Literature.

1. AI Strukov, VV Serov. Pathological anatomy: textbook / M .: GEOTAR-Media, 2014
 2. MA Fingers, NM Anichkov, MG Rybakova / Guide to practical exercises in pathological anatomy / M .: Medicine, 2002
 3. M.A. Fingers A.B. Ponomarev / Atlas on pathological anatomy M .: Medicine, 2005.
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Lesson topic: **“GENERAL CHARACTERISTIC OF THE INFECTIOUS PROCESS.
BACTERIAL AIR DROP
INFECTIONS ”.**

Knowledge of the topic is necessary for mastering other topics of general and particular courses of pathological anatomy, as well as for clinical anatomical analysis in the study of clinical disciplines and the practical work of a doctor.

I. Objectives:

The student must know	<ul style="list-style-type: none"> •etiology, pathogenesis, pathological anatomy and complications of diphtheria; • etiology, pathogenesis, pathological anatomy and complications of scarlet fever; • etiology, pathogenesis, pathological anatomy and complications of whooping cough. •Etiology, pathogenesis, pathological anatomy of viral diseases, rickettsioses 	
The student must be able to	<ul style="list-style-type: none"> •by macroscopic and microscopic signs to diagnose and differentiate infections; •to evaluate the causes and mechanisms of development of bacterial airborne infections, and •determine their role in the body. •distinguish viral infections based on morphological characteristics 	
The student must own	<ul style="list-style-type: none"> • pathological knowledge for understanding morphogenesis, and microscopic 	diagn
	<ul style="list-style-type: none"> • Pathological knowledge for understanding morphogenesis, and microscopic 	diagn

II. Required level of knowledge:

a) from related disciplines

1. The histological structure of the respiratory system.
2. Pathophysiology of the respiratory system

b) from the current lesson

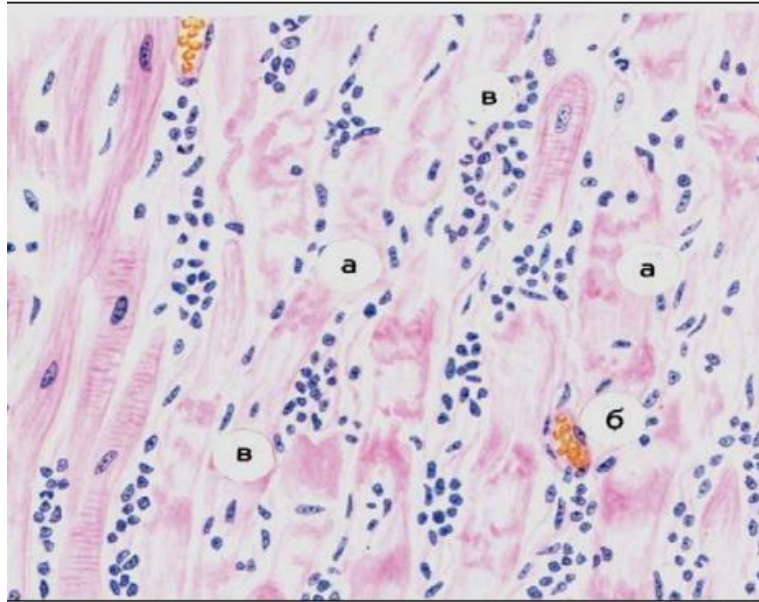
1. General characteristics of bacterial airborne infections.
2. Diphtheria, etiology, pathogenesis.
3. Pathological anatomy of diphtheria, stages, complications and outcomes.
4. Salmonellosis, etiology, pathogenesis, clinical and anatomical variants, complications and outcomes.
5. Scarlet fever. etiology, pathogenesis, morphological manifestations, complications and outcomes.
6. Etiology, pathogenesis, morphological features.
7. Distinguishing signs of viral infections and rickettsioses from bacterial infections.
8. Etiology, pathogenesis, morphological characteristics of influenza, complications, outcomes.
9. Etiology, pathogenesis, morphological characteristics of measles, complications, outcomes.
10. Etiology, pathogenesis, morphological characteristics of poliomyelitis, complications, outcomes.
11. Etiology, pathogenesis, morphological characteristics of typhus, complications, outcomes.

III. Object of study:

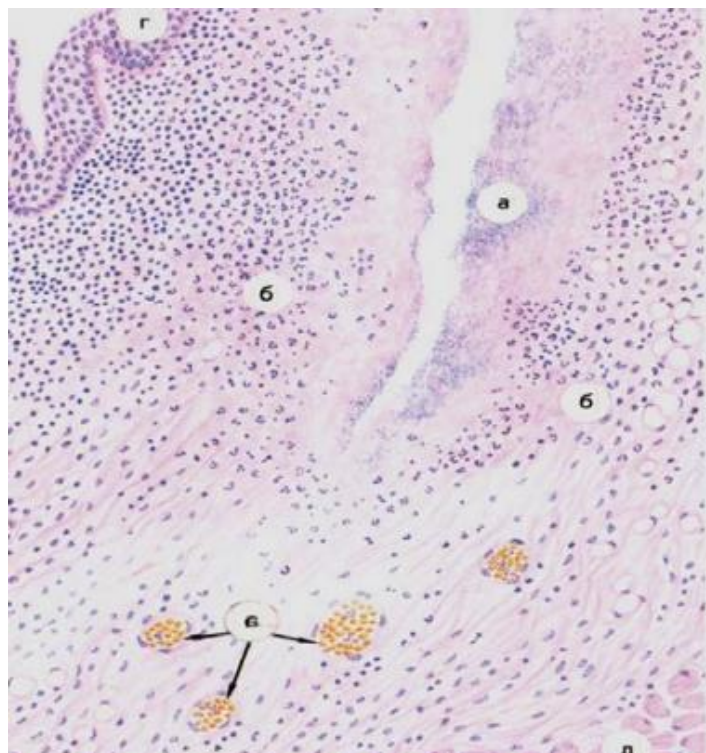
Microslides:

1. Scarlet fever necrotizing tonsillitis.
2. Influenza hemorrhagic pneumonia
3. Diphtheria, parenchymal myocarditis

Practical work



Microslide for sketching. Diphtheria, parenchymal myocarditis. Hearths necrosis of cardiomyocytes (a), vascular congestion (b) and interstitial infiltration lymphoid cells, individual neutrophilic leukocytes (c). Coloration hematoxylin and eosin



Microslide for sketching. Scarlet fever is necrotizing tonsillitis. In the amygdala an extensive focus of necrosis (a), covering the underlying tissues, is surrounded by

infiltrate from polymorphonuclear leukocytes (b). Vessels sharply full-blooded (c). On the border with the focus of necrosis, preserved mucous membranes are visible shell (d) and muscle tissue (e). Hematoxylin and eosin staining

Microslide description plan

1. Title
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6. Exodius
7. Clinical significance

X. Literature.

1. AI Strukov, VV Serov. Pathological anatomy: textbook / M .: GEOTAR-Media, 2014
2. M.A. Paltsev, N.M. Anichkov, M.G. Rybakova / Guide to practical exercises in pathological anatomy / M .: Medicine, 2002
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TOPIC: "VIRAL INFECTIONS. RICKETTSIOSIS".

Knowledge of the topic is necessary for mastering other topics of general and particular courses of pathological anatomy, as well as for clinical anatomical analysis in the study of clinical disciplines and the practical work of a doctor.

I. Objectives:

The student must know	• Etiology, pathogenesis, pathological anatomy of viral diseases, rickettsioses
The student must be able to	• Be able to distinguish viral infections based on morphological characteristics
The student must own	• Pathological knowledge for understanding morphogenesis, and microscopic diagnosis viral diseases.

II. Required level of knowledge:

a) from related disciplines

1. The histological structure of tissues
2. Pathophysiological aspects of the tuberculous process.

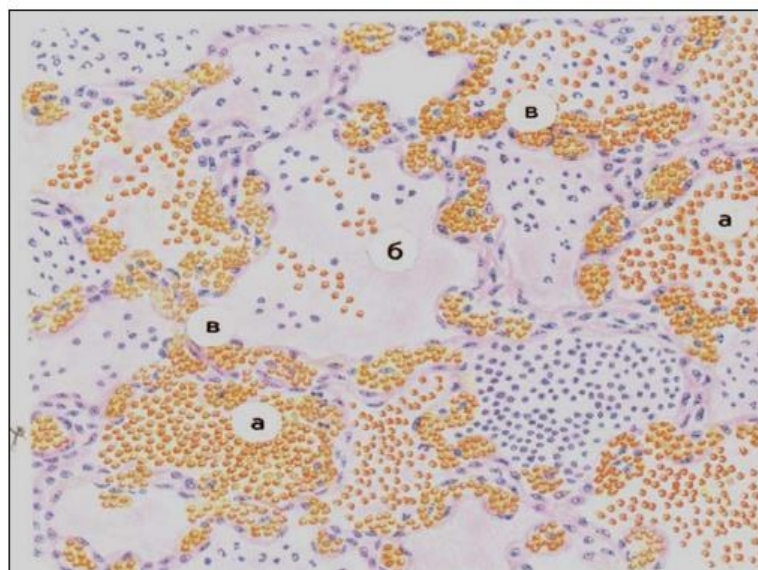
b) from the current lesson

1. Distinguishing signs of viral infections and rickettsioses from bacterial infections.
2. Etiology, pathogenesis, morphological characteristics of influenza, complications, outcomes.
3. Etiology, pathogenesis, morphological characteristics of measles, complications, outcomes.
4. Etiology, pathogenesis, morphological characteristics of poliomyelitis, complications, outcomes.
5. Etiology, pathogenesis, morphological characteristics of typhus, complications, outcomes.

III. Object of study:

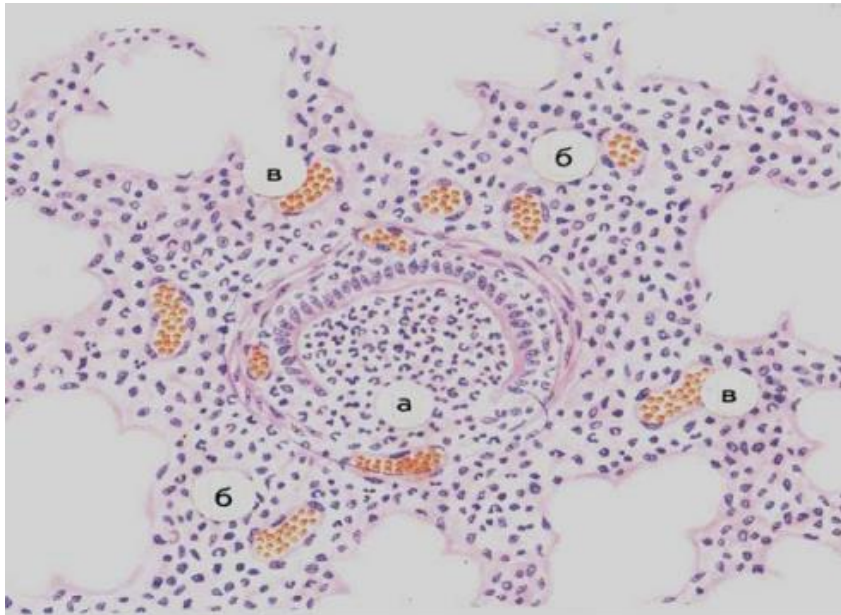
Tables:

3. Postnecrotic cirrhosis of the liver.
4. Toxic liver dystrophy (stage of yellow dystrophy).



Microslide for sketches 1: Influenza pneumonia. In most alveoli accumulations of erythrocytes (a) and protein masses (b); sharp plethora of dilated

vessels of interalveolar septa (c). Hematoxylin and eosin staining



The microslide for sketching 2: Measles peribronchial pneumonia. A - destroyed wall of the bronchus - destructive panbronchitis; b - inflammatory infiltration of lung tissue along the periphery of the bronchus; c - full-blooded vessels. Coloration hematoxylin and eosin

Microslide description plan

1. Title
2. Name the tissue (organ), color
3. Describe the available changes
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6. Exodus
7. Clinical significance

X. Literature.

1. AI Strukov, VV Serov. Pathological anatomy: textbook / M .: GEOTAR-Media, 2014
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Lesson topic:

"INTESTINAL INFECTION. QUARANTINE INFECTIONS ".

Knowledge of the topic is necessary for mastering other topics of general and particular courses of pathological anatomy, as well as for clinical anatomical analysis in the study of clinical disciplines and the practical work of a doctor.

I. Objectives:

The student must know	<ul style="list-style-type: none">•etiology, pathogenesis, pathological anatomy and complications of typhoid fever;• etiology, pathogenesis, pathological anatomy and complications of salmonellosis;• etiology, pathogenesis, pathological anatomy and complications of cholera;• etiology, pathogenesis, pathological anatomy and complications of colibacillary infection;• etiology, pathogenesis, pathological anatomy and complications of salmonellosis.
The student must be able to	<ul style="list-style-type: none">•by macroscopic and microscopic signs to diagnose•and differentiate intestinal infections;•to evaluate the causes and mechanisms of development of intestinal infections, and•determine their role in the body.
The student must own	<ul style="list-style-type: none">• pathological knowledge for understanding morphogenesis, and microscopic diagnostic intestinal infections.

II. Required level of knowledge:

a) from related disciplines

1. The histological structure of the respiratory system.
2. Pathophysiology of the respiratory system

b) from the current lesson

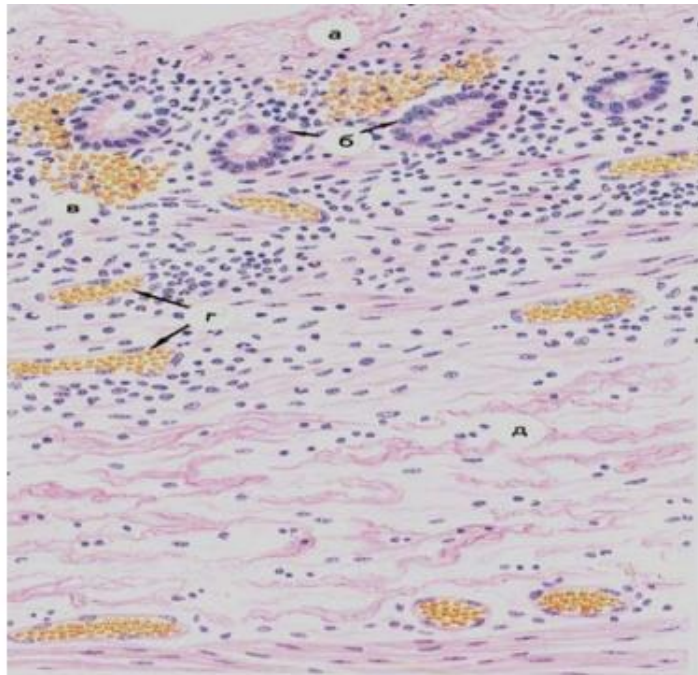
1. General characteristics of intestinal infections.
2. Typhoid fever, etiology, pathogenesis.
3. Pathological anatomy of typhoid fever, stages, complications and outcomes.
4. Salmonellosis, etiology, pathogenesis, clinical and anatomical variants, complications and outcomes.
5. Dysentery, etiology, pathogenesis, morphological manifestations, complications and outcomes.
6. Morphological features of dysentery in young children and old people.
7. Cholera, etiology, pathogenesis, morphological manifestations, complications outcomes. Cholera El Tor.

III. Object of study:

Microslides:

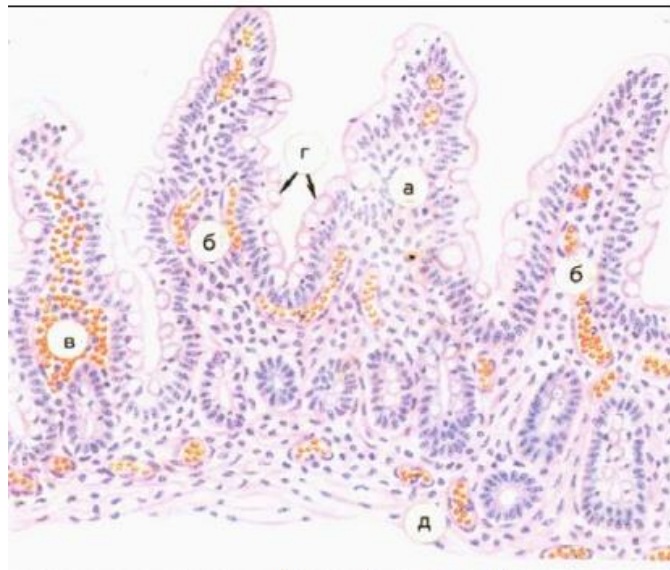
1. Diphtheria, parenchymal myocarditis
2. Scarlet fever necrotizing tonsillitis.

Practical work



Microslide for sketching. Dysentery, fibrinous colitis.

A-necrosis of the mucous membrane, necrotic masses permeated with threads fibrin, polymorphonuclear leukocytes; b - preserved glands; v- hemorrhages in the submucosal layer; d - full-blooded vessels; e - edema fabrics. Hematoxylin-eosin staining



Microslide for sketching. Cholera enteritis. The villi of the mucosa membranes are edematous, infiltrated with lymphoid cells and polymorphic nuclear leukocytes (a). The expressed plethora of blood vessels of villi (b), in the thickness hemorrhages are visible (c). Enterocytes are vacuolated (d). Plethora vessels of the submucous layer (e). Staining with hematoxylin and eosin

Microslide description plan

1. Title
2. Name the tissue (organ), color
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5. Pathogenesis

6. Exodus
7. Clinical significance

Literature.

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2. M.A. Paltsev, N.M. Anichkov, M.G. Rybakova / Guide to practical exercises in pathological anatomy / M .: Medicine, 2002
3. M.A. Fingers A.B. Ponomarev / Atlas on pathological anatomy M .: Medicine, 2005.
4. Workshop on general pathological anatomy K.M. Kozyrev, K. D. Salbiev, A.A. Epkhiev Vladikavkaz: Project press, 2006
5. G.Z. Lekoev. A series of lectures on pathological anatomy. Vladikavkaz, 2010
6. Textbook in 2 volumes by M.A. Fingers, N.M. Anichkov. Pathological anatomy M .: Medicine, 2005
7. Electronic library of a medical university www.Studmedlib.ru

Topic of the lesson: “ **TUBERCULOSIS. SYPHILIS. SEPSIS** ”.

Knowledge of the topic is necessary for mastering other topics of general and particular courses of pathological anatomy, as well as for clinical anatomical analysis in the study of clinical disciplines and the practical work of a doctor.

I. Objectives:

The student must know	<ul style="list-style-type: none"> •features of tuberculosis as a chronic infection; •etiology and pathogenesis of tuberculosis; •clinical and anatomical classification of forms of tuberculosis; •pathological anatomy of primary tuberculosis with and without progression; •chronic course of primary tuberculosis; •pathological anatomy of hematogenous tuberculosis; •pathological anatomy of secondary tuberculosis; •pathomorphological features and complications of tuberculosis; •features of primary and secondary syphilis; •congenital syphilis concept; •morphological features of acquired syphilis. •etiology, pathogenesis and pathological anatomy of sepsis; •the concept of chroniosepsis.
The student must be able to	<ul style="list-style-type: none"> • by macroscopic and microscopic signs to diagnose and differentiate different forms of tuberculosis; •to assess the diversity of the course of clinical and anatomical variants of tuberculosis and their role for the body; •macroscopic and microscopic characteristics of hard chancre
The student must own	<ul style="list-style-type: none"> •Pathological knowledge for understanding morphogenesis, and microscopic diagnosis tuberculous process, syphilitic process and sepsis.

II. Required level of knowledge:

a) from related disciplines

1. The histological structure of tissues
2. Pathophysiological aspects of the tuberculous process.
4. the concept of sepsis.

b) from the current lesson

1. Definition of the concept of "tuberculosis".
2. Etiology and pathogenesis of tuberculosis.
3. Clinical and anatomical classification of tuberculosis.
4. Pathological anatomy of forms of primary tuberculosis.
5. Pathological anatomy of forms of hematogenous tuberculosis.
6. Pathological anatomy of forms of secondary tuberculosis.
7. Pathomorphosis, complications and causes of death in tuberculosis.

8. Definition and concept of "syphilis". Primary, secondary syphilis.
9. Etiology, pathogenesis, pathological anatomy of sepsis.

III. Object of study:

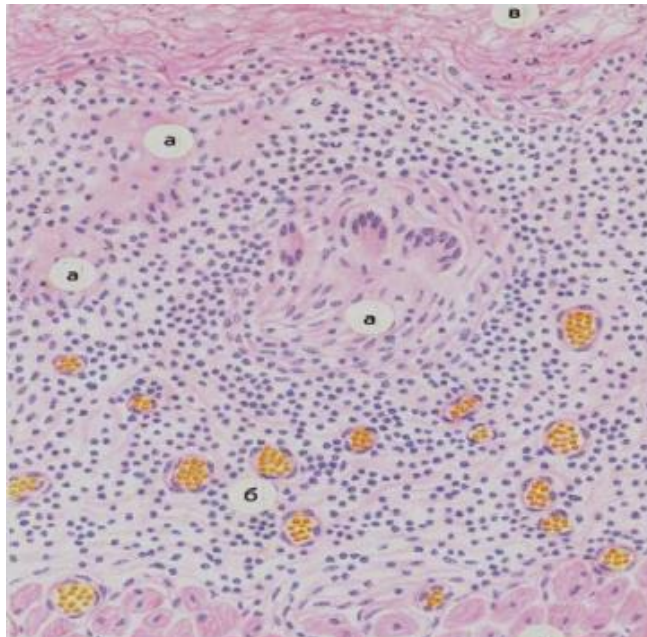
Macro preparations:

1. Primary tuberculosis complex with progression.
2. Miliary pulmonary tuberculosis.
3. Focal pulmonary tuberculosis.
4. Fibrous-cavernous pulmonary tuberculosis.
5. Tuberculous leptomeningitis.

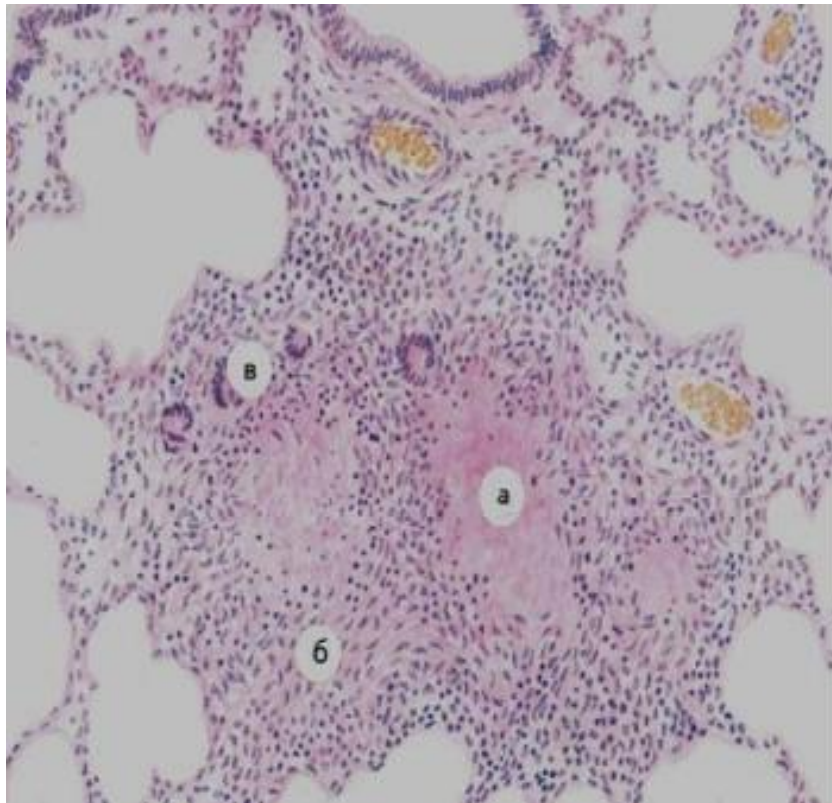
Tables:

1. Primary tuberculosis complex.
2. Miliary pulmonary tuberculosis.
3. Tissue reactions in tuberculosis.
4. Wall of the tuberculous cavity.
5. Caseous pneumonia.
6. Tuberculosis of the lymph node.
7. Tuberculosis of the kidney.

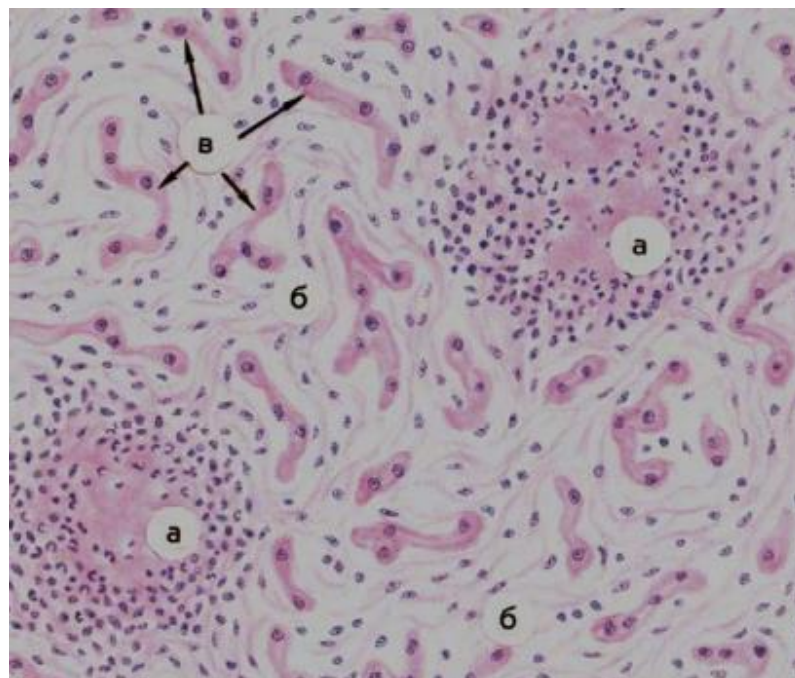
Practical work



Microslide for sketching Tuberculous pericarditis. Coloration hematoxylin and eosin. A-tuberculous granulomas, B-plethoric vessels, B-fibrinous overlays, G-myocardium.



Microslide for sketching Tuberculous granulomas in the lung. Env. Hematoxylin and eosin. Caseous necrosis of the central part of the granulomas (a), at the border with the foci necrosis epithelioid cells (b) and giant cells of Pirogov-Langhans (c). On the periphery of the granulomas, there are accumulations of lymphoid cells.



Microslide for sketching Congenital syphilis "flint liver". A-foci of necrosis, surrounded by disintegrating polymorphic nuclear leukocytes - "miliary gum", B - connective tissue; B - preserved hepatic tracts. Hematoxylin staining and eosin.

Microslide description plan

1. Title
2. Name the tissue (organ), color
3. Describe the available changes
4. Etiology of the pathological process
5. Pathogenesis
6. Exodus
7. Clinical significance

X. Literature.

7. AI Strukov, VV Serov. Pathological anatomy: textbook / M.: GEOTAR-Media, 2014
8. M. Finger, NM Anichkov, MG Rybakova / Guide to practical exercises in pathological anatomy / M.: Medicine, 2002
9. M.A. Fingers A.B. Ponomarev / Atlas on pathological anatomy M.: Medicine, 2005.
10. Workshop on general pathological anatomy K.M. Kozyrev, K. D. Salbiev, A.A. Epkhiev Vladikavkaz: Project press, 2006
11. GZ Lekoev. A series of lectures on pathological anatomy. Vladikavkaz, 2010
12. Textbook in 2 volumes by M.A. Fingers, N.M. Anichkov. Pathological anatomy M.: Medicine, 2005
13. Electronic library of a medical university www.Studmedlib.ru

Topic of the lesson: “ The structure and logic of constructing a pathological diagnosis. The doctrine of diagnosis. Biopsy method research. Thanatology.”

Knowledge of the topic is necessary for mastering other topics of general and particular courses of pathological anatomy, as well as for clinical anatomical analysis in the study of clinical disciplines and the practical work of a doctor.

I. Objectives:

The student must know	<ul style="list-style-type: none">• The structure of the pathological anatomical diagnosis• Categories of discrepancy in diagnoses.• Methods and techniques of pathological autopsy• Subjective and objective reasons for misdiagnosis• Concept of iatrogeny
The student must be able to	<ul style="list-style-type: none">• Be able to define the headings of the pathological diagnosis;• Be able to compare the pathological and final clinical diagnoses
The student must own	Skills in the formulation of a pathological diagnosis and its rubrics

VI Control questions on the topic under study

- 1.The structure and logic of constructing a pathological diagnosis
- 2.Headings of pathological diagnosis
- 3.Categories of the discrepancy between clinical and pathological anatomical diagnoses
- 4.Subjective reasons for misdiagnosis
- 5.Objective reasons for misdiagnosis
- 6.Iatrogeny concept

VII Learning objectives:

Task 1. Clinical data: A 38-year-old patient was repeatedly treated in a narcological dispensary for chronic alcoholism, however, to no avail. Recently, he has been using 0.5-1 liters of vodka and alcohol surrogates practically daily. Was admitted with complaints of cough with yellow sputum, shortness of breath, fever up to 38 ° C. Heart rate contractions 120-130 per minute. Lungs auscultation: fine bubbling rales, crepitus in all parts. Radiologic: uneven areas of enlightenment and darkening in all parts of the lungs. In the analysis of blood-leukocytes up to 10 thousand, leukocyte formula within normal limits. Despite the ongoing detoxification and antibiotic therapy, the condition of the patient progressively worsened, and he died with symptoms of increasing respiratory failure.

Autopsy: There is a large amount of cloudy yellow viscous sputum in the lumen of the bronchi. On the surface of the lung incisions in all their sections there are numerous compacted grayish, protruding above the incision surface areas with a diameter 0.5-1 cm, merging. When pressed, a cloudy yellowish liquid flows down from the surface of their incision. In many places, mainly in the lower lobes of the lungs, areas of tissue decay are visible with the formation of cavities 0.4-0.7 cm without pronounced walls, filled with pus-like contents. Bronchopulmonary lymph nodes are juicy, swollen. Heart weighing 340 g. The myocardium on the cut is flabby, dull, like boiled meat. On the intima of the abdominal aorta there are single yellowish plaques. The mucous membrane of the stomach with smoothed folds. Liver weighing 2200 g, compacted, with a pronounced yellow tint and noticeable fine grain on the side of the capsule and on the cut. Kidneys with easily removable capsules, dull, swollen on the cut. Build a pathological diagnosis. Determine the immediate cause of death. Fill out a medical certificate death story.

Task 2

Clinical data: The patient 56 years old, was admitted with a traumatic fracture of the right hip neck. After 8 days was operated on - performed osteosynthesis. Early postoperative period without complications. On the 5th day after the operation, the condition has deteriorated sharply. There were pains behind the breastbone, shortness of breath. ECG signs of focal changes in the myocardium, myocardial infarction over the next day, the condition progressively worsened, despite the ongoing cardiotropic and coronary therapy. On the 15th day after admission (on the 8th after the operation), the patient died with symptoms of increasing pulmonary edema. Clinical diagnosis: Acute myocardial infarction. Fracture of the cervix of the right hip. Atherosclerosis of the aorta and coronary arteries hearts.

Autopsy: In the area of the fracture, osteosynthesis was performed with a Metal plate. Defects in surgery not found. In the right femoral vein and the distal part of the right external iliac vein, brown crumbling blood clots are attached to the intima. A fragment of the same structure, 5x1.2 cm in size, is freely located in the right pulmonary artery, occupying its entire length and almost the entire lumen. Edema in the lungs. In the myocardium of the left and right ventricular foci of uneven blood supply, (microscopically: areas of damage to cardiomyocytes). On intima of aorta and coronary arteries of the heart a small number of dense fibrous plaques do not significantly narrow the lumen vessels. In the lumen of the gallbladder, 3 dense dark yellow calculi were found. Signs in the brain tissue swelling. On the cut of the liver there is a "nutmeg" pattern. Build a pathological diagnosis. Determine the immediate cause of death. Conduct a comparison (co-delivery) of clinical and pathoanatomical diagnoses. If there is a discrepancy in the diagnosis, then indicate the reason for discrepancies and category.

STANDARDS OF ANSWERS.

Objective 1.

Pathological diagnosis.

The main disease is bilateral total focal confluent pneumonia with abscess formation.

The background disease is chronic alcoholism (according to clinical data). Forming small-nodular cirrhosis of the liver.

Chronic atrophic gastritis

Complications - pronounced dystrophic changes in the myocardium and kidneys.

Concomitant disease - atherosclerosis of the aorta (single fibrous plaques).

2.The immediate cause of death is respiratory failure (optionally, pulmonary heart failure).

3.Medical certificate of death.

I. a) pulmonary (respiratory) failure;

b) bilateral total focal-confluent pneumonia.

II. Chronic alcoholism.

NOTE. It must be remembered that alcoholism is a psychiatric disease and can be exhibited in Diagnosis and in medical testimony O of death only in the presence of the conclusion of a narcologist or psychiatrist. A narcologist or a psychiatrist makes a similar diagnosis as in outpatient, So and stationary conditions (according to annex to the order of the Ministry of Health of the USSR dated 12.09.1988, No. 704 "On the timing of dispensary observation of patients with alcoholism, drug addiction and substance abuse "). It should be noted that patients may refuse to consult a doctor suggested by a general practitioner narcologist. According to the legislation on the provision of psychiatric care, persons who do not pose a social danger cannot be examined forcibly. In such cases, in the absence of the conclusion of a narcologist or psychiatrist and verification by clinicians of neurosomatic alcoholic disorders, it is recommended to establish a diagnosis of harmful use of alcohol (F 10.1), that is chronic alcohol intoxication.

The diagnosis of "alcoholism" (F 10.2) cannot be first exposed or rejected by a pathologist for the autopsy results, but is exclusively intravital and psychiatric.

Basis for diagnosis "Alcoholism" is:

- a record of a psychiatrist or narcologist in the medical history or medical record of an outpatient about the diagnosis

"alcoholism";

- an entry in the above medical records about alcoholic delirium or other alcoholic psychoses;

- an entry in the above medical documentation that the patient was treated or is registered about alcoholism.

Along with this, if the pathologist during the autopsy revealed characteristic alcoholic lesions of organs and tissues,

then even in the absence of appropriate entries in the medical record and/or medical history, a diagnosis can be made "Chronic alcohol intoxication", that is, "harmful use of alcohol" without mention of addiction - F 10.1 (Zayratyants O.V. et al., 2003). Thus, in this task, it will be competent to formulate a diagnosis by the type: main disease - chronic alcoholism; complications - pneumonia ...

Task 2

I. Pathological diagnosis.

II. The main disease is a fracture of the neck of the right femur .

Operations of osteosynthesis of the right femur from Complications: thrombosis of the right external iliac and femoral veins.

Thromboembolism of the right pulmonary artery. Pulmonary edema. Foci of uneven blood supply and pronounced focal

dystrophic changes in the myocardium. Venous congestion of the liver. Edema of the brain.

Accompanying illnesses:

atherosclerosis with a predominant lesion of the aorta and coronary arteries of the heart.

Gallbladder stones.

2.The immediate cause of death is pulmonary embolism.

3.Results of comparison of diagnoses.

Unrecognized fatal complication (thrombosis, PE).

Incorrect wording of the clinical diagnosis (in any case of "fracture" - the underlying disease).

The reason for the medical error is insufficient examination of the patient.

Category 3 - the diagnosis could have been made in the given medical institution; misdiagnosis was the cause of the fatal exodus.

VIII. Control tests:

Select all correct answers

1. *Independent ("independent") institutions of the pathological and anatomical service:*

- a. Pathological departments (including centralized ones) of medical institutions.
- b. Pathological departments (departments, laboratories) of diagnostic centers.
- c. Pathological departments (departments, laboratories, groups in departments) of research institutes.
- d. Republican, regional, city, municipal pathoanatomical bureaus.
- e. Regional institutes of pathology.

Select all correct answers

2. *The main tasks of the pathological service at the present stage:*

- a. Diagnosis of diseases and pathological processes based on morphological studies of biopsy, operating materials, sequential.
- b. Diagnostics of diseases and pathological processes based on the materials of pathological autopsies of the deceased with

establishing the causes and mechanisms of death.

v. Examination of the quality of diagnosis and treatment based on clinical and morphological comparisons.

d. Providing information to health authorities on the structure of morbidity and causes of death population on the materials of pathological studies.

e. Provision of materials for pathological research for the training of doctors and nurses workers.

e. Postgraduate training (specialization) and improvement of pathologists and laboratory assistants-histologists.

Select all correct answers

3. *One rate of a pathologist is allocated to perform the following volumes of work during the year:*

a. Autopsy of 200 corpses of adults.

b. Autopsy of 100 corpses of adults.

v. Autopsy of 160 corpses of fetuses, stillborns, newborns, children.

d. Autopsy of 80 corpses of fetuses, stillborns, newborns, children.

e. Study of 4000 objects (pieces of tissue, organs) of biopsy, surgical materials, sequential.

e. Study of 2000 objects (pieces of tissue, organs) of biopsy, surgical materials, after childbirth.

Select all correct answers

4. *Functional duties of a pathologist:*

a. Pathological autopsies of corpses of adults and children with the registration of the established documentation.

b. Conducting a primary forensic medical examination of corpses with the registration of an examination certificate.

v. Registration of "Medical certificates of death / perinatal death".

d. Morphological examination of biopsy specimens, surgical material, succession according to existing standards and with taking into account modern guidelines.

e. Analysis of the quality of clinical diagnosis and treatment based on clinical and pathological comparisons.

e. Using the principles of medical ethics and deontology in work.

LEADING CAUSES OF DEATH

a. Diseases of the nervous system.

b. Diseases of the circulatory system.

c. Respiratory diseases.

d. Diseases of the digestive system.

e. Diseases of the skin and subcutaneous fat.

f. Diseases of the female genitourinary system.

Answer: 1 -..., 2 -....

Select all correct answers

6. *The concept of "diagnosis in medicine" contains a conclusion about:*

a.

The state of health of the subject.

b.

The patient's disease (injury) or the cause of death.

v.

The fault of the doctor who made a defect in the provision of medical care, leading to death.

d. The epidemic focus of an infectious disease.

Select all correct answers

7. *The main types of diagnosis:*

- a. Clinical.
- b. Pathological anatomical.
- v. Immunological.
- d. Epidemiological.
- e. Forensic medicine.

Establish compliance

TYPE OF DIAGNOSIS

FUNCTIONS

- a. Determination of the causes and mechanisms of death.
- b. Teaching clinical thinking.
- c. Statistical accounting of morbidity and mortality.
- d. Scientific analysis of the pathomorphosis of diseases.
- Medical rehabilitation.

e. Medical forecasting.

Answer: 1 —..., 2 —....

Select all correct answers

9. *Principles for the formulation and registration of the pathological diagnosis:*

- a. Nosological in accordance with ICD-10.
- b. Individuality.
- v. Timeliness and dynamism.
- d. Pathogenetic.
- e. Structurality with unified headings.
- e. Factual and logical reasonableness.

Set correspondence:

10. DOCTOR'S RULES

THINKING

- 1. Consistency.
- 2. Evidence.
- 3. Certainty.

Choose all the right ones

11. *International classification and nomenclature*

more

stumps

pathological

states are allocated to nosological units

(forms) based on the totality of the following signs:

- a. Established etiology and pathogenesis.
- b. Typical clinical and morphological picture.
- v. Socio-economic importance.
- d. The severity of the process.
- e. Participation in thanatogenesis.

Establish compliance

5. METHOD OF RESEARCH

1. Pathological autopsies.
2. Analysis of biopsies and operating rooms materials.

Clinical.

Pathological anatomical.

LAWS OF LOGIC

- a. Identities.
- b. Contradictions.
- v. The excluded third.
- d. Sufficient reason

Answer: 1 —..., 2 —..., 3 —....

CONTENT OF THE MAIN DISEASE

- a. The nosological unit for which the treatment was carried out.
- b. The disease with the most pronounced manifestations.
- v. The nosological form most threatening to health and life.
- d. A nosological form that itself caused death.
- e. A nosological form that led to death through its complications.

Answer: 1 —..., 2 —..., 3 —....

thirteen.

GENESIS OF DISEASE STRUCTURE

"MAIN DISEASE"

- a. One underlying medical condition.
- b. Concomitant diseases.
- v. Competing diseases.
- d. The main and background disease.
- e. Association of Diseases.
- e. Family of diseases.

Answer: 1 —..., 2 —..., 3 —....

Select all correct answers

14. *Complication of the underlying disease is a pathological process:*

- a. Pathogenetically associated with the underlying disease, but not included in the typical clinical and morphological characteristics of this disease.
- b. Aggravating the course of the underlying disease, pathogenetically and etiologically associated with it.
- v. Aggravating the course of the underlying disease, pathogenetically closely associated with it, but of a different etiology.
- d. Leading to death, being in a close causal relationship with the underlying disease and not assessed in ICD-10 as the original cause of death.
- e. Heightened the course of the underlying disease, which has a different etiology and pathogenesis.

Select all correct answers

15. *Characteristics of the concept of "competing disease":*

- a. A variant of polyopathy.
- b. A variant of the combined underlying disease.
- v. Each of these diseases could lead to death.
- d. The patient developed 3 serious illnesses at the same time.
- e. Multi-causal genesis.

Select all correct answers

16. *As the "immediate cause of death" can be set in the diagnosis:*

- a. Heart failure
- b. Death mechanism.
- v. Injury.
- Disease.
- e. The main complication of the underlying disease (injury).
- e. Ventricular fibrillation.

Choose one correct answer

17. A 65-year-old patient died of fibro-cavernous pulmonary tuberculosis, for 10 years suffered from non-insulin-dependent sugar diabetes with manifestations of subcompensated diabetic neuropathy and retinopathy. Determine the underlying disease in final clinical and pathological anatomical diagnoses:

- a. Monocausal.
- b. Bicausal.
- v. Multi-causal.

Choose one correct answer

18. The cause of death of a 35-year-old drug addict who suffered from HIV infection at the AIDS stage was miliary tuberculosis with the development of leptomeningitis. In the final clinical and pathological anatomical diagnoses, tuberculosis is regarded as:

- a. The underlying disease.
- b. Concomitant disease.
- v. Competing disease.
- d. Concomitant disease.
- e. Complication of HIV infection.
- e. Manifestation of HIV infection.

Supplement

19. The second (new) disease in a patient caused by actions of medical workers, both adequate and and erroneous in the provision of medical care is called

Establish compliance

20. TYPE OF OPENING SITUATION

Establish compliance

12. TYPE OF DIAGNOSIS

- 1. Clinical.
- 2. Final clinical.
- 3. Pathological anatomical.

Establish compliance

THE GENESIS OF SICKNESS AND DEATH

- 1. Monocausal.
- 2. Bicausal.
- 3. Multi-causal.

- 1. Pathologist - a. Death of pregnant women, women in labor, women in childbirth, including the last mental
- 2. Forensic copper day of the postpartum period, Qing.
- b. Death from violent causes or suspicion of it.
- v. The identity of the deceased has not been established.

- d. Death from non-medical induced abortion institutions.
- e. Death during or after surgery.
- e. Death from cancer in the absence of histological verification tumors.

Answers: 1 —..., 2 —....

Select all correct answers

21. *Possible place of iatrogenism in the final clinical and pathological anatomical diagnoses:*

- a. The underlying disease.
- b. Concomitant disease.
- v. Complication of the underlying disease.
- d. Competing disease.
- e. Concomitant disease.
- e. Disease as part of polyopathy.

ANSWER STANDARDS

- 1.d, d
- 2.a, b, c, d, e
- 3 .. a, c, d
- 4.a, c, d, e, f
- 5. 1-b; 2nd
- 6.a, b, d
- 7.a, b, d, e
- 8. 1-a, b, c, d, e, f; 2-b, c, d
- 9.a, b, d, e, f
- 10. 1-b, c; 2-d; 3-a
- 11.a, b, c
- 12. 1-a, b, c; 2-d, d; 3d, d
- 13. 1-a; 2-b, c, d; 3-d, e
- 14.a, b, c, d
- 15.b, c
- 16.a, c, d, e, f
- 17.b
- 18.f
- 19. Iatrogeny
- 20. 1-a, d, e; 2-b, c, d

X. Literature.

- 14. AI Strukov, VV Serov. Pathological anatomy: textbook / M .: GEOTAR-Media, 2014
- 15. M. Finger, NM Anichkov, MG Rybakova / Guide to practical exercises in pathological anatomy / M .: Medicine, 2002
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