Case studies in Pathomorphology. Self assessment textbook.

KROK – 1 (STEP – 1)

Part - I
Рекомендовано Центральним методичним кабінетом з вищої медичної освіти МОЗ України як навчальний посібник для студентів вищих медичних навчальних закладів ІІІ-IV рівня акредитації (протокол № 2 від 19.03.2010)

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**Pathology of cell. Parenchymal dystrophy.**

1. During an autopsy a parenchymal fatty dystrophy of the myocardium was diagnosed. What is the common or descriptive name of the heart due to this dystrophy?
   A. *‘Tabby cat’ heart (‘Tiger’s’ heart)
   B. Bovine heart
   C. ‘Hairy’ heart
   D. Solder plaque (bony heart)
   E. Cor pulmonale

2. A patient with leukemia died from severe chronic anemia. An autopsy revealed an enlarged heart, with flabby myocardium. It had a dim pale-grey color, yellow spots and bars. Which pathological process was found in the heart at post-mortem?
   A. * Parenchymal fatty dystrophy
   B. Vacuolar dystrophy.
   C. Hydropic dystrophy.
   D. Mesenchymal fatty dystrophy.
   E. Mixed dystrophy.

3. A 53 year old patient died with symptoms of liver insufficiency. A post-mortem examination revealed the enlarged, flabby, yellow-brown liver. Gross examination of the liver’s section showed drops of fat. Microscopically: hepatocytes on the peripheries of the hepatic lobules contained masses of small drops within the cytoplasm. Which process most likely took place in the liver?
   A. *Fatty dystrophy of the liver
   B. Glucosylceramide lipidosis (Gaucher’s disease)
   C. Sphingolipidosis (Niemann-Pick disease)
   D. Gangliosidosis (Tay-Sachs disease)
   E. Systemic lipoidoses

4. A patient died from chronic cardiovascular insufficiency. At the post-mortem a ‘tabby cat’ heart was found. From the side of the endocardium, a yellow-white striped pattern was noticeable. The myocardium was a dim with gray-yellow color. Which process is most likely diagnosed?
   A. *Fatty parenchymal dystrophy.
   B. Carbohydrate dystrophy
   C. Hydropic dystrophy.
   D. Fatty mesenchymal dystrophy.
   E. Amyloidosis.

5. A seven-year-old child presented with diphtheria of the pharynx. He subsequently died from acute cardiac insufficiency. Post-mortem examination of the heart revealed that the cavities of the heart were extended horizontally. Muscle of the heart were dim and flabby. Gross section showed motley appearance, with yellow areas. Microscopically in the cytoplasm of some myocardial cells small vacuoles were determined. The frozen sections showed vacuoles within cells stained with sudan-III in orange color. Which type of dystrophy was found in myocardial cells?
   A. *Fatty dystrophy
B. Carbohydrate dystrophy
C. Vacuolar dystrophy
D. Hyaline dystrophy
E. Hydropic dystrophy

6. A man died due to cardiac insufficiency. At autopsy revealed the heart increased volume and flabby. A myocardium was a clay-yellow color and dim. From the side of the endocardium a yellow-white striped pattern was visible (‘tabby cat’). Under the microscope the groups of myocardial cells lost their normal structure, their cytoplasm contained shallow drops which were black when stained with sudan-IV. Which one of the following is the correct diagnosis?
   A. *Fatty dystrophy of myocardium
   B. Cardiosclerosis
   C. Rheumatic myocarditis
   D. Obesity of the heart
   E. Myomalacia

7. A 66-year-old male died from cardiac insufficiency. During the dissection an increase volume heart was found. Observation of the heart revealed a flabby consistency with stretched chambers. The myocardium section had a dim, clay-yellowish color. From the side of the endocardium a yellow-white striped pattern was present, which was especially noted in the papillary muscles. Which pathological process is the most credible?
   A. *Fatty dystrophy of the myocardium
   B. Obesity of the heart
   C. Dilatation cardiomyopathy
   D. Myomalacia
   E. Cardiosclerosis

8. A patient died from pulmonary-cardiac insufficiency. During the dissection a significantly enlarged anemic liver, with yellow doughy consistencies was found. A liver specimen stained with hematoxylin and eosin exposed various sizes of vacuoles in the cytoplasm of the hepatocytes. Which one of the following dystrophies occurred?
   A. *Parenchymal fatty
   B. Parenchymal carbohydrate
   C. Hyaline
   D. Mesenchymal fatty
   E. Hydropic

9. A 38-year-old patient, suffering from chronic alcoholism and cirrhosis of the liver, developed profuse bleeding due to varicose veins of the esophagus which resulted in death. During the autopsy a liver was noted to be diminished in size with micronodular tuberosity. The organ was dense and rather yellow in color. A histological evaluation of the cryostat specimens of the liver, stained with hematoxylin and eosin, revealed hepatocytes with large, optically empty vacuoles. These vacuoles were black when stained with osmium acid. These optically empty va-
cuoles hepatocytes indicate:
A. *Fatty dystrophy
B. Inclusions of hyaline.
C. Alcoholic hyaline (Mallory bodies)
D. Vacuolar dystrophy.
E. Carbohydrates dystrophy.

10. A 16-year-old girl presents with the symptoms of sharp pain during swallowing, lymph node enlargement of the neck, and the body temperature of 38°C. The mucous membrane of the tonsils revealed grayish membranes with yellow tapes with were not easily separated from the defect. The patient’s state progressively worsened which death occurring on the 8th day of the disease due to cardiac insufficiency. Which of following histological changes in the myocardial cells will be the most likely finding?
A. *Fatty dystrophy
B. Hydropic dystrophy
C. Hyaline dystrophy
D. Ballooning dystrophy
E. Mucous dystrophy

11. A 44-year-old woman died from chronic alcoholic intoxication. During the autopsy a significantly enlarged liver of doughy consistency and rather yellowish color was found. Microscopically, after staining with hematoxylin and eosin, cytoplasm of the hepatocytes contained optically empty vacuoles. Which type of dystrophy has taken place?
A. *Parenchymal fatty dystrophy
B. Carbohydrate parenchymal dystrophy
C. Hyaline dystrophy
D. Mesenchymal fatty dystrophy
E. Hydropic dystrophy

12. A patient has died from toxic sepsis. During dissection a ‘tabby cat’ (‘tiger’s heart’) was found. Microscopically, lipids were detected in the cytoplasm of the myocardial cells. What is the primary morphological mechanism for development for this dystrophy?
A. *Decomposition
B. Infiltration
C. Transformation
D. Pathological synthesis.
E. Neoplastic alterations.

13. Ultrastructural investigation of a liver biopsy, revealed that between the mitochondria there were numerous flat cisterns and bubbles with secretory granules circumscribed with membrane. Name a cell structure with the hyperplasic constituents?
A. * Golgi apparatus
B. Pinocytosis bubbles
C. Endoplasmic reticulum
D. Lysosomes
E. Microtubes

14. A 42-year-old female became ill with diphtheria and died from acute cardiac insufficiency. During dissection it was noted that the heart cavities were extended and that the muscle of the heart was dim, motley and on a cut surface had yellow areas. Which process was exposed in the myocardial cells?
A. *Fatty dystrophy
B. Carbohydrate dystrophy
C. Ballooning dystrophy
D. Hyaline dystrophy
E. Hydropic dystrophy

15. During the examination of a newborn, some apparent skin differences are noted. The skin is dry, with an uneven surface and with the presence of grey plates which can be removed layer by layer. These changes are related to which type of dystrophy?
A. *Horny dystrophy
B. Hydropic dystrophy
C. Hyaline dystrophy
D. Fibrinoid swelling
E. Mucoid swelling

16. A male patient had a prosthetic appliance on the lower jaw. The ventral surface of tongue revealed a dense, gray plaque with a clear boundary. Histology revealed the thickened of the stratified squamous epithelium due granular and to basal layers thickening, hyperkeratosis, acanthosis, lymphocyte’s infiltration of connective tissue. Make a diagnosis.
A. *Leukoplakia
B. Erythroplakia
C. Papilloma
D. Cancer in situ (intra-epithelial neoplasia)
E. Condyloma

17. During the preventive examination of a worker employed in the coal resins production the areas of thickening and keratinization of the mucous membrane in the oral cavity were found. This occurred mainly on the cheeks areas, showing a whitish color with a rough surface. They were not painful. Which pathology is this related to?
A. *Leukoplakia
B. Papillomatosis
C. Glossitis
D. Stomatitis
E. Calcification

18. A 45-year old male is found to have a severe intoxication. A diagnosis of sepsis is made. Several days later he dies. At autopsy, his myocardium grossly had a ‘tiger
heart’ pattern. Microscopically, lipids were detected in the cytoplasm of cardiac hystiocytes. What morphogenetic mechanism prevails in the development of this dystrophy?
A. *Decomposition..
B. Infiltration.
C. Transformation
D. Abnormal synthesis.
E. Colliquation.

19. A 3-month- old infant dies and autopsy is requested. Electron microscopic examination of liver tissue revealed a great amount of flat cisterns and vesicles with secretory granules, surrounded by membrane, scattered among numerous mitochondria. Which of the following cell ultra structures has been shown to be hyperplastic?
A. *Golgi complex.
B. Pinocytic vesicles.
C. Endoplasmic reticulum.
D. Lysosomes.
E. Filaments.

20. A 36-year-old female develops liver failure followed with lethal outcome. Autopsy has shown an enlarged liver of yellow-brown color and soft consistence. Drops of fat are noticed on the liver cut surface and on the scalpel. Microscopically: hepatocytes at peripheral zone of a liver lobules contain small drops that fill cytoplasm and push the nucleus to the periphery. What process in the liver do the following changes testify to?
A. *Fatty degeneration of liver.
B. Cerebrosidelipidosis (Gaucher's disease).
C. Sphingomyelinlipidosis (Niemann — Pick disease).
D. Gangliosidelipidosis (Tay —Sachs disease).
E. Generalized gangliosidosis (Norman—Landing disease).

21. Autopsy of a menopausal woman with a long history of a chronic ischemic heart disease revealed soft and enlarged heart. Its chambers were extended; the myocardium sectional view was lack-luster with grey- yellowish coloring. An endocardium presented with yellow-white banding, most evident in papillary muscles. What is the most likely pathological process in woman’s heart?
A. *Fatty degeneration of myocardium.
B. Fatty heart.
C. Dilated cardiomyopathy.
D. Myomalation.
E. Cardiosclerosis.

22. A 77-year-old male with a dental prosthesis on his upper jaw is seen by his dentist because of a solid gray patch on his tongue. A lesion has irregular contour, uneven surface, and clear borders. Microscopic investigation of its biopsy revealed the thickening of stratified squamous epithelium, its hyperkeratosis, and acanthosis
accompanied with lymphocytes and macrophages infiltration of subjacent connective tissue. What is the most likely diagnosis?
A. *Leukoplakia.  
B. Erythroplakia.  
C. Papilloma.  
D. Cancer in situ.  
E. Condyloma.

23. An autopsy of a patient, who died of progressive anemia due to leukemia, revealed enlarged and flabby heart. The cut surface the myocardium was dim, pale-gray with subendocardial yellow spots and streaks. Which of the following pathologic processes had developed in the heart?
A. *Parenchymal fatty dystrophy.  
B. Vacuolar dystrophy.  
C. Hyaline-drop dystrophy.  
D. Mesenchymal fatty dystrophy.  
E. Workload hypertrophy

**Connective tissue’s (mesenchymal) dystrophy**

1. A 56 year old female has been ill with chronic fibrocavernous tuberculosis of the lungs for the past 20 years. She entered the nephrology department with an uremia syndrome. A test for the presence of amyloid in kidneys was positive. Which form of amyloid is indicated in this case?
A. *Secondary  
B. Primary  
C. Localized  
D. Familial congenital  
E. Senile

2. The dissection of a 49 year old male reveals a deformed mitral valve, which is thickened and does not completely close. Microscopically the foci of the collagen fibers are eosinophilic and give a positive reaction on a fibrin test? The most credible explanation is:
A. *Fibrinoid swelling  
B. Fibrinoid inflammation  
C. Mucoid swelling  
D. Hyalinosis  
E. Amyloidosis

3. A 56 year old patient with a six year history of peritonitis has died. During dissection the capsule of the liver and the spleen was markedly thickened in places and was noted as being dense and semi-lucent. The most credible explanation for this is:
A. *Hyalinosis  
B. Necrosis  
C. Mucoid swelling
D. Fibrinoid swelling
E. Amyloidosis

4. The dissection of a 48 year old patient who suffered with rheumatoid arthritis reveals an enlarged, dense spleen. A spleen’s section demonstrates its brown-reddish color with enlarged follicles which have the appearance of semi-lucent, grayish-white corns. What is the name of these lesions in the spleen?
A. * Sago-like spleen.
B. Glazed spleen.
C. Sebaceous spleen.
D. Hyalinosis of spleen.
E. Porphyry spleen.

5. During the post-mortem performed on a 72 year old man there are noted some diminished areas of the spleen with a pinkish color. Microscopic examination revealed that the follicles are diminished in volume and the walls of the arterioles and trabeculas are thickened as well as containing homogeneous eosinophilic, PAS-positive masses. Staining with picrofuksin dye reveals the masses to be a red color. These changes indicate the presence of:
A. *Hyalinosis
B. Amyloidosis
C. Mucoid swelling
D. Fibrinoid swelling
E. Sclerosis

6. A 52 year old male died from a heart attack. At the time of dissection a symmetric type of severe obesity discovered. The rupture of the right ventriculum wall resulted in hemopericardium. Under epicardium an excessive fat tissue formation discovered. A microscopy of the sample showed the exccutive growth of fatty tissue accompanied with atrophy of myocardial fibers. Which pathological process is most likely responsible for the patient’s death?
A. * Simple obesity of the heart.
B. Fatty dystrophy of myocardium.
C. Ischemic heart disease.
D. Hypertension
E. Acute myocardium infarct

7. During dissection of a 65 year old patient, who suffered from a fibrous-cavernous tuberculosis, an enlarged, dense spleen was found. Spleen section grossly had brown-pinkish color, smooth, waxy-like surface. Which pathological process listed below is the most credible?
A. * Sebaceous spleen.
B. Glazed spleen.
C. Porphyry spleen.
D. Sago spleen.
E. Cyanotic induration

8. A post mortem performed on a 50 year old male who died of a heart attack indi-
cated a symmetric type of obesity of the III degree with rupture of the walls of the right ventricle and hemopericardium. Under the epicardium surplus deposits of fat were found. Microscopically, fatty tissue from the epicardium was dispersed in the myocardium with an atrophy of the muscle fibers. Which process listed below is the most reliable?
A. *Obesity the heart.
B. Fatty dystrophy of myocardium.
C. Acute infarct of myocardium.
D. Ischemic heart disease.
E. Hypertension.
9. An autopsy of a 45-year-old female revealed the kidneys were dense, yellow in color and appear to have a greasy brilliance. Which pathological process is most likely?
A. *Amyloidosis
B. Hyalinosis
C. Fatty dystrophy
D. Mucoid swelling
E. Hemochromatosis
10. Macroscopic examination of a stomach delivered from surgery, revealed a round lesion 1.5cm in diameter which extended by the muscle layer at the antral zone of a small curvature. A semilucent dense area on the bottom of the defect was also determined. It resembled hyaline cartilage. Which process developed in the bottom of the stomach lesion?
A. *Localized hyalinosis
B. Amyloidosis
C. Mucoid swelling
D. Fibrinoid changes
E. Generalized hyalinosis
11. A skin biopsy of a patient with allergic vasculitis was submitted for examination. It is discovered that the vessel walls were thickened and homogeneous. Picro-fuxin stained a tissues a yellow color. They were Shiff-positive. Which pathological process developed in the walls of the vessels?
A. *Fibrinoid swelling
B. Amyloidosis
C. Mucoid swelling
D. Hyalinosis
E. Lipidosis
12. The post-mortem of a patient revealed feature of chronic kidney insufficiency. Grossly, kidneys were enlarged, dense, wax-like, with foci of irregular depressed scars on their surface. Microscopically, the mesangeal areas were expanded and the glomerular capillaries obstructed by Congo red stain-positive amorphous acellular material. In some sections the deposits took on nodular appearance. Which of the following diagnoses is most reliable?
A. *Amyloidosis of the kidneys (Amyloid nephropathy)
B. Acute glomerulonephritis
C. Chronic glomerulonephritis
D. Subacute glomerulonephritis
E. Lipoid nephrosis

13. At autopsy a 76-year-old male, with a history of peritonitis 10 years ago, is found to have thickened and dense both liver and spleen capsules. They were translucent on a sectional view. What is the most likely pathology of the described organs capsules?
A. *Hyalinosis.
B. Necrosis.
C. Mucoid swelling.
D. Fibrinoid swelling.
E. Amyloidosis.

14. A 55-year-old female, with a long history of rheumatoid arthritis, develops renal failure and dies. An autopsy revealed an enlarged solid spleen. On the sectional view, its tissue had brown-reddish coloring with enlarged follicles that look like translucent grayish-white grains. What is the most likely pathological process?
A. *Sago spleen.
B. Frosted spleen.
C. Lardaceous spleen.
D. Spleen hyalinosis.
E. Porphyry spleen.

15. A 66-year-old female, with a long history of post-traumatic osteomyelitis, is admitted to the hospital for treatment of nephrotic syndrome. On the night of admission she suddenly dies. Autopsy revealed dense, white kidneys with scars in the cortical layer; they had a sebaceous glow on the cut surface. What is the most likely kidneys pathology?
A. *Secondary amyloidosis.
B. Primary amyloidosis.
C. Idiopathic amyloidosis.
D. Chronic glomerulonephritis.
E. Chronic pyelonephritis.

16. A 55-year-old man, with a long history of a symmetrical type of severe obesity, developed acute heart insufficiency followed with lethal outcome. An autopsy revealed right ventricle wall burst with hemopericardium and excessive amount of fatty tissue under epicardium. Microscopically: adipose tissue from epicardium penetrates myocardium with muscle fibers atrophy. Name the pathological process?
A. *Simple fatty heart.
B. Fatty degeneration of myocardium.
C. Ischemic disease.
D. Essential hypertension.
E. Acute myocardial infarction.
17. An autopsy of a 56-year-old man with cavernous tuberculosis of the lungs revealed enlarged dense spleen. The cut surface of the spleen tissue had brown-red, smooth, and wax-like appearance. Which of the following is the most likely pathology in the spleen?
A. *Lardaceous spleen.
B. Glaze spleen.
C. Porphyric spleen.
D. Sago spleen.
E. Cyanotic induration.

18. A patient had been suffering from bronchoectases for a long time and died of uremia. Autopsy revealed enlarged, dense kidneys with greasy cut surfaces. Which of the following was the most likely disease?
A. *Renal amyloidosis.
B. Glomerulonephritis.
C. Acute tubular necrosis.
D. Pyelonephritis.
E. Nephrosclerosis

Mixed dystrophy

1. The necrotic Peyer’s patches of the ileum from the patient with typhoid fever are stained in a yellow-brown color. Which pigment impregnates the necrotic tissue?
A. *Bilirubin
B. Hemoglobin
C. Lipofuscin
D. Indol
E. Melanin

2. During post-mortem of a patient arrived from a tropical country, it is discovered that there is a hemomelanosis of a liver, spleen and elements of the reticuloendothelial stroma. These changes are characteristic for which disease?
A. *Malaria
B. Dysentery
C. Diabetes mellitus
D. Exanthematic typhus
E. Grippe

3. A patient who suffered from cancer of the stomach died from cachexia. During the post-mortem the characteristic alteration in the heart were found. How would this condition be termed in the heart?
A. *’Brown’ atrophy
B. ‘Hairy’ heart
C. Solder plaque (bony heart)
D. Tiger’s heart (‘tabby cat’)
E. Bovine heart

4. A man with insufficiency of the mitral valve complained of a cough and sputum with a brownish colouring. Which pigment results in this color of the sputum?
13

A. *Hemosiderin  
B. Melanin  
C. Hemoglobin  
D. Hemomelanin  
E. Iron sulfate

5. The post-mortem of a man who presented in the hospital with a history of a snakebite reveals expressed intravessels hemolysis. During dissection it is noted that the spleen, bone marrow and lymphatic nodes had a brown colouring. Microscopic examination showed that the cytoplasm of macrophages got a brown pigment. Which pigment accumulated in the tissues?
A. * Hemosiderin  
B. Hematoidin  
C. Hematin  
D. Lipofuscin  
E. Bilirubin.

6. The dissection of a patient who suffered from rheumatism and chronic rheumatic valvulitis revealed that mitral valve leaflet was thickened with rough stony deposits. Name the pathology presented with stony appearance of the valves?
A. * Dystrophy calcification  
B. Metastatic calcification  
C. Metabolic calcification.  
D. Fibrinoid  
E. Amyloidosis.

7. An endoscopy was performed on a patient with a chronic stomach ulcer complicated with hemorrhage. This procedure revealed a brownish (coffee-like) liquid in the stomach. Which pigment results in the color of the stomach contents?
A. * Hematin hydrochloride  
B. Hemosiderin  
C. Bilirubin  
D. Ferritin  
E. Porphyrin

8. A 46-year-old man has an acute stomach ulcer complicated by gastric bleeding and vomiting. Gastric masses had a brown color and “coffee-like” appearance. Which pigment created such colouring?
A. * Hematin hydrochloride  
B. Hemoglobin  
C. Bilirubin  
D. Hemomelanin  
E. Iron sulfide

9. A 66-year-old patient complained of pain in the hands and feet joints. Physical examination revealed a deformation and painful of the joints. Laboratory tests showed the increased level of uric acid salts in the blood and urine. Which one of following is not being fully metabolized?
A. *Nucleoprotein.
B. Calcium.
C. Chromoprotein.
D. Lipoprotein.
E. Potassium.

10. A man died from chronic sepsis. A post-mortem revealed an atrophy of the skeletal muscles and brown atrophy of both myocardium and liver. Which one of the following pigments accumulated in tissues?
A. *Lipofuscin
B. Lipochrome
C. Hemosiderin
D. Hemomelanin
E. Melanin

11. A 58-year-old male has been ill for many years with leukemia. A post-mortem exposed a brown color in the marrow, spleen, liver, and lymphatic nodes. The Perls’ histochemical reaction was conducted. It was determined that the reticular, the endothelial cells and histiocytes of these organs contained granules of a dark blue color. Which pigment is responsible for the colouring?
A. *Hemosiderin
B. Bilirubin
C. Hematoidin
D. Hemomelanin
E. Hematoporphyrin

12. The post-mortem of a patient who suffered from malaria revealed jaundiced skin, sclera and mucous membranes. Also, the spleen was enlarged and had dark-grey color. This colour of the spleen is due to the presence of:
A. *Hemomelanin
B. Hemosiderin
C. Lipofuscin
D. Melanin
E. Hematoporphyrin

13. A 56 year old patient died from chronic cardiac insufficiency as a result of rheumatic heart-disease. A post-mortem revealed that lungs were enlarged, dense with red-brownish coloring. What is the most likely diagnosis?
A. *Brown induration lungs
B. Acute bronchitis
C. Honey-comb lungs
D. Chronic bronchitis
E. Chronic emphysema

14. A patient with mitral valve insufficiency presents in his sputum cells, filled with brown pigment. The Perls’ reaction is positive. Name this pigment.
A. *Hemosiderin
B. Hematoidin
C. Melanin
D. Porphyrin
E. Bilirubin

15. A 66-year-old male, with a history of hematogenic tuberculosis was examined. This revealed hyperpigmentation of skin and mucous membranes, cachexia and insufficiency of the cardio-vascular system. Which disease caused such changes?
A. *Addison’s disease
B. Phaeochromocytoma
C. Simmond’s disease
D. Cushing disease
E. Greves’ disease

16. A 52-year-old male with a history of sub-acute septic endocarditis is examined by a physician. A doctor revealed marked general pallor with icteric skin, sclera and visible mucous membranes. Blood test showed accumulation of indirect reacting bilirubin (unconjugated bilirubin). The yellow staining of the skin, sclera and mucous membranes indicates which one of the following?
A. *Prehepatic jaundice
B. Fatty dystrophy
C. Hemosiderosis
D. Hepatic jaundice
E. Posthepatic jaundice

17. A 62-year-old female with a history of stomach cancer with plural metastases died from a cachexia. Select the characteristic changes of the heart expected to be revealed on dissection.
A. *Brown atrophy of myocardium.
B. Amyloid cardiomegaly.
C. Dilatation cardiomyopathy.
D. Hypertrophy cardiomyopathy.
E. “Tabby cat” ("Tiger’s heart").

18. A patient developed a cyst in the cerebrum following a hemorrhagic stroke. Two years later the patient died from pneumonia due to a complication of influenza. During examination of the brain cyst it is noted that the walls have a rusty tint. Perls’ reaction is positive. Name the process occurring in the wall of the cyst?
A. *Localized hemosiderosis
B. General hemosiderosis
C. Local hemomelanosis
D. Infiltration of bilirubin
E. Primary haemochromatosis

19. A patient with a long history of tuberculosis was examined at the hospital. Physical examination revealed a grayish-brown skin color, lowered arterial pressure, hypodynamia and a decline of the level of 17-oxy corticosteroids in the urine and blood plasma. A problem with the metabolism of which pigment is indicated by the clinical signs of this patient?
A. *Melanin  
B. Bilirubin  
C. Lipofuscin  
D. Lipochrome  
E. Hemosiderin

20. A fragment of skin (1x2 centimeters) delivered for histological research. Grossly a small (0,5 cm in diameter) slightly elevated brown lesion, sharply demarcated from the surrounding normal skin, was recognized. Microscopically, a lesion presented with nevus cells nests, rich with brown pigment. This pigment had negative Perls’ reaction. Name the pigment.  
A. *Melanin  
B. Hematoidin  
C. Hemosiderin  
D. Bilirubin  
E. Hemomelanin

21. A 55-year-old male with a history of bronchiectasis, pneumosclerosis and cachexia died. During the post-mortem examination the heart was found to be diminished in size, flabby, with thinned walls. A section revealed brownish color of the heart’s tissue. Which pigment was indicated in the myocardium?  
A. *Lipofuscin  
B. Hemosiderin  
C. Hematoidin  
D. Melanin  
E. Lipochrome

22. A post-mortem of a 44-year-old patient with a history of mitral stenosis reveals dense lungs that are a brown color. Which pathological process is most likely in the lungs?  
A. *Hemosiderosis  
B. Hemochromatosis  
C. Icterus  
D. Hemomelanosis  
E. Lipofuscinosis

23. A post-mortem was performed on a 55-year-old male, who over last eight years suffered from chronic form of malaria. At the dissection both grey matter of the cerebrum and a spleen had the ash-grey color. Which pigment is responsible for this discoloration?  
A. *Hemomelanin  
B. Lipofuscin  
C. Hematoporphyrin  
D. Melanin  
E. Hemosiderin

24. A 62-year-old male who has been ill with diabetes mellitus for 15 years died from a cerebral hemorrhage. Post-mortem revealed kidneys diminished in size with
a fine-grained surface. The epithelium of the canaliculi of distal nephron’s segment was high, with a light foamy cytoplasm. The Best’s carmine staining demonstrated a bright red coloring of the cytoplasm’s accumulations. These changes in the epithelium resulted from the accumulation of:
A. *Glycogen
B. Lipids
C. Hyaline
D. Proteins
E. Amyloid

25. At autopsy 68-year-old male is found to have cancer of the esophagus, accompanied with cachexia. Grossly, fatty tissue disappeared, both a liver and a heart were atrophic. Microscopy revealed brown-yellowish corn-like deposited next to nuclei of myocardial cells. These accumulations had negative Perls’ reaction. Name the material of accumulations.
A. *Lipofuscin
B. Melanin
C. Hemosiderin
D. Ferritin
E. Hemomelanin

26. A 55-year-old patient with a bilateral adrenal glands lesions presented with dark brown colouring of the skin. During histochemical examination of the skin the Perls’ reaction was negative. Which pigment is responsible for this discoloration of the skin?
A. *Melanin
B. Hemosiderin
C. Porphyrin
D. Lipofuscin
E. Biliverdin

27. A 58-year-old female with a long history of chronic dysentery died. At autopsy, the stroma and parenchyma of the myocardium, kidneys, the mucous membrane of the stomach, and the connective tissue of lungs revealed violet color amorphous masses, which had positive Koss’ reaction. Which pathological process developed in the patient’s organs?
A. *Metastatic calcification
B. Dystrophy calcification
C. Metabolic calcification
D. Amyloidosis
E. Hyalinosis

28. A 45-year-old male, with a long history of rheumatism and mitral valve insufficiency, develops a chronic cough with rusty expectoration. What pigment colored sputum?
A. *Hemosiderin.
B. Melanin.
C Hemoglobin.
D. Malarial pigment.
E. Iron sulfide.

29. A 67-year-old male, with a long history of mitral valve’s insufficiency, has been experiencing a cough with red-brownish coloring of a sputum. Cells with brown pigmentation and positive Perls' test were detected in the sputum. Which pigment responsible for the septum coloring?
A. *Hemosiderin.
B. Hematoidin.
C. Melanin.
D. Porphyrin.
E. Bilirubin.

30. A 38-year-old female with chronic stomach ulcer complicated with bleeding examined endoscopically. Stomach masses had coffee ground coloring. Which pigment responsible for this coloring?
A. *Hematin chloride.
B. Hemosiderin.
C. Bilirubin.
D. Ferritin.
E. Porphyrin.

31. A 47-year-old male, with a history of secondary syphilis, has noticed foci of the skin depigmentation at his neck. Name the pathological process of the skin.
A. *Leukoderma.
B. Metaplasia.
C. Leukoplakia.
D. Dysplasia.
E. Parakeratosis.

32. A 38-year-old female is found to have bilateral adrenal adenopathy resulted in brownish coloring of her skin. Perls' test of her skin's biopsy was negative. What pigment altered the color of the skin?
A. *Melanin.
B. Hemosiderin.
C. Porphyrin.
D. Lipofuscin.
E. Biliverdin.

33. A 70-year-old man has noticed recent swelling of joints of his hands and feet. Joints are painful and stiff. Laboratory tests revealed an increased level of urates in blood and urine. What is the most likely substance caused described pathology?
A. *Nucleoproteins.
B. Calcium.
C. Chromoproteids.
D. Lipoproteins.
E. Potassium.
34. A 70 year-old male with a history of chronic shigellosis died. At post-mortem tissue samples were collected for histopoly. Microscopic investigation of hematoxylyn and eosin slides revealed amorphous violet deposits in stroma of the heart, kidneys, lungs and stomach mucosa. Koss' reaction was positive. What is the most likely pathological developed?
A. *Metastatic calcification.
B. Dystrophic calcification.
C. Metabolic calcification.
D. Amyloidosis.
E. Hyalinosis.

35. A woman presented to intensive care department with symptoms of severe hemolysis due to a snake bite. An autopsy revealed brown coloration of the spleen, bone marrow, and lymph nodes. Microscopic examination showed the accumulation of brown pigment in cytoplasm of macrophages of tissue sampler. Which of the following is the pigment that was accumulated in the tissues?
A. *Hemosiderin
B. Hematoidin.
C. Hematin
D. Lipofuscin.
E. Bilirubin.

36. A patient with prolonged esophageal carcinoma died of cachexy. An autopsy revealed atrophy of his heart and liver, marked reduction of subcutaneous and retroperitoneal fatty tissue. Microscopical examination revealed accumulations of the golden-brown granules and clumps with negative Prussian blue reaction within the myocardial fibers. Which of the following pigments accumulated in myocardial fibers?
A. *Lipofuscin.
B. Melanin.
C. Hematoidin.
D. Ferritin.
E. Hemomelanin.

**Necrosis. Postmortem changes.**

1. A male had a surgery due to “acute abdomen”. During the operation it was noted that the peritoneum was dull and in the lumen of the mesenteric artery superior a thrombus was detected. About 80 centimeters of the ileac intestine had a black colouring. Which process was diagnosed in the intestine?
A. *Gangrene
B. Decubitus ulcer
C. White infarct
D. White infarct with a hemorrhagic crown
E. Coagulative necrosis
2. A patient with diabetes mellitus presents to his physician with an acute pain in the right foot. At inspection the toe of foot had a black colour, the tissues of foot were edematous, with bed smell. Which form of necrosis was likely to be diagnosed?
A. * Moist (wet) gangrene
B. Decubitus ulcer
C. Sequester
D. Dry gangrene
E. Infarct

3. A 63-year-old male died of an endemic typhus. During the post-mortem it was revealed that the muscles of the abdominal wall and legs were dense with whitish-yellowish colouring. They resemble a candle. Name the pathological process?
A. *Waxy necrosis (Zenker’s necrosis)
B. Apoptosis
C. Fibrinoid necrosis
D. Colliquative necrosis
E. Caseous necrosis

4. A 72-year-old male had an infarct of the dextral hemisphere of the brain. One year later a computer tomography of the right hemisphere of the brain reveals a cavity with smooth walls and filled with liquid. Which pathological process is he most likely to have?
A. *Post-infarct cyst
B. Hydrocephalus
C. Grey softening of a brain
D. Infarct of a brain
E. Hematoma

5. A post-mortem revealed a thrombus in the left artery mesencephalicae and a large locus of grey softening in the tissues of the left hemisphere of a brain. Which pathological process is most likely to be present in the brain?
A. *Ischemic infarct
B. Coagulative necrosis
C. Abscess
D. Moist gangrene
E. Sequestrum

6. At a post-mortem of the 46-year-old male a large yellow - grey lesion was found in the left ventricle of the heart. A fresh thrombus was found in the coronary artery. What disease is he most likely to have?
A. *Infarct of the myocardium
B. Cardiosclerosis
C. Myocarditis
D. Amyloidosis
E. Cardiomyopathy
7. At autopsy a 60-year-old male is found to have ischemic heart disease and atherosclerosis of the coronary arteries of heart. A section of the myocardium showed a white-yellowish focus, surrounded by the zone of hemorrhages in the apex, anterior and lateral walls areas of a left ventricle. Which is the most likely diagnosis?
A. *Infarct of the myocardium
B. Post-infarction cardiosclerosis
C. Diffuse cardiosclerosis
D. Myocarditis
E. Fatty dystrophy of the myocardium

8. After a long staying in the bed a patient with circulatory deficiency got the skin and soft tissue daren ing above the sacrums. These tissues became swallowed. Sloughing off the epidermis in this area resulted in ulceration. Which complication is most likely?
A. *Decubitus ulcer
B. Dry gangrene
C. Phlegmon
D. Infarct
E. Abscess

9. Histological investigation of liver’s biopsy revealed that some cells burn on small pieces with separate organellas and nuclei fragments surrounded by a membrane. The inflammatory reaction was missing. Select pathological process, the described changes are characteristic for:
A. *Apoptosis
B. Necrosis
C. Karyorrhexis
D. Plasmolysis
E. Plasmorrhexis

10. A male who had a long history of the intermittent claudication demonstrates the tissue of the foot fingers as being dry with a black colour, resembling a mummy. On small interval from this place the dichromatic line (red colour is next to unchanged tissues, and white - yellow colour close to a tered tissues). Which type of a necrosis occurred?
A. *Gangrene.
B. Infarct.
C. Sequester.
D. Decubitus ulcer.
E. Maceration.

11. A 62-year-old male got a surgery due to the inguinal hernia. Macroscopic examination reveals that the wall of the intestine was a cyanotic, inflated, swallowed and coated with threads of a fibrin. Peristalsis was not heard. Which pathological process occurred in the wall of the intestine?
A. *Moist gangrene.
B. Dry gangrene.
C. Coagulate necrosis
D. Colliquative necrosis
E. Decubitus ulcer

12. A postmortem of a man, who died from typhoid revealed muscles on the abdominal wall and legs were dense, fragile, whitish-yellowish colour, resembling a candle. Which term best characterizes the muscles changes?
A. *Zenker’s necrosis
B. Fibrinoid necrosis
C. Caseous necrosis
D. Colliquative necrosis
E. Apoptosis

13. A 48-year-old male, who had a history of hypertension for 12 years, present acute disturbance of the cerebral circulation. He developed a headache and alteration of the motion in the right extremity. Following right-handed hemiplegia resulted in fatal outcome. A postmortem revealed a systemic hyalinosis of the small arteries, thrombosis in the left arteria cerebri media. In the left parietal-temporal area a lesion was found, which is called:
A. *Ischemic infarct
B. Hemorrhage
C. Abscess of a brain
D. Hemorrhagic infarct
E. Edema of the brain

14. A 45-year-old male suddenly died with the following findings revealed during the postmortem. In the back wall of the left ventricle of the heart a myocardial infarction was found. Which of the following microscopic changes in the myocardocytes can be seen in the locus of an infarct?
A. *Karyolysis
B. Fatty dystrophy
C. Carbohydrate dystrophy
D. Calcification
E. Protein dystrophy

15. A postmortem of on a previously ill 48-year-old patient found an obturation of the lumen of the middle cerebral artery due to a thrombus. In the parietal-temporal area of the left hemisphere of the brain a locus of grey colour tissue with soft texture is found. Which term best characterizes the brain tissue changes?
A. *Infarct
B. Sequester
C. Gangrene
D. Caseous necrosis
E. Fibrinoid necrosis

16. A postmortem on the upper lobe of the right lung reveals the large triangle-like locus of the dark red dense tissue. Histological examination indicates necrosis of
the walls of the alveolus’s and the lumens filled with erythrocytes. Which is the most likely associated finding?
A. *Hemorrhagic infarct
B. Carnification
C. Lung’s gangrene
D. Hemorrhage
E. Atelectasis

17. A postmortem on an elderly male with atherosclerosis reveals a thrombus in a branch of the internal carotid artery as well as a grey locus of a moist softening of the brain’s tissue. Which pathological process was found in the brain?
A. *Ischemic infarct
B. Hemorrhagic infiltration
C. Hematoma
D. Encephalitis
E. Tumor of a brain

18. A surgery on a patient, with a history of syphilis revealed a locus of flabby tissue. Grossly, this locus was yellowish, dry, structures and gummy. The most likely diagnoses is:
A. *Caseous necrosis
B. Infarct
C. Waxy necrosis
D. Fibrinoid necrosis
E. Steatonecrosis

19. The investigation of the liver’s biopsy revealed that some separately arranged cells burn on small-sized pieces surrounded by a membrane. In some of them there were organelles, other had the fragments of dissolved nuclei. The inflammatory reaction around these cells missed. Name these changes:
A. *Apoptosis
B. Atrophy
C. Necrosis
D. Hypoplasia
E. Dystrophy

20. An ill elderly patient with a atherosclerosis, develops pain in the left foot. Grossly was found the foot enlargement, its tissues were black, flabby and macerated. The demarcation zone was not expressed. Which term best characterized the foot tissues changes?
A. *Moist (wet) gangrene.
B. Mummification.
C. Coagulate necrosis.
D. Dry gangrene.
E. Sequestrum.

21. A 62-year-old female with atherosclerosis was admitted to the hospitalized. At surgery gross examination revealed purulent peritonitis. During the operation a
thrombus in the mesenteric arterias was found. Which was the most likely cause of the peritonitis?
A. *Hemorrhagic infarct.
B. Angiospastic ischemia
C. Ischemic infarct
D. Stasis
E. Compressive ischemia
22. The examination of a child, who had a history of measles, revealed reddish-black, uneven, swollen, slightly fluctuated lesions of cheeks and perineum area. Name the complication of measles?
A. *Moist gangrene (noma)
B. Dry gangrene
C. Gas gangrene
D. Decubitus ulcer
E. Trophic ulcer
23. A postmortem was performed on a female who died due to the cystadenocarcinoma metastases. The postmortem revealed large segments of a necrosis of the skin and soft tissues within cubitus area. Name the form of the necrosis.
A. *Decubitus ulcer
B. Infarct
C. Sequester
D. Caseous necrosis
E. Zenker’s necrosis
24. A 58-year-old female with the history of atherosclerosis dies suddenly due to acute heart failure. Gross inspection of the left ventricle of the heart revealed a whitish-yellowish 6x5 cm, dense lesion with uneven boundaries and hemorrhagic zone next to it. Which is most likely diagnose?
A. *Infarct of the myocardium
B. Postinfarction fibrosis
C. Healed infarct
D. Myocarditis
E. Ischemic cardiomyopathy
25. An ultrastructural examination of a salivary gland revealed within cells pieces of the nuclei surrounded by a membrane. Also condensate fragments of nuclear material and separate organelles were found. An inflammatory reaction around these cells was missing. Which term most correctly defines these alteration?
A. *Apoptosis
B. Karyorrhexis
C. Coagulation necrosis
D. Karyopyknosis
E. Karyolysis
26. A patient with tuberculosis has a kidney biopsy performed. Histological investigation revealed the caseous necrosis of the tissue accompanied by disorderly ar-
ranged fine grains of a chromatin. Which term most correctly defines describe lesion?
A. *Karyorrhexis
B. Karyolysis
C. Karyopyknosis
D. Mitotic activity of nuclei
E. Apoptosis

27. A postmortem of a 48-year-old male who had a history of typhoid fever revealed that the rectus abdominis at the wall was dense, a whitish colour, and resembled a candle. Which is the most likely diagnosis?
A. *Waxy necrosis
B. Fibrinoid necrosis
C. Colliquative necrosis
D. Caseous necrosis
E. Apoptosis

28. A 44 year old ill patient died due to the severe chronic heart failure. Pathologist diagnosed rheumatic granulomatous myocarditis. Microscopic evaluation of the myocardium indicated the presence of granulomas which consisted of macrophages with hyperchromatic nuclei and clear cytoplasm. Also necrosis was seen in the center of a lesion. Which is the most likely type of necrosis in the center of the lesion?
A. *Fibrinoid necrosis.
B. Waxy necrosis.
C. Caseous necrosis.
D. Colliquative necrosis.
E. Fatty dystrophy.

29. A 57-year-old patient has a long history of the type II diabetes mellitus. Physical examination revealed the alteration of the right foot tissues. They are dense, black with precise boundaries from normal tissues. Which term most correctly describe the lesion?
A. *Dry gangrene.
B. Wet (moist) gangrene.
C. Gas gangrene.
D. Decubitus.
E. Trophic ulcer.

30. A postmortem examination of a dead body revealed a cloudy corneas, dry skin with yellowish - brown lesion. Which term most correctly identifies describes a post-mortem alterations?
A. *Cadaver desiccation
B. Clotting of blood
C. Livor mortis
D. Rigor mortis
E. Algor mortis
31. The postmortem of a 48-year-old male reveals in the right temporal lobe of the brain a large grey lesion with a softening, porridge-like texture. The basal arteries of the brain had numerous white - yellow thickenings of an intima which significantly decreased lumen. Which is the most likely diagnosis?
A. *Ischemic infarct
B. Abscess of a brain
C. Hematoma
D. Hemorrhagic infarct
E. Edema of the brain

32. At post-mortem, a 60-years-old man, with a history of typhoid fever, is found to have rectus muscles of the anterior abdominal wall dense, whitish, and look like a stearic candle. What is the most likely diagnose?
A. *Zenker's necrosis.
B. Fibrinoid necrosis.
C. Colliquative necrosis.
D. Caseous necrosis.
E. Apoptosis.

33. A 65-year-old female, with a long history of diabetes mellitus, presented her black, edematous and painful thumb of the right foot. Gross inspection revealed a focal epidermal detachment and malodorous discharge. What is the most likely clinicopathologic form of necrosis?
A. *Moist (wet) gangrene.
B. Decubitus ulcer.
C. Sequester.
D. Dry gangrene.
E. Infarction.

34. A 5-year-old boy with measles presents to his pediatrician with necrotic changes of his cheeks. Gross inspection revealed that the cheeks soft tissues were edematous with reddish black fluctuated indistinctly outlined foci. What is the most likely complication of a measles?
A. *Moist gangrene.
B. Dry gangrene.
C Gas gangrene.
D. Decubitus ulcer.
E. Trophic ulcer.

35. A physical examination of 67-year old lady, with a history of femoral bone fracture, revealed a sequester formation accompanied with chronic inflammation of a bone marrow and adjacent tissues. What is the most likely disease caused such lesions?
A. *Osteomyelitis.
B. Reticulosarcoma.
C. Multiple myeloma.
D. Osteoclastoma.
36. An elderly woman with a history of a stroke one year ago complains of a left limbs immobility. A computer tomography examination revealed a cavity filled with liquor, at right hemisphere of her brain. What is the most likely diagnose?
A. *Postinfarction cyst.
B. Hydrocephaly.
C. Grey encephalomalacia.
D. Cerebral infarction.
E. Hematoma.

37. A section of the left lung was found to have an area of dense red tissue. The area was cone-shaped, stood out distinctly from the healthy tissue, with its base directed to the pleura. The dissected tissue was granular, dark-red. What is the most likely diagnosis?
A. *Haemorrhagic infarction
B. Lung gangrene
C. Lung abscess
D. Croupous pneumonia
E. Primary tuberculous affection

38. An autopsy of a dead patient with typhoid fever revealed firm, fragile, whitish-yellow, and waxy muscles of the anterior abdominal wall and thighs. What is the most likely pathology of muscles?
A. *Zenker necrosis.
B. Fibrinoid necrosis.
C. Caseous necrosis.
D. Colliquative necrosis.
E. Apoptosis.

39. A 55-year-old patient with 12 years history of hypertensive disease presented to a hospital with disturbances of cerebral blood circulation resulted in right-side hemiplegia. He died shortly after arrival. A postmortem revealed systemic hyalinosis of small blood vessels and thrombosis of medial cerebral artery. There was also a focus of a structureless grayish tissue in the temporal lode of left hemisphere. The focus was interpreted as:
A. *Ischemic infarction
B. Hemorrhage
C. Abscess
D. Hemorrhagic infarction
E. Edema

40. A 59-year-old patient with transmural myocardial infarction died of cardiac tamponade due to ruptured myocardial infarct. Which process resulted in a heart’s wall rupture?
A. *Autolytic process leading to myocardial softening (myomalacia)
B. Replacement of infracted areas by connective tissue (organization)
C. Increasing of blood pressure in pulmonary circulation
41. A 58-years-old smoker with a 5-year history of angina pectoris died during the heart attack. An autopsy revealed atherosclerosis of the coronary arteries with thrombosis, uneven color of anterior wall of the left ventricle and flabbiness of the myocardium. What is the most likely diagnosis?
A. Myocardial infarction
B. Angina pectoris
C. Myocarditis
D. Postinfarction cardiosclerosis
E. Myocardial aneurysm

42. A 74-year-old patient with a history of hypertensive syndrome developed collapse and died of increased disturbances of respiration and heart activity. An autopsy revealed a dark-red 2x1x5 cm bloody focus in the trunk of the brain. Vessels of the brain base were considerably thickened, whitish-yellow, with narrowed lumen. What is the most likely diagnosis?
A. Hemorrhagic infarct
B. Cyst of the brain
C. Gumma of brain
D. Ischemic infarct
E. Meningioma

**Blood and lymph circulation disorders.**

1. The postmortem of a 48-year-old male, with a long history of a chronic heart failure, revealed an enlarged liver. Grossly, a liver had a motley pattern. Macroscopically, the sectional view looked like a nutmeg on incision. Which term most correctly defines these alteration?
A. * General venous plethora
B. General arterial plethora
C. Anemia
D. Hemorrhage
E. Bleeding

2. A post-mortem of a 43-year-old female revealed multiple, hemorrhagic infarcts in lungs. Some lungs’ vessels had reddish-brown dense masses within lumens, which were not attached to the vessel walls. Varicose phlebectasia of the legs with thromboses of some veins were also determined. Which pathological process occurred in this case?
A. *Thromboembolism of pulmonary artery.*
B. Fat embolism of pulmonary artery.
C. Tissue embolism of pulmonary artery.
D. Foreign bodies embolism of pulmonary artery.
E. Gas embolism.
3. A male patient died after a abdominal surgery. During the postmortem numerous thrombuses were found in the veins of the pelvis. Thromboembolic syndrome was diagnosed. Where it is necessary to search for thromboembolies?
A. *Lungs artery
B. Portal vein
C. Left ventricle of heart
D. Brain
E. Veins of the lower extremity

4. The histological investigation of a liver detects venous plethora of center lobules, dystrophy and atrophy of hepatocytes in the venous plethora’s area, fatty a dystrophy of hepatocytes on the periphery of a lobe. The replacement fibrosis in places of an atrophy of the hepatocytes was also revealed. Which pathological process does this refer to?
A. *‘Nutmeg’ liver with precirrhotic phenomena.
B. Biliary hepatic cirrhosis.
C. Fatty hepatosis.
D. Hepatitis.
E. Toxic dystrophy of a liver.

5. A 35-year-old patient complains of repeated vomiting, diarrhea, decreased arterial pressure and tachycardia. He supposes this condition related to the food poisoning. Laboratory tests detected Salmonella’s infection. Hematological examination revealed an increased number of erythrocytes per unit volume. Which circulatory disturbance took place to create this pathology?
A. *Clotting of a blood.
B. Hemolysis of erythrocytes and compensatory induction of a hemogenesis
C. General arterial plethora
D. Polycythemia
E. Hyperchromatic anemia

6. A male with a history of myocardial infarct died of cardiovascular failure. A post-mortem revealed a replacement fibrosis, hypertrophy of the myocardium and dilatation of the cavities, especially the right ventricle. The liver was enlarged. Its surface was smooth. Grossly, a motley pattern with dark red dots on the grey a background was revealed. Histologically, central zones of the lobules were hyperemic. On the periphery, around of periportal tracts hepatocytes demonstrated fatty dystrophy. Name these liver changes.
A. *"Nutmeg” liver (chronic venous plethora)
B. Pseudo ‘nut-meg’ liver
C. Amyloidosis
D. Cirrhosis of a liver
E. Steatosis of a liver

7. A male patient involved in the traffic accident received a wound in the neck due to broken glass. The bleeding was small, but a short time after the accident he died
of acute dyspnea. A post-mortem of the heart revealed bubbles excretion when pericardium filled with water. Indicate which pathological process took place:
A. *Air embolism
B. Gas embolism
C. Fat embolism
D. Thromboembolism
E. Foreign bodies embolism
8. A 52-year-old male with long history of rheumatic heart disease died of chronic heart failure. A post-mortem revealed brown colour, enlarged dense lungs. Name the changes in lungs.
A. *Brown induration of lungs
B. Acute bronchitis
C. Horny-comb lungs
D. Chronic bronchitis
E. Chronic emphysema
9. A patient, who had fast elimination of 10 liters of an ascitic liquid from abdomen, suddenly lost his consciousness. What was the cause of this phenomenon?
A. *Anemia of the brain
B. Thrombosis of the cerebral arteries
C. Brain hemorrhage
D. Arterial hyperemia
E. Thrombosis of the cerebral veins
10. A young male with a history of rheumatic heart disease since childhood, gradually develops mitral stenosis, accompanied with episodes of heart failure. He presents to a hospital complaining of coughing with a reddish-brown sputum. Name probable changes at patient’s lungs.
A. *Brown induration of lungs
B. Emphysema of lungs
C. Atelectasis of lungs
D. Pneumosclerosis
E. Bronchiectasis
11. At autopsy an elderly female is found to have a blood clot in the femoral artery, which grossly had a striped pattern. Microscopy revealed a congestions of fibrin fibers and broken down red and white cells. Which is the most likely type of thrombus?
A. *Mixed thrombus
B. Postmortem convolutions of a blood
C. Thromboemboli
D. Hyaline thrombus
E. Red thrombus
12. A patient has a purulent otitis and thrombosis of a sigmoid sinus of a dura mater. Name the complication if thrombus breaks down and fragments circulate to distal vessels.
A. *Thromboembolism of branches of pulmonary artery
B. Thromboembolism of vessels of a brain with development of a grey softening of the brain
C. Thromboembolism of vessels of a retina of an eye and development of blindness
D. Thromboembolism of coronary arteries
E. Local anemia

13. A 43-year-old male, with a history of traffic accident and poly trauma, including multiple bone fractures, presented to the hospital. On the second day after the trauma, he complained of a pain in the right half of the chest, heavy breathing. At night, he died due to progressive heart and respiratory failure. Microscopic investigation revealed Sudan-positive orange drops in pulmonary and cerebral vessels that completely occlude the lumens of microcirculatory vessels. What is the most likely complication led to a patient’s death?
A. *Fat embolism.
B. Gaseous embolism.
C. Medicamentous embolism.
D. *Microbial embolism.
E. Thromboembolism.

14. A 62-year-old patient had a surgery due to acute appendicitis. She had been placed in a bed for 5 days. After she decided to get out of bed she experienced a shortage of air, her face became cyanotic and she lost her consciousness. After unsuccessful resuscitation the patient died. A post-mortem revealed a thromboembolism of the pulmonary artery. Which of the following is most likely source of thromboembolism?
A. *Thrombosis of veins of the lower extremity
B. Thrombosis of a portal vein
C. Thrombosis of mesenteric arteries
D. Thrombosis in a left ventricle of heart
E. Ball-shaped thrombus of an auricle

15. A male with a fracture of the shoulder bone carried on overlapped plaster bandage. Suddenly, an arm and the visible part of the forearm became cyanotic, cold, and edematous. Which of the following is most likely happened?
A. *Local venous plethora
B. Local arterial plethora
C. Local anemia
D. Stasis
E. Thrombosis

16. An elderly female develops acute disorder of the cerebral blood circulation, followed with coma, resulted in fatal outcome. A post-mortem revealed in the right hemisphere of the brain a large cavity, filled with blood. Which pathological process took place in the brain?
A. *Hematoma
B. Hemorrhagic infiltration
C. Infarct of the brain
D. Diapedesis
E. Edema of the brain

17. A male suddenly died after an open fracture of the clavicle. A post-mortem revealed in the right ventricle of the heart and pulmonary arteries the foamy blood. Which one was the cause of death?
A. *Air embolism
B. Bacterial embolism
C. Hemorrhage
D. Tissue embolism
E. Fat embolism

18. A male with a history of the decompression sickness developed symptoms of acute cerebral circulation disorder and died soon. A post-mortem revealed in the left hemisphere of the brain the locus of a grey softening of the brain, which was 6x5x3 cm. Which one is most likely to cause the death of the patient?
A. *Gas embolism.
B. Fat embolism.
C. Thrombosis.
D. Thromboembolism.
E. Atherosclerosis of the vessels.

19. A post-mortem of an elderly man with a long history of the ischemic heart disease and heart failure revealed a nutmeg liver, brown induration of lungs, cyanotic induration of kidney and spleen. Indicate, what type of the blood circulation disorder is most likely?
A. *Chronic general venous plethora.
B. Arterial hyperemia.
C. Acute general venous plethora.
D. Acute anemia.
E. Chronic anemia.

20. A 50-year-old male with a myocardial infarction died from the heart failure. A post-mortem revealed the edema of the lungs and petechial hemorrhages at serous and mucus membranes. Microscopic examination indicated marked dystrophic alterations of the nephron’s epithelium at proximal canaliculi of kidneys. Also, the centrolobular hemorrhage and necrotic zones were found in the liver. Name the type of the blood circulation disorder.
A. *Acute general venous plethora.
B. Arterial hyperemia.
C. Chronic general venous plethora.
D. Acute anemia.
E. Chronic anemia.

21. A neonate died of intoxication. A microscopic examination of an umbilical vein revealed a diffuse inflammatory infiltration of the vessel’s wall. Also, its lumen was filled with thrombus, rich with leucocytes and bacterial colonies. Karyorrhexis
was detected in many leucocytes. Which is most likely outcome of a thrombus in that case?
A. * Septic autolysis.
B. Aseptic autolysis.
C. Organization and vascularization of the thrombus.
D. Thromboembolism.
E. Calcification of a thrombus.
22. A 68-year-old female is admitted to the hospital for treatment of deep vein thromboses. The next day she suddenly died. At autopsy a large plug of laminated blood clot is found to occlude the main pulmonary artery. Which is likely to be found in her lungs?
A. *Thromboembolism
B. Thrombosis
C. Tissue embolism
D. Foreign bodies embolism
E. Fat embolism
23. A 77-years-old female with unstable angina presents to physician with slowly increasing heart failure symptoms. On the night of admission to the hospital she dies. A post-mortem examination revealed the enlarged liver with dense texture and the rounded edges. Sectional view had a nutmeg pattern with dark red dots on the yellowish background. Which pathological process resulted in liver’s alteration?
A. * Chronic venous plethora
B. Acute venous plethora
C. Arterial plethora
D. Arterial anemia
E. Chronic hemorrhage
24. A post-mortem of a 53-year-old male with a long history of hypertension revealed the cavity in the occipital lobe of the brain. It measured 2x1 cm, had a brownish smooth walls and filled with transparent liquid. Which is the most likely diagnosis?
A. * Cyst after hemorrhages
B. Softening of the brain
C. Abscess of a brain
D. Developmental defect of a brain
E. Cyst after softening of the brain
25. A 65-years-old patient, who presented with a 10 years history of ischemic heart disease, died due to heart failure. An autopsy revealed the cyanotic induration of both spleen and kidneys, brown induration of lungs and “nutmeg” liver. Which is the most likely type of the blood circulation disorder, resulted in such changes of internal organs?
A. *General chronic venous hyperemia
B. General acute venous hyperemia
C. General arterial hyperemia after an anemia
D. Arterial ischemia as a result of reallocating a blood
E. Local chronic venous hyperemia
26. A 63-year-old patient with long history of ischemic heart disease and repeated myocardial infarction died due to progressive cardiovascular failure. A post-mortem revealed an enlarged, dense spleen with the dark red colour of the sectional view. At the microscopic examination of spleen the pulp’s sclerosis and atrophy of the follicles were found. Which term most correctly defines these changes?
A. *Cyanotic induration of a spleen
B. Sago spleen
C. Waxy spleen
D. Porphyry spleen
E. Septic spleen
27. A young male fractures his pelvis and femur in a motor vehicle accident. On the third day he dies after respiratory distress and cerebral dysfunction. A histological examination revealed Sudan-positive orange globules scattered within cerebral cortex, kidneys and lung microcirculatory vessels. Which is most likely diagnoses?
A. *Fat embolism
B. Gas embolism
C. Tissue embolism
D. Microbial embolism
E. Thromboembolism
28. A cosmonaut died due to the air-tightless of the space-shuttle cabin. Microscopic examination of the vessels of the internal organs revealed multiple bubbles. Liver cells developed fatty dystrophy. In the brain and spinal cord multiple small, grey, soft lesions were discovered. Indicate the most probable cause of such alterations.
A. *Gas embolism
B. Air embolism
C. Fat embolism
D. Thromboembolism
E. Tissue embolism
29. A patient with a long history of rheumatic disease died of cardiopulmonary failure. A post-mortem revealed a stenosis of the mitral orifice as well as a brown induration of lungs. Which term most correctly defines this blood circulation disorder?
A. *Chronic left ventricular failure.
B. Chronic right ventricular failure.
C. Acute left ventricular failure.
D. Acute right ventricular failure.
E. Portal hypertension.
30. A post-mortem of a 59-year-old patient with long history of idiopathic hypertension revealed in brain a cavity with rusty colour walls. Which process preceded these changes?
A. *Hematoma
B. Diapedesis
C. Ischemic infarct
D. Plasmorrhagia
E. Abscess

31. A 65-year-old patient presented with liver cirrhosis. The removal from his abdominal cavity of 10 liters of ascitic liquid resulted a collapse. Grossly his peritoneum was hyperemic. Define the type of hyperemia in peritoneum.
A. *Post-anemic hyperemia
B. Collateral hyperemia
C. Complementary hyperemia
D. Inflammatory hyperemia
E. Caused by arteriovenous fistula

32. A post-mortem of a 60-year-old female with a history of secondary hypertension revealed a cavity at the right hemisphere of the brain 4x2,5 cm, filled with red clots of blood and softened brain tissue. What term best characterized the brain changes?
A. *Hematoma.
B. Hemorrhagic impregnation.
C. Ischemic infarct.
D. Cyst.
E. Abscess.

33. An inexperienced scuba diver ascends from a depth of 55 meters to the surface in about 5 minutes. Shortly after surfacing he complains of severe muscle contraction and intense abdominal pain. What is most likely diagnose?
A. *Gas embolism
B. Air embolism
C. Fat embolism
D. Thromboembolism
E. Tissue embolism

34. A 78-year-old male, with a history of stroke 2 years ago, died of pneumonia as a complication of severe influenza. At post-mortem, gross investigation of his brain revealed a cerebral cyst with rusty color of its walls. Perls' test was positive. Name the process revealed within a cystic wall.
A. *Local hemosiderosis.
B. Common hemosiderosis.
C. Local hemomelanosis.
D. Infiltration of bilirubin.
E. Primary hemochromatosis.

35. A 54-years old male with a history of ischemic heart disease presents at hospital with recurrent myocardial infarction. Few days later, he died due to cardiac failure. Post-mortem revealed an enlarged solid spleen of dark cherry color on the cut surface. Microscopically, pulp sclerosis and follicles atrophy were found out. What is the most likely term to define spleen’s alterations??
A. *Cyanotic induration of spleen.
B. Sago spleen.
C. Lardaceous spleen.
D. Porphyry spleen.
E. Septic splenitis.

36. A post-mortem of 77-year-old male, with a long history of cerebral atherosclerosis, revealed an atrophy of his cerebral cortex. What was the most likely cause of cortex alterations?
A. *Insufficiency of blood supply.
B. Pressure.
C. Physical and chemical factors.
D. Neurotic.
E. Dysfunctional.

37. A 56-year-old male with a history of cerebral atherosclerosis suddenly dies. At a there is a thrombus within a middle cerebral artery's lumen. Gross inspection revealed a grey flabby focus at the parietotemporal part of the left hemisphere of his brain. What are the most likely alterations diagnosed in a brain tissues?
A. *Infarction.
B. Sequestrum.
C. Gangrene.
D. Caseous necrosis.
E. Fibrinoid necrosis.

38. An autopsy of a patient who died suddenly at emergency room revealed in his brain a cavity of irregular shape (5 x 3.5 cm) filled with blood clots and macerated cerebral tissue. An area of cavitary destruction had a rim of brown discoloration. This lesion was found within the subcortex nuclei at the right hemisphere of brain. What is the most likely definition of described pathology?
A. *Hematoma.
B. Hemorrhagic impregnation.
C. Ischemic infarction.
D. Cyst.
E. Abscess.

39. 2 hours after a skeletal extension was performed to a 27 year old patient with multiple traumas (closed injury of chest, closed fracture of right thigh) his condition abruptly became worse and the patient died from acute cardiopulmonary decompensation. Histological examination of pulmonary and cerebral vessels stained with Sudan III revealed orange drops occluding the vessel lumen. What complication of polytrauma was developed?
A. *Fat embolism
B. Thromboembolism
C. Air embolism
D. Microbal embolism
E. Gaseous embolism
40. A 65-year-old patient died of chronic heart failure due to rheumatic valve defect. An autopsy revealed the enlarged, dense, brown lungs. What are the most likely changes in the lungs:
A. *Brown induration of the lungs.
B. Acute venous congestion
C. Honeycomb lungs.
D. Chronic bronchitis.
E. Chronic emphysema.

41. A 55-year-old patient had a prolonged immobilization due to the surgery operation. Once, after getting up from a bed he developed sudden onset of dyspnea, breathing difficulties and cyanosis. Shortly after that he got unconscious state and then died. A post-mortem revealed a pulmonary thromboembolism. Choose the most probable source of thromboembolism:
A. *Veins of lower extremities
B. Portal vein
C. Mesenterial arteries
D. Left heart ventricle
E. Left atrium

42. A patient died of a heart failure. An autopsy revealed enlarged and hyperemic liver, with dark red foci surrounded by paler yellow-brownish zones on its cut surface. Microscopical investigation showed congestion of central veins and fat dystrophy of hepatocytes on the periphery of lobules. Specify the most probable pathology of a liver.
A. *Nutmeg liver
B. False nutmeg liver
C. Hepatic amyloidosis
D. Liver cirrhosis
E. Liver steatosis

43. An autopsy of 86-year-old female with a long history of chronic coronary disease followed with heart failure revealed ‘nutmeg’ liver, brown induration of lungs, cyanotic induration of the kidneys and spleen. Name the kind of a circulatory disturbance.
A. *Chronic general venous plethora
B. Acute anaemia
C. Chronic anaemia
D. Arterial hyperaemia
E. Acute general venous plethora

**Inflammation.**

1. A histological investigation of enlarged neck lymphatic node revealed a congestion of epithelial cells, lymphocytes and giant Pirogov-Langhan’s cells. In the center of lesion a caseous necrosis was present. Which pattern of inflammation do the lymphatic node display?
A. *Tuberculosis
B. Rhinoscleroma
C. Sarcoidosis
D. Glanders.
E. Syphilis.
2. A 3-year-old child died of a meningococcal fever. A macroscopic study revealed swallowed meninges which had yellow-green colouring. Which pattern of inflammation was most likely in meninges?
   A. *Fibrinous-purulent inflammation
   B. Serous inflammation
   C. Hemorrhagic inflammation
   D. Catarrhal inflammation
   E. Necrotic inflammation
3. A 37-year-old male presents with a fever, dyspnea and pain in the right part of the chest. The pleurocentesis gave 700 mls of thick yellow-greenish liquid. What pathological process was diagnosed in a pleural cavity?
   A. *Empyema of a pleura
   B. Bronchopneumonia
   C. Serous pleuritis
   D. Hemorrhagic pleuritis
   E. Carcinomatosis of a pleura
4. A 25 years old male presents with a 2-day history of itching and redness in the buccal area that appeared after shaving. Physical examination by family physician revealed vesicles filled with transparent fluid on the background the hyperemic buccal area. What is the most likely type of fluid in the vesicles?
   A. *Serous exudate.
   B. Transsudate.
   C. Purulent effluent.
   D. Mucous exudate.
   E. Hemorrhagic exudate.
5. An autopsy of a 34-years old female, with a history of croupous pneumonia revealed opaque fluid in her pleural cavity. There was also a grey membrane on the visceral pleura. What is the most likely type of the pleura’s inflammation?
   A. *Fibrinous.
   B. Catarrhal.
   C. Suppurative.
   D. Granulomatous.
   E. Hemorrhagic.
6. A 4-year-old girl with 3 days history of diphtheria presents to the emergency with croup symptoms. Intensive care was unsuccessful and child died at the hospital. A post-mortem revealed thickened, edematous, dull mucous tunic of the larynx, trachea, and bronchi covered by grayish membrane easily separated from tissues underneath. What is the most likely type of inflammation?
A. *Fibrinous.  
B. Serous.  
C. Suppurative.  
D. Mixed.  
E. Catarrhal.

7. At post-mortem a 5-year-old boy is found to have a severe tracheobronchitis complicated with asphyxia. Grossly, a thick, gray, leathery membrane covered the mucous tunic of trachea and bronchi. The membrane loosely attached to underlying tissues and easily removed with forceps. The lumen of the segmental bronchi was blocked with gray masses of tissue debris, which microscopically consisted with necrotic tissues, neutrophils, fibrin and bacteria. What is the most likely type of inflammation?  
A. *Croupous.  
B. Catarrhal.  
C. Diphtheritic.  
D. Purulent.  
E. Serous

8. An autopsy of a 50-year-old male, who died of dysentery, revealed the hyperemic mucosa of the colon, coated with grey membranes, which can be removed from tissues underneath with some effort. Which type of inflammation described in the intestine?  
A. *Diphtheroid inflammation  
B. Croupous inflammation  
C. Hemorrhagic inflammation  
D. Serous inflammation  
E. Catarrhal inflammation

9. A 30-year-old male has a neck lymph node removed for examination. Histological investigation revealed granulomas, which consisted of epithelioid, lymphoid and multinuclear Langhans giant cells. Granulomas’ centers were presented with necrosis. What causative agent needs to be revealed in the necrosis zone for support of the diagnosis of tuberculosis?  
A. *Mycobacterium tuberculosis  
B. Treponema pallidum  
C. Staphylococcus  
D. Frisch bacillus  
E. Salmonella

10. An autopsy of a 53-year-old male, with a history of crupous pneumonia, revealed in his dextral pleural cavity 900 ml of cloudy, grey-yellowish colored liquid. Pleural membranes were found to be dim and plethoric. Name the clinical-morphological form of the inflammation in the pleural cavity?  
A. *Empyema.  
B. Fibrinous inflammation.  
C. Phlegmon.
D. Chronic abscess.
E. Acute abscess.
11. An autopsy of a 53-year-old male, who died from chronic renal failure, revealed the colon’s mucosa, covered with grey – yellow membranes, densely coherent to tissues underneath. The removal of the membranes resulted in ulcers formation. Name a type of an inflammation?
A. *Diphtheroid
B. Serous
C. Catarrhal
D. Croupous
E. Purulent
12. A 65-year-old female with a long history of chronic glomerulonephritis died from chronic renal failure. A post-mortem revealed on the surface of the epicardium and pericardium grey-whitish villous membranes. Which pathological process took place in the pericardium?
A. *Fibrinous inflammation
B. Organization
C. Proliferative inflammation
D. Hemorrhagic inflammation
E. Arterial plethora
13. An elderly man presented to his physician with the complicated nasal breathing. The histological investigation of a biopsy from his nose septum revealed granulomatous inflammation in the mucosa with groups of large vacuolated histiocytes containing bacteria (Mikulicz’s cells). What is the most likely diagnosis?
A. *Rhinoscleroma
B. Syphilis
C. Tuberculosis
D. Malleus
E. Lepra
14. An elderly man, with a history of an operation, presented with a sepsis, developed on a background of a decreased immune reactivity of an organism. A disease resulted in fatal outcome. Microscopical investigation of the abdominal wall revealed the diffuse segmentonuclear leukocyte’s infiltration of intermuscular spaces, edema of a tissue and lysis of muscle fibers. Define the type of inflammation?
A. *Phlegmon.
B. Diphtheroid inflammation.
C. Abscess.
D. Necrosis.
E. Catarrhal inflammation.
15. A 64-years-old male died of rheumatism. An autopsy revealed epicardium covered with villiferous grey color membranes, which were easily separated from tissues underneath. The separation of membranes presented an edematous, hyperemic surface of epicardium. What type of an inflammation revealed in pericardium?
A. **Fibrinous pericarditis**  
B. Purulent pericarditis  
C. Hemorrhagic pericarditis  
D. Proliferative pericarditis  
E. Catarrhal pericarditis

16. A 50-year-old male died of a pulmonary and cardiac insufficiency. An autopsy revealed in a left lung a 4 x 4 cm cavity, filled with pus. The wall of a cavity had a rough pattern, presented by pulmonary tissue. What is the most likely diagnose?  
A. *Acute abscess*  
B. Chronic abscess  
C. Cavernous tuberculosis  
D. Hydatidosis  
E. Fibrosing alveolitis

17. A post-mortem of a man revealed in his abdominal cavity approximately 2.0 liters of a purulent exudate. A peritoneum was found to be dull, with a grayish tint. The intestinal serous membranes were covered with grayish membranes, which were removed easily. Which of the following is the most accurate diagnosis?  
A. *Fibro-purulent peritonitis*  
B. Hemorrhagic peritonitis  
C. Serous peritonitis  
D. Tuberculous peritonitis  
E.  

18. A histological examination of the myocardium of a man, who died from heart failure, revealed a sclerosis of the pericardial connective tissue and diffuse infiltration by lymphocytes, macrophages, plasmocytes and single neutrophils. What is the most likely type of inflammation in a heart?  
A. *Interstitial productive.*  
B. Granulomatous.  
C. Alterative.  
D. Exudative diffuse.  
E. Exudative focal.  

19. A 28-year-old male presented to the hospital with a fever and weakness, (asthenia). A biopsy was taken from one of his enlarged neck lymph nodes for histological examination. Microscopic investigation revealed the foci of necrosis, surrounded by epithelioid cells, giant multinuclear Langhans' cells and also lymphocytes. What is the most likely diagnosis?  
A. *Tuberculosis*  
B. Hodgkin’s disease  
C. Lympholeukemia  
D. Sarcoidosis  
E. Syphilis

20. A microscopic examination of a kidney biopsy revealed foci with granular, eosinophilic masses in their centers. These lesions were surrounded by an infiltrate,
consisted of lymphocytes, epithelioid cells and giant Langhans' cells. What is the most likely pathological process?
A. *Granulomatous inflammation
B. Coagulative necrosis
C. Caseous necrosis
D. Alterative inflammation
E. Proliferation and derivation of macrophages
21. A young male presented to his physician with considerably enlarged, hyperemic, painful tonsils. A gross examination of tonsils revealed dense, dirty-gray membranes on the surface. These membranes have spread to the hard palate and were intimately attached to tissues underneath. An attempt to remove the membranes resulted in bleeding. Which pathological process indicates these morphological changes?
A. *Diphtheroid exudative inflammation.
B. Croupous exudative inflammation.
C. Catarrhal exudative inflammation.
D. Purulent exudative inflammation.
E. Hemorrhagic exudative inflammation.
22. A 38-year-old man, with a history of chronic pyelonephritis, died from the chronic renal failure. Medical record showed that an auscultation in the hospital determined a patient’s “pericardial frictions rub”. An autopsy revealed a dim, rough, and hairy – like epicardium. What type of pericarditis presented in that case?
A. *Croupous
B. Diphtheroid
C. Purulent
D. Ichorous
E. Serous
23. A child presented to a hospital with symptoms of asphyxia. A physical examination revealed in the larynx whitish membranes, which obstructed lumen and were easily separated from tissues underneath. Name the most probable type of an inflammation in the larynx?
A. *Croupous inflammation
B. Hemorrhagic inflammation
C. Diphtheroid inflammation
D. Catarrhal inflammation
E. Purulent inflammation
24. A macroscopic investigation of trachea revealed a dim, hyperemic mucosa, covered with grey-white membranes. Which one is the most likely form of the inflammation?
A. *Fibrinous
B. Purulent
C. Serous
D. Proliferative
25. An elderly man presented with a decomposition of some segments of spongy and cortical layers of an anticnemion bones. The cavities are filled with creamy greenish-yellow masses. What is the type of inflammation?
   A. *Purulent
   B. Catarrhal
   C. Serous
   D. Proliferative
   E. Mixed

26. A female patient presented to the hospital with a fever, asphyxia and pain in the right part of her chest. During a pleurocentesis procedure 700 ml of a viscid yellow-green liquid was removed. What is the most likely diagnosis?
   A. *Empyema of a pleura
   B. Carcinomatosis of a pleura
   C. Serous pleurisy
   D. Fibrinous pleurisy
   E. Hemorrhagic pleurisy

27. An autopsy of the 58-year-old man, revealed in his liver a focus of tissue destruction, 4 cm in diameter, filled with a yellow-green liquid. What is the most likely diagnose?
   A. *Abscess
   B. Phlegmon
   C. Anthrax
   D. Empyema
   E. Granuloma

28. A histological examination of biopsy from the nose mucous revealed epithelioid cells, plasmocytes, Mikulicz cells, and eosinophilic (acidophilic, Russell's) bodies. What is the most likely diagnosis?
   A. *Rhinoscleroma
   B. Syphilis
   C. Tuberculosis
   D. Droplet infection
   E. Allergic rhinitis

29. A physical examination of a 5-year-old boy reveals the fauces and the tonsils enlarged, plethoric, and coated with irremovable whitish membranes. Which one of the following characterizes the changes in the fauces and tonsils?
   A. *Diphtheritic inflammation
   B. Caseous necrosis
   C. Fibrinous necrosis
   D. Croupous inflammation
   E. Purulent inflammation

30. A 49-year-old man, with 14 days history of acute lobar staphylococcal pneumonia in the left lower lobe of a lung, died of pulmonary and cardiac insufficiency.
A post-mortem revealed in the upper lobe of a right lung an oval cavity, approximately 5 cm in diameter, filled with pus and connected with bronchus. Which complication of acute pneumonia took place in this case?
A. *Abscess of the lung
B. Gangrene of the lung
C. Thromboembolia of a pulmonary trunk
D. Bronchiectasis disease
E. Acute bronchitis

31. An autopsy of an elderly male revealed a cavity with compacted walls filled with a thick, greenish liquid, which had a stinking odor. What is the most likely disease?
A. *Abscess of the lung.
B. Gangrene of the lung.
C. Infarct of the lung.
D. Cavern of the lung.
E. Tuberculoma of the lung.

32. A 62-year-old man died of croupous pneumonia. A post-mortem revealed in the pleural cavity an opaque liquid and a grayish membrane on visceral pleura. What is the most likely type of inflammation on the visceral pleura?
A. *Fibrinous inflammation
B. Catarrhal inflammation
C. Purulent inflammation
D. Granulomatous inflammation
E. Hemorrhagic inflammation

33. A 5-year-old child has a fever and pain at swallowing. A physical examination revealed enlarged, dark-red palatine tonsils. They were coated with a grey - yellow membrane which was intimately attached to the surface of the tonsils. Which kind of inflammation described in the tonsils?
A. *Diphtheritic inflammation
B. Croupous inflammation
C. Hemorrhagic inflammation
D. Purulent inflammation
E. Catarrhal inflammation

34. An autopsy of a dead body revealed 200 ml of a viscid yellow-green liquid in the abdominal cavity. What is the most likely form of exudate inflammation?
A. *Purulent inflammation
B. Serous inflammation
C. Fibrinous inflammation.
D. Hemorrhagic inflammation.
E. Ichorous inflammation

35. A post-mortem of a young male revealed congested, thickened, opaque, yellowish-green meninges. What type of exudative inflammation these changes are characteristic for?
A. *Purulent inflammation*
B. Serous inflammation
C. Hemorrhagic inflammation
D. Fibrinous inflammation
E. Catarrhal inflammation

36. A woman, with a history of her hands’ skin thermal burn, presented to physician painful blisters, filled with opaque liquid. What is the most likely type of inflammation?
A. *Serous inflammation*
B. Productive inflammation
C. Croupous inflammation
D. Granulomatous inflammation
E. Diphtheritic inflammation

37. A 44-year-old male had a skin biopsy procedure. Histological investigation of a tissue sample showed a caseous necrosis surrounded by infiltrate, consisted from lymphocytes, some giant cells and the growth of connective tissue. In addition, the endovasculitis was diagnosed. What is the most likely pathological process?
A. *Productive granulomatous inflammation.*
B. Productive interstitial inflammation.
C. Abscess.
D. Catarrhal inflammation.
E. Serous inflammation

38. A 7-year-old child, with a history of angina, presented with enlarged paratracheal, bifurcation and neck lymph nodes. A histological examination of his neck lymph node revealed the foci of necrosis, surrounded by lymphocytes, epithelioid cells and Pirogov-Langhans’ cells. Which one is the most likely pathology?
A. *Tuberculosis*
B. Sarcoidosis
C. Rhinoscleroma
D. Malleus
E. Syphilis

39. The histological examination of a lung tissue revealed a lesion presented with a locus of necrosis, surrounded by regular lines of epithelioid, lymphoid cells, plasma cells, macrophages and giant Pirogov-Langhans’ cells. Define a kind of inflammation?
A. *Tuberculosis inflammation*
B. Banal productive inflammation
C. Inflammation at a lepra
D. Exudative inflammation
E. Alterative inflammation

40. A 6-year-old child presented to infectious disease department with a body temperature 38°C, punctuated, bright red rash on a skin. The scarlet fever diagnosis is made. The fauces mucosa was brightly hyperemic, edematous; tonsils were mar-
kedly enlarged, with the dim yellowish-grayish centers and sites of black color. What inflammation underlies changes in fauces?
A. *Purulent-necrotic
B. Fibrinous
C. Hemorrhagic
D. Serous
E. Catarrhal
41. A rectoromanoscopy revealed edematous, reddish color mucosa of rectum and sigmoid colon, covered with a thick layer of mucus. Name the kind of inflammation?
A. *Catarrhal
B. Purulent
C. Mixed
D. Hemorrhagic
E. Fibrinous
42. A patient died with symptoms of the brain’s edema and the dislocation of the stem. A post-mortem revealed thickened, opaque, grayish-green color pia mater. Which pathological process took place in pia mater of meninges?
A. *Diffuse purulent leptomeningitis
B. Meningococcal leptomeningitis
C. Tuberculous leptomeningitis
D. Malignant arachnoendothelioma
E. Hydrocephalus
43. A 5-year-old child presented to a hospital with acute fever (up to 38°C), rhinitis, cough, lacrimation, and a patchy rash on the skin. His pharyngeal mucosa was edematous and hyperemic, with whitish maculae on the cheeks. What type of inflammation is the background of described changes?
A. *Catarrhal
B. Purulent
C. Fibrinous
D. Hemorrhagic
E. Serous
44. A 3-year-old child presented to a hospital with asphyxia. Examination of the larynx revealed whitish membranes, which occluded a lumen and easily extracted. Diphtheria was suspected. Which form of inflammation took place in the larynx?
A. *Croupous inflammation
B. Catarrhal inflammation
C. Diphtheroid inflammation
D. Serous inflammation
E. Purulent inflammation
45. A 47-year-old male presented with a sub-febrile temperature and enlarged lymph nodes. A biopsy investigation of a lymph node revealed numerous granulo-
mas with a caseous necrosis in the centers, surrounded by epithelioid cells, giant multinuclear Langhans' cells and lymphocytes. What is the most likely diagnosis?

A. *Tuberculosis  
B. Lymphogranulomatosis  
C. Lymphosarcoma  
D. Lympholeukemia  
E. Simple lymphadenitis

46. At a 45-year-old man the biopsy procedure of his nasal cavity’s mucosa was performed. The diagnosis of rhinoscleroma made. What cells are typical for the disease?

A. *Mikulicz’s cells  
B. Pirogov’s – Langhans’ cells  
C. Plasma cells  
D. Lymphocytes  
E. Schaumann’s bodies

47. An autopsy of a 53-year-old male showed many white, millet sized nodules in his lungs. A microscopic examination revealed granulomas with a necrosis in their centers and epithelioid, lymphoid, plasma cells, macrophages and numerous large multinucleated cells (Langhans' cells) on the periphery of a lesion. What is the most likely form of granuloma?

A. *Giant - cell granuloma  
B. Macrophagal  
C. Foreign body granuloma  
D. Epithelioid cells  
E. -

48. A patient presented to the hospital with combustion of his right hand. A physical examination revealed a desquamation of epidermis with blisters formation. The blisters were filled with opaque liquid. What most probable inflammation described in that case?

A. *Serous  
B. Purulent  
C. Catarrhal  
D. Putrefactive  
E. Fibrinous

49. A 43-year-old patient complains of hindered nasal breathing. Histological investigation of a biopsy of his nasal cavity mucosa revealed lymphoid cells, epithelioid cells, plasma cells and Mikulicz’s cells. What is the most likely diagnosis?

A. *Rinoskleroma  
B. Glanders (malleus )  
C. Tuberculosis  
D. Lepra  
E. Syphilis
50. A 54-year-old patient complains of complicated nasal breathing. A nasal mucosa was thickened. Histological investigation of a biopsy revealed Mikulicz’s cells, epithelioid cells, plasma cells, lymphoid cells, and hyaline sphere-like aggregates. What is the most likely diagnosis?
A. *Skleroma
B. Adenoviral rhinitis
C. Allergic rhinitis
D. Rhinoviral infection
E. Meningococcal nasopharyngitis

51. A sample of cervix uteri was taken for histological examination. A microscopic investigation revealed a tissue’s inflammatory infiltration with vascular walls involvement of small vessels, arteries and veins. In addition, there were also determined a presence of plasma cells, lymphocytes, epithelioid cells in the infiltrate and foci of sclerosis and hyalinosis of tissue. What is the most likely disease?
A. *Syphilis
B. Tuberculosis
C. Leukoplakia
D. Erosio colli uteri
E. Condyloma

52. A physical examination of tonsils and soft palate mucosa revealed white-grey color membranes, which are intimately attached to tissues underneath. An attempt to take out membranes results in formation of a deep tissue defect. Diagnose pathology on a mucosa of tonsils and a soft palate.
A. *Diphtheritic inflammation
B. Serous inflammation
C. Croupous inflammation
D. Purulent inflammation
E. Mixed inflammation

53. Histological investigation of a biopsy revealed a granuloma, consisted of lymphocytes, plasma cells, macrophages with foamy cytoplasm (Mikulicz’s cells) and numerous hyaline’s sphere-like aggregates. About what disease it is possible to think?
A. *Rinoskleroma
B. Lepra
C. Syphilis
D. Tuberculosis
E. Actinomycosis

54. A 40-year-old woman, with a history of the right palm’s burn, presented to her physician an acute pain, reddening and swelling of a palm. In a few minutes there was a bubble, filled with transparent yellowish liquid. The display of what pathological process the described changes are?
A. *Exudative inflammation
B. Traumatic edema

48
C. Alterative inflammation  
D. Proliferative inflammation  
E. Vacuolar dystrophy  

55. A 44-year-old man presented to the policlinic with a local pain in occipital area of a head and rise of a body temperature there. Gross investigation of a lesion zone revealed the cone-shaped cyanotic infiltration with a yellow-greenish apex, which rose above the surface of skin. What is the most likely diagnosis?  
A. *Furuncle  
B. Phlegmon  
C. Abscess  
D. Carbuncle  
E. Empyema.  

56. A skin sample was taken for histological research. Microscopical investigation revealed granulomas, consisted of macrophages’ knots with adding of lymphocytes and plasma cells. There were also determined large macrophages with fatty vacuoles, which contained packed layers of causative agents of a disease (Virchow's cells). For what disease the given description is characteristic?  
A. *Lepra  
B. Tuberculosis  
C. Syphilis  
D. Rinoskleroma  
E. Glanders (malleus)  

57. Histological investigation of a skin biopsy revealed granulomas, which consisted of epithelioid cells, surrounded mainly by T-lymphocytes. In addition, few giant multinucleated cells (Langhans' cells) were determined among epithelioid cells. The caseous necrosis was diagnosed within the centers of granulomas. There was lack of blood vessels. What is the most likely disease?  
A. *Tuberculosis  
B. Syphilis  
C. Lepra  
D. Rinoskleroma  
E. Glanders (malleus)  

58. A histological investigation of a liver biopsy revealed granulomas, consisted of plasma cells and lymphoid cells. Small vessels were characterized by endo - and perivasculitis. Some foci of caseous necrosis were also determined. Such granulomas are typical for:  
A. *Syphilis  
B. Tuberculosis  
C. Lepra  
D. Rinoskleroma  
E. Glanders (malleus)  

59. A young man had a removal of mucous membrane new growths in his nasal cavity. A histological investigation revealed diffuse lymphocytes, plasma cells and
macrophages infiltration. Name the type of inflammation.
A. *Inflammation with formation of polyps
B. Inflammation with formation pointed condyloma
C. Interstitial inflammation
D. granulomatous inflammation
E. Exudative inflammation

60. A 4-year-old child presented to his physician with a cold, high temperature, nausea and vomiting. He was hospitalized and died in two days. An autopsy revealed thickened, dim, edematous, congested, greenish-yellow pia mater of meninges. What variety of exudative inflammation developed in pia mater?
A. *Purulent
B. Catarrhal
C. Hemorrhagic
D. Fibrinous
E. Serous

61. A young man was operated because of phimosis. Histological investigation of a removed prepuce revealed polymorphic infiltrates, consisted of randomly located plasmocytes, epithelioid and lymphoid cells. The vasculitis was diagnosed in vessels. What disease such changes are characteristic for?
A. *Syphilis
B. Tuberculosis
C. Actinomycosis
D. Periarteritis nodosa
E. Lepra

62. Microscopic investigation an elderly man’s lungs revealed the foci of necrosis, surrounded by the bank of epithelioid cells and lymphocytes. Between lymphocytes and epithelioid cells the rounded giant cells, with a considerable quantity of nuclei, located on a periphery of a lesion were determined. Give the name for these changes:
A. *Tuberculous granuloma
B. Sarcoid granuloma
C. Syphilitic granuloma
D. Lepromatous granuloma
E. Scleromatous granuloma

63. A 6-year-old child presented to department of infectious diseases with acute pain in a throat, difficulty at swallowing, rise of body temperature up to 39°C and edema of neck. A gross oral investigation revealed enlarged, hyperemic tonsils, covered with plenty of yellow membranes, which intimately attached to the mucous membrane. An attempt to take off membrane results in deep, bleeding defect formation. What type of inflammation takes place?
A. *Diphtheritic
B. Purulent
C. Serous
D. Croupous  
E. Hemorrhagic  

64. A fragment of a stomach mucosa was taken for histology during endoscopy procedure. A microscopic investigation revealed intact mucous membrane, covered by mucus, thickened, edematous and hyperemic with a numerous tiny hemorrhages. Define the type of acute gastritis?  
A. *Catarrhal (simple)  
B. Erosive  
C. Fibrinous  
D. Purulent  
E. Necrotic  

65. An operatively removed appendix was sent to pathology department. Macroscopical investigation revealed markedly enlarged appendix. His serous membrane was dim, congested, covered by fibrin’s membranes. The appendix’ walls were thickened. On a cut section pus in the lumen was detected. Microscopical investigation showed a plethora of vessels, edema of all appendixes’ layers and diffuses infiltration by leucocytes. What is the type of inflammation?  
A. *Phlegmonous  
B. Apostematous  
C. Simple  
D. Superficial  
E. Gangrenous  

66. A 18-year-old girl had a neck lymphatic node removal at the biopsy procedure. Histological investigation showed nodules, consisted of banks of epithelioid, lymphoid cells and large multinucleated cells (Langhans' cells), located between them. In the centers of nodes a caseous necrosis was determined. What causative agent needs to be revealed in the necrosis zone for making final diagnosis?  
A. *Koch’s mycobacterium  
B. Mycobacterium leprae  
C. Treponema pallidum  
D. Rickettsia  
E. Fungi  

67. A young man complains of an itch and a skin reddening, which has appeared after shaving. Objectively: a cheek skin is hyperemic; the blisters, filled with a transparent liquid, were detected. What character of a liquid in blisters?  
A. *Serous exudate  
B. Transudate  
C. Purulent exudate  
D. Mucosal exudate  
E. Hemorrhagic exudate  

68. A 4-year-old boy presented to a hospital with pain in a throat at swallowing and malaise. A physical examination revealed grayish - whitish membranes on a pharynx and tonsils on a background of moderate edema and hyperemia. These mem-
branes were intimately attached to tissues underneath. What pathology the described changes testify to?
A. *Inflammation
B. Dystrophy
C. Necrosis
D. Metaplasia
E. Regenerative process

69. A 68-year-old man died from meningitis. An autopsy revealed thickened, congested, dim, edematous meninges (pia maters), which were saturated by creamy greenish-yellow exudate. Define the type of inflammation?
A. *Purulent
B. Serous
C. Fibrinous croupous
D. Fibrinous diphtheritic
E. Hemorrhagic

70. Biopsy of an oral cavity’s ulcer presented for a histological research. A microscopical investigation revealed areas of caseous necrosis, surrounded by plasmocytes, epithelioid, lymphoid cells and few giant multinuclear Pirogov-Langhans cells. There were also small vessels with signs of endo- and perivasculitis. Choose the most likely diagnosis.
A. *Syphilis
B. Tuberculosis
C. Lepra
D. Rinoskleroma
E. Glanders (malleus)

71. An autopsy of 32-year-old male revealed slightly swollen and hyperemic lungs, covered with numerous millet-like grayish nodules. Histological investigation determined lesions consisted of lymphoid, epithelioid and Langhans giant cells. What is the most likely diagnosis?
A. *Tuberculosis
B. Croupous pneumonia
C. Bronchopneumonia
D. Interstitial pneumonia
E. Bronchiectatic disease

72. An operatively removed appendix was sent for histological examination. Macroscopical investigation revealed thickened appendix. His serous membrane was dim, congested, with whitish, loose membranes; the lumen contained turbid, whitish-yellow exudate. Histological study showed the diffuse neutrophil’s infiltration of the appendix wall. Choose the most likely type of appendicitis.
A. *Phlegmonous
B. Gangrenous
C Simple
D. Superficial
E. Chronic
73. A 17 year old boy fell seriously ill, the body temperature rose up to 38.5°C, there appeared cough, rhinitis, lacrimation, nasal discharges. What inflammation is it?
A. *Catarrhal
B. Purulent
C. Fibrinous
D. Hemorrhagic
E. Serous
74. Histological examination of a skin tissue sampling revealed granulomas consisting of macrophagal nodules with lymphocytes and plasmatic cells. There are also some big macrophages with fatty vacuoles containing causative agents of a disease packed up in form of spheres (Virchow's cells). Granulation tissue is well vascularized. What disease is this granuloma typical for?
A. *Lepra
B. Syphilis
C. Rhinoscleroma
D. Tuberculosis
E. Glanders
75. A 5 year-old child is found to have meningococcal meningitis. He died of a brain edema shortly after admission to the hospital. An autopsy revealed that pia mater of a brain was thickened, opaque, green-yellowish, and edematous. Name the kind of inflammation in pia mater?
A. *Purulent
B. Serous
C. Hemorrhagic
D. Catarrhal
E. Putrescent
76. An autopsy of a 34-year-old man with a medical history of rheumatic fever revealed the epicardium, covered with grayish membranes, producing shaggy pattern. A removal of these membranes displayed edematous plethoric epicardium. What is the most likely kind of inflammation?
A. *Fibrinous pericarditis
B. Purulent pericarditis
C. Hemorrhagic pericarditis
D. Proliferative pericarditis
E. Catarrhal pericarditis
77. A post-mortem of a 47-years-old patient, who died of cardiopulmonary failure, revealed a cavity in his left lung. A lesion was 4 cm in diameter, with uneven walls, composed by lung tissue and filled with pus. What is the most likely diagnosis?
A. *Acute abscess
B. Chronic abscess
C. Cavernous tuberculosis
D. Echinococcus
E. Diffuse fibrosing alveolitis

78. A male with purulent otitis died on the 9th day at hospital of a brain oedema. An autopsy revealed a cavity at the temporal region of his left hemisphere. A lesion had uneven rough inner walls and was filled with yellow-greenish thick fluid. The outer walls of the cavity were presented with the cerebral tissues. Name the most likely pathological process?
A. *Acute abscess
B. Colliquative necrosis
C. Phlegmon
D. Empyema
E. Chronic abscess

Immunopathological processes

1. A 15 year old boy died of the heart failure. He had a history of rheumatic heart disease in his medical record. Histological investigation of the left auricle of the heart revealed the rheumatic granuloma (the Aschoff-Talalayev body) with a central fibrinous focus associated, with a perimeter plasma cells, macrophages and giant cells. Which of following best describe the type of immune response?
A. *Cell mediated (Type IV, delayed hyper sensitivity reaction)
B. Anaphylactic (Type I, immediate)
C. Cytolytic (Type II, immediate)
D. Immune complex (Type III, immediate)
E. Reaction of transplant rejection.

2. A 4-yers-old boy presents with multiple malformation of craniofacial bones. He died soon due to sepsis, resulted from bronchopneumonia. Blood test revealed the immunoglobulins within normal range. At autopsy the thymical aplasia was identified. Name the mane cause of death.
A. *Cellular immunodeficiency
B. Combined immunodeficiency
C. Secondary immunodeficiency
D. Acute leukemia
E. Chronic intoxication

3. A 48-year-old women with asthma presents with viral respiratory infection. The infection caused a status asthmaticus with a fatal outcome. Histological investigation of lung tissue revealed a contracted bronchus and a luminal plug containing mucus and cell debris. The submucosa was edematous and contained a mixed inflammatory infiltrate, including a lot of eosinophils and degranulated must cells. What is the mechanism of hypersensitivity presented in this case?
A. *Humoral immunity (Type I, anaphylactic reaction)
B. Inflammatory reaction
C. Autoimmune reaction
D. Immune complex reaction (Type III of reaction)
E. Cell-mediated immunity (Type IV of reaction)
4. A young man presents with the enlargement of the regional lymph nodes next to his inflamed wound. Histological investigation of the lymph node biopsy revealed the increased number of macrophages, lymphocytes and lymphoid follicles within cortex zone. Plasma cells number also increased. These alterations are most likely result of:
A. *Antigen stimulation
B. The acquired insufficiency of lymphoid tissue (secondary immunodeficiency state)
C. Hereditary immunodeficiency state
D. Neoplastic transformation
E. Hypersensitivity reaction
5. A newborn died after 3 days of life, as a result of a lethal outcome of intrauterine pneumonia. At autopsy a newborn is sound have a great reduction of his thymic weight and it’s sizes. Histological investigation of thymus revealed the unclear boundary between cortex and medulla zone as a result of lymphocytes amount reduction. A few Hassall corpuscles were found. They were focally keratinized and had concentric aggregated of epithelial cells. The gland was also exhibited lobe atrophy and sclerosis. What pattern of reaction did the thymus demonstrate?
A. *Accidental thymus transformation (involution)
B. Thymus atrophy
C. Thymus hypotrophy
D. Thymus aplasia (agenesis)
E. Thymus neoplasia
6. A 3-month-old child died because of sepsis. An autopsy revealed thymic hypoplasia, both sizes and mass of spleen reduction. Histologically, in spleen there was lack of the periarterial follicular T-zone and remarkable absence of cells at a red spleenyp pulp. Lymph nodes investigation showed also absence of cells within paracortical (T-cells area). B-cells areas in immune system organs looked normal. What term best characterizes described above changes?
A. Di George’s syndrome
B. Combined immunodeficiency syndrome
C. Bruton’s disease (X-linked agammaglobulinemia)
D. Accidental thymus transformation
E. Acquired immunodeficiency syndrome (AIDS)
7. A morphological investigation of a kidney graft revealed a diffuse stromal infiltration by lymphocytes, plasmocytes, lymphoblasts, plasmablasts, and also a necrotic arteritis. What pathology has developed in a graft?
A. *Immunological graft rejection
B. Glomerulonephritis
C. Ischemic kidney damage
D. Tubular necroses
E. Pyelonephritis
8. An 8-year-old girl, with a history of acute tonsillitis 3 weeks before the application, presented with nephrotic syndrome (proteinuria, haematuria and cylindruria). These testify the glomerular basal membrane’s lesion. What is the mechanism of the basal membrane pathology?
A. * Immune complex mechanism
B. Granulomatous mechanism
C. Antibody-mediated mechanism
D. Reagin-mediated mechanism
E. Cytotoxical mechanism

9. At 46-year-old patient with autoimmune gastritis a biopsy was taken. Histologically, there was an infiltration by lymphocytes and macrophages of a gastric mucous membrane. What type of hypersensitivity presented in that case?
A. * Type IY (cell-mediated hypersensitivity)
B. Type II (reagin type)
C. Type II (antibody-mediated cytotoxicity)
D. Type III (immune complex cytotoxicity)
E. Type V (granulomatous)

10. Histological investigation of a lymph node revealed a considerable quantity of the enlarged lymphoid follicles with big germinal centers, and plenty of mitotic figures. What pathology these changes are characteristic for?
A. *Antigen stimulation with follicle hyperplasia
B. Atrophy of lymphoid tissue
C. Lymphosarcoma
D. Lymphogranulomatosis
E. Lympholeukemia

11. A child had a subcutaneous injection of tuberculin for a testing. Twenty-four hours later a physical examination revealed the expressed hyperemia and induration of tissues in the place of injection. What was the mechanism of these changes?
A. *Cellular cytotoxicity
B. Reagin cytotoxicity
C. Antibody cytotoxicity
D. Granulomas formation
E. Immune complex

12. A 6-year-old child had the Mantoux test. In 3 days there was an inflammatory induration and a reddening of a skin 15 mm in diameter. That was considered as the positive test. What type of hypersensitivity reaction presented in that case?
A. *Hypersensitivity of slow type
B. Immune complex hypersensitivity
C. Complement-mediated cytotoxicity
D. Hypersensitivity immediate type
E.

13. Physical examination of a pregnant woman with an Rh-negative blood revealed a high level of antierythrocyte antibodies. The cutaneous flap of her Rh-positive
husband applied for depression of antibodies. In 2 weeks a flap was rejected. Microscopical investigation showed a disturbance of blood circulation, edema and cellular infiltration mainly by lymphocytes, neutrophils and macrophages. What is the most probable pathology?
A. *Transplantation immunity
B. Hypersensitivity reaction immediate type
C. Hypersensitivity reaction slow type
D. Granulomatous inflammation
E. Interstitial inflammation

14. A 3-year-old child died of an acute destructive staphylococcal pneumonia. Microscopically, thymus mass reduced to 3,0 gr. Microscopical investigation of thymus showed reduction of lobules, considerable decline of lymphocytes quantity, stromal collapse, and inversion of layers with cystic enlargement of the Hassall’s bodies. What is the most likely diagnosis?
A. *Accidental thymus involution
B. Thymomegaly
C. Thymus hypoplasia
D. Thymus dysplasia
E. Thymus agnenesia

15. The experiment animal with a history of previous sensibilization received the next subcutaneous dose of antigen. In the place of injection a fibrinous inflammation with alteration of vessels walls, matrix and fiber structures of connective tissue (mucoid and fibrinoid swelling) and fibrinoid necrosis developed. What immunological reaction takes place?
A. *Hyperse
B. Hypersensitivity reaction slow type
C. Reaction of transplantation immunity
D. Normergic reaction
E. Granulomatosis

16. A man with a history of bronchial asthma died of asphyxia. Microscopical investigation of lungs revealed excess of mucus with lots of eosinophils in the bronchial lumen, sclerosis of interalveolar septas and alveoli dilatation. What mechanism of hypersensitivity reaction presented in that case?
A. *Reagin reaction
B. Cytotoxic reaction
C. Immune complex reaction
D. Cytolysis, conditioned by lymphocytes
E. Granulomatosis

17. The infiltration anesthesia by ultracain with adrenaline solution has been done to a young man. Then redness, edema of the skin with itchy blisters suddenly developed. What type of hypersensitivity took place?
A. *Anaphylaxis
B. Cytotoxicity
C. Immune complex damage
D. Hypersensitivity slow type  
E. Granulomatosis  

18. A 33-year-old patient with a history of acute tonsillitis presented with the urinary syndrome (haematuria, proteinuria and leukocyturia). Kidneys biopsy revealed an intracapillary proliferative glomerulonephritis. Electronic microscopy determined large subepithelial deposits. What is the pathogenesis of this disease?  
A.*Immune complex mechanism  
B. Atopy  
C. Cytotoxic, cytolytic action of antibodies  
D. Cellularly caused cytolysis  
E. Granulomatosis  

19. A 10-month-old child has developed pneumonia. Clinical and laboratory tests revealed absence of mature B-lymphocytes in peripheral blood and in B-zones of lymph nodes, acute reduction of immunoglobulins in serum. In peripheral blood a total quantity of lymphocytes was normal. What kind of an immunodeficiency developed in that case?  
A. *Brutone sindrome  
B. Neselof syndrome  
C. Severe combined immunodeficiency  
D. Di-George syndrome  
E. Viskotta-Oldrich syndrome  

20. A patient with a history of serious radioactive irradiation had bone marrow transplantation. In 2 months a rush on the skin and diarrhea developed. Clinical and laboratory tests showed hepatic insufficiency, local necrosis of the skin’s epithelial cells, intestinal crypts and liver parenchymal cells. What was the reason for symptoms aggravation?  
A. *”Graft against the owner” disease  
B. Sepsis development  
C. An acute graft rejection  
D. A chronic graft rejection  
E. An exacerbation of a chronic hepatitis  

21. A 7-month-old child died of severe pneumonia complicated by sepsis. A post-mortem revealed an absence of thymus. In lymph nodes there were no lymphoid follicles and cortical substance, in a spleen follicles were markedly reduced, germinal centers were absent. What is the most likely diagnosis?  
A. *Thymus agenesia  
B. Thymus aplasia  
C. Thymus atrophy  
D. Thymus hypoplasia  
E. Acidental thymus involution  

22. A 1-year-old child died of a relapsing pneumonia. A post-mortem revealed hypoplasia of a thymus and peripheral lymphoid tissue, atrophy of cerebellum cortex,
angioeletasis of bulbar conjunctiva. Immunohistochemistry revealed decreased level of immunoglobulins. What is the most likely disease?
A. * Louis-Bar’s syndrome
B. Di-George syndrome
C. Nezelof syndrome
D. West’s syndrome
E. Brutone syndrome

23. A 20-year-old woman died of postnatal sepsis. A post-mortem revealed enlarged congested spleen with abundant curettage from a cut section. Microscopical investigation showed hyperplasia and infiltration by plasmocytes of the red pulp and spleen’s follicles. The red pulp was also rich with macrophages. What pathology resulted in spleen’s alteration?
A. * Antigenic stimulation of an organism
B. Hereditary insufficiency of a peripheric lymphoid tissue
C. Reaction of hypersensitivity of immediate type
D. Reaction of hypersensitivity of the slowed type
E. Autoimmunization

24. Microscopical investigation of arterioles showed plasmatic saturation, mucoid and fibrinoid swelling, fibrinoid necrosis of walls, diffuse infiltration by lymphocytes, plasmocytes and monocytes. In addition, the focal proliferation of histiocytes, endotheliocytes and pericytes were determined. The final diagnosis was the “periarteritis nodosa”. What type of inflammation took place in arterioles?
A. * Acute immune inflammation
B. Acute not immune inflammation
C. Focal exudative inflammation
D. Diffusive exudative inflammation
E. Fibrinous inflammation

25. During operation of kidney transplantation in 15 minutes after vascular anastomoses application, transplant became flabby, cyanotic and spotty; the pulsation was absent. Microscopical investigation of a kidney specimen revealed periendothelial accumulation of neutrophils in glomeruli vessels. In addition there were also a thrombosis and necrosis of some glomeruli. Specify the type of graft rejection.
A. *Hyperacute rejection
B. Accelerated rejection
C. Acute interstitial rejection
D. Acute vascular rejection
E. Chronic rejection

26. A 30 year old woman has applied a lipstick with a fluorescent substance for a long time. Then she got a limited erythema and slight peeling on her lip border, later there appeared transversal striae and cracks. Special methods of microscopic examination of the affected area helped to reveal sensibilized lymphocytes and macrophages in the connective tissue; cytolysis. What type of immunological hypersensitivity was developed?
A. *IV type (cellular cytotoxicity)
B. I type (reaginic)
C. III type (immune complex cytotoxicity)
D. II type (antibody cytotoxicity)
E. Granulomatosis

27. 48 hours after tuberculeine test (Mantoux test) a child had a papule 10 mm in diameter on the spot of tuberculeine injection. What hypersensitivity mechanism underlies these changes?
A. *Cellular cytotoxicity
B. Granulomatosis
C. Antibody-dependent cytotoxicity
D. Anaphylaxy
E. Immunocomplex cytotoxicity

**Adaptation and compensation.**

1. A young male complains of diminishing leg muscles in size and volume as a result of the complicated femoral fracture. The innervations of the muscles was not lost. Name the type of atrophy?
A. *Disuse atrophy
B. Degeneration atrophy
C. Ischemic atrophy
D. Atrophy due to compression
E. Atrophy due to chemical and physical influence.

2. At autopsy a male is found to have big kidneys with marked dilatation of the renal pelvis and calyces filled with transparent liquid. A thinning of the renal parenchyma accompanied above lesions. Which is the most likely finding?
A. *Hydronephrosis
B. Glomerulonephritis
C. Amyloidosis
D. Tuberculosis
E. Pyelonephritis

3. An autopsy of an elderly male revealed the atherosclerosis of the brain arteries accompanied with the thinning of the brains cortex. Name the cause of the atrophy?
A. *Ischemia
B. Compression
C. Chemical and physical factors
D. Loss of innervations
E. Decreased workload

4. A 62-yer-old male died at the hospital after developing heart failure. At autopsy the weight of the heart was 500gm, with thickened right ventricular wall and dilated chamber. Name the alteration at the right ventriculum.
A. *Hypertrophy
B. Hyperplasic alteration due to inflammation
C. Metaplasia  
D. Atrophy  
E. Sclerosis  

5. A young male presents with a large and lacerated wound covered with pus. The peripheral zone of the tissue defect was filled with large amount of granulation tissue. Name the type of healing?  
A. *Healing by first intention  
B. Healing by second intention  
C. Healing under a scab  
D. Covering a tissue defect with epithelial cells  
E. Organization followed by scarring  

6. An autopsy revealed marked enlargement of a kidney. Gross examination of a kidney’s section presented with dilation of both renal pelvis and calyces resulted from renal stones. What from diagnoses is most faithful?  
A. *Hydronephrosis  
B. Simple cysts  
C. Pyelonephritis  
D. Benign nephrosclerosis  
E. Polycystic kidney disease  

7. A physical investigation of an elderly man with history of esophagus cancer with stenosis but without metastasis revealed an atrophy of skeletal muscles and subcutaneous fat tissue. Skin was grayish-brown color, an epidermis was thinned, and size of the heart decreased. Myocardium and liver also had a brown coloring. What is the most likely diagnosis?  
A. *Alimentary cachexia.  
B. Myasthenia.  
C. Cancer cachexy  
D. Brown atrophy.  
E. The Addisona Illness  

8. At the man with long history of smoking the bronchial biopsy is taken. Microscopical investigation showed the thickened mucous membrane with chronic inflammation and transformation of ciliated epithelium into stratified one. What pathology such changes are characteristic for?  
A. *Metaplasia  
B. Hyperplasia of epithelium  
C. Planocellular cancer  
D. Leukoplakia  
E. Hypertrophy of epithelium  

9. A patient with a history of frequent hemorrhoid bleeding died of acute myocardial infarction. A post-mortem revealed a red, succulent bone marrow of a hip diaphysis. What pathology developed in a bone marrow?  
A. *Compensatory hyperplasia  
B. Vicarious hypertrophy
C. Hypertrophy excrescences
D. Hormonal hyperplasia
E. Work hypertrophy

10. A 59-year-old patient with a history of prostate glandular hyperplasia operated in the urology. An operation revealed a thickening of a urinary bladder wall up to 1 cm. It may be caused by:
A. *Work hypertrophy
B. Vicarious hypertrophy
C. Hormonal hypertrophy
D. Hormonal hyperplasia
E. Protective hyperplasia

11. A 7-year-old child presented with a poliomyelitis. His somatic muscles are weak, their volume is reduced, and skin is dry and pale. Choose the most likely pathology, which takes place in the soft tissues?
A. *Atrophy.
B. Hypertrophy.
C. Hyperplasia.
D. Metaplasia.
E. Hypoplasia.

12. An elderly man with a long history of smoking presented with a cough accompanied by viscid mucous sputum, weakness after the insignificant physical activity and pale color of the skin. He lost 12,0 kg of weight for the last two months. Microscopical investigation of endoscopic biopsy showed squamous cell carcinoma. What pathology preceded the tumor formation?
A. *Metaplasia.
B. Hypoplasia.
C. Hyperplasia.
D. Necrosis.
E. Sclerosis.

13. A 48-year-old patient with a history of a hypertensive disease died of heart failure. An autopsy revealed an enlarged heart with dilated chambers. A thickness of the left ventricle wall was 2,5cm. Microscopically myocardial cells were considerably enlarged, with fatty dystrophy and hyperchromic barrel-shaped nuclei. What is the most likely pathology diagnosed in a heart?
A. *Excentric hypertrophy
B. Myocarditis
C. Concentric hypertrophy
D. Angiogenic cardiosclerosis
E. Cardiomyopathy

14. A 60-year-old man has a history of chronic bronchitis. Histological investigation of bronchus biopsy showed thinned mucous membrane, cystic transformation of mucous glands, and replacement of prismatic epithelium on stratified one. What of the listed pathological processes the most likely?
A. *Metaplasia.
B. Hyperplasia.
C. Heterotopia.
D. Heteroplasia.
E. Displasia.

15. Microscopical investigation of tissue from the edge of a chronic gastric ulcer showed necrosis, granulation tissue, abundant development of connective tissue and metaplasia of epithelium. What type of pathology takes place in that case?
A. *Pathological regeneration with disorder of phases.
B. Hypertrophy.
C. Physiology regeneration.
D. Reparative regeneration (substitution).
E. Reparative regeneration (restitution).

16. At a patient with a chronic cystitis biopsy of urinary bladder mucosa was taken. Microscopical investigation revealed a transitional epithelium with foci of stratified epithelium without keratinization. What process underlies the described changes in an epithelium?
A. *Metaplasia
B. Dystrophy
C. Hyperplasia
D. Dysplasia
E. Hyperkeratosis

17. After traumatic damage of a liver, subsequently there was complete hepatic structural and functional restoration. Name the type of regeneration?
A. *Restitution
B. Incomplete regeneration
C. Pathological regeneration
D. Physiological regeneration
E. Substitution

18. At a patient with chronic bronchitis biopsy of bronchus mucous membrane was taken. Microscopical investigation revealed the areas of stratified epithelium without keratinization. What pathology takes place in the mucous membrane of bronchus?
A. *Metaplasia
B. Atrophy
C. Hyperplasia
D. Dysplasia
E.

19. A 42-year-old woman presented to the gynecologist with acyclic, profuse hemorrhagic discharge. A histological investigation of a curettage material revealed increased quantity of glands and their cystic dilation. What is the most likely diagnosis?
A. *Endometrial hyperplasia
B. Endometrial atrophy  
C. Endometrial hypertrophy  
D. Metaplasia  
E. Organization  

20. A post-mortem of a 64-year-old woman with a long story of hypertensive disease revealed considerably diminished, dense kidneys with a fine-grained surface. What pathology such changes are characteristic for?  
A. * Blood insufficiency atrophy  
B. Atrophy from pressure  
C. Senile atrophy  
D. Dysfunctional atrophy  
E. Hypoplasia  

21. An elderly man died of cardiac insufficiency. Twenty years ago he had the right lung pulmonectomy because of a cyst. A post-mortem revealed an enlarged left lung. Diagnose pathology in the left lung.  
A. *Vicarious hypertrophy  
B. Neurohumoral hypertrophy  
C. Dysfunctional atrophy  
D. Dyscirculatory atrophy  
E. Neurotic atrophy  

22. A 42-year-old man had a lower extremity amputation. After a while painful knots appeared in a stump. Microscopical investigation revealed amputation neuromas. What pathology such changes are characteristic for?  
A. *Pathological regeneration  
B. Complete reparative regeneration  
C. Inflammation  
D. Incomplete reparative regeneration  
E. Metaplasia  

23. A 38-year-old woman presented with complaints about the frequent uterine bleeding. The diagnostic curettage was performed. A histological investigation of a curettage material revealed increased quantity of coiled glands, some of them were with cystic dilation. What pathology these changes are characteristic for?  
A. *Glandular-cystic hyperplasia.  
B. Atrophy  
C. Metaplasia  
D. Dysplasia  
E. Hypertrophic vegetations  

24. A man had the right lung pulmonectomy because of a tumor 7 years ago. Then the volume of the left lung increased on 40%. What process developed in the left lung?  
A. *Vicarious hypertrophy  
B. Neurohumoral hypertrophy  
C. False hypertrophy
D. Work hypertrophy
E. Hypertrophic vegetation
25. A histological investigation of an endometrium revealed coiled extended glands with ‘saw-‘ and a ‘spin-like’ pattern. A stromal proliferation with hyperplasia of its cells was also determined. What is the most likely diagnosis?
A. * Glandular hyperplasia of endometrium
B. Acute endometritis
C. Leiomyoma
D. Hydatidiform mole
E. Placental polyp
26. A patient presented with small knots on a thin peduncle in his rectum. Microscopic investigation of the biopsy material revealed a growth of connective tissue and glands. What is the most likely pathology?
A. *Hyperplastic polyp.
B. Hypertrophy.
C. Metaplasia.
D. Atrophy.
E. Sclerosis.
27. The biopsy of central bronchus mucosa of miner is taken. Microscopically, there is a transformation of a cylindrical epithelium to the mature stratified one. What pathology such changes are characteristic for?
A. * Metaplasia
B. Hyperplasia
C. Leucoplakia
D. Dysphasia
E. Reparative regeneration
28. The biopsy of a vaginal portion of uterus cervix is taken. There is an augmentation of quantity of cells, rising of mitotic activity and alteration of polarity of cells in basal part of an epithelial layer. What pathology such changes are characteristic for?
A. * Dysphasia
B. Metaplasia
C. Atrophy
D. Acanthosis
E. Hyperplasia
29. A 40-year-old man has a keloid scar after a treatment of the left arm burn. This process may be an example of:
A. *Pathologic regeneration
B. Hyperplasia
C. Metaplasia
D. Reparative regeneration
E. Vicarious hypertrophy
30. A 70-years-old patient admitted to a hospital with acute lung abscess. He sud-
denly died of progressing cardiopulmonary failure shortly after admission. An autopsy revealed an enlargement of mediastinal lymph nodes. They were pink-reddish and elastic. A spleen was enlarged and flabby with plentiful scrape of a pulp. What was the cause of lymph node and spleen’s alterations?

A. Protective hyperplasia  
B. Compensatory hypertrophy  
C. Hormonal hyperplasia  
D. Venous congestion  
E. Purulent inflammation

31. A 70-year-old patient had a surgery due to severe prostatic hyperplasia. A surgery revealed a thickening of urinary bladder’s wall up to one cm. What is the most likely cause of this thickening?

A. *Workload hypertrophy  
B. Vicarious hypertrophy  
C. Hormonal hypertrophy  
D. Hormonal hyperplasia  
E. Compensatory hypertrophy

32. A patient with a long history of the chronic cystitis had a cystoscopy and biopsy was performed. Histological examination of biopsy material revealed chronic cystitis and foci of transitional epithelium replaced by squamous - cell non - keratinized epithelium. These foci were the manifestations of:

A. *Metaplasia  
B. Degeneration  
C. Hyperplasia  
D. Dysplasia  
E. Hyperkeratosis

**Epithelium neoplasms**

1. A teenager male presents with slowly enlarging, painless nodule on his right hand’s skin. Microscopic examination of removed lesion revealed an increased number of epithelial layers, with a stroma underneath, with developed a papillomatous pattern. Identify most likely type of atypia?

A. * Tissue  
B. Cellular.  
C. Metabolic.  
D. Functional.  
E. Hystochemical

2. A 35 year-old female with a family history of colon cancer inquires about screening. Colonoscopy revealed a tumor and a tissue sample was taken for histology. Microscopic investigation has shown cells were arranged in glandular-like pattern. They exhibit cell pleomorphism, atypia, invasive growth and pathologic mitosis’s. What is the most likely diagnose?

A. *Adenocarcinoma
B. Basal-cell carcinoma
C. Solid carcinoma
D. Mucous carcinoma
E. Undifferentiated carcinoma

3. A 50-year-old female is found to have a urinary bladder neoplasm. Biopsy investigation revealed that tumor consists of thin, branching out papillae, covered with few layers of transitional cell epithelium. What is the most likely diagnose?
A. *Papilloma
B. Basal cell
C. Transitional cell carcinoma
D. Squamous cell carcinoma
E. Fibroadenoma

4. A 60-year-old postmenopausal woman has been feel unhealthy and weak for about 3 month. A gross investigation of her cervix uteri revealed a lesion and a biopsy from this area was obtained. Microscopically, a lesion composed of atypical squamous cell, many of them displayed pathological mitoses. Keratin pearl formation was also observed histologically. What is the most likely diagnose?
A. * Squamous cells carcinoma with keratinisation
B. Transitional cell carcinoma
C. Squamous cells without keratinisation
D. Adenocarcinoma
E. Anaplastic carcinoma

5. A 48-year-old woman complains to her doctor of uterine bleeding. Endometrial biopsy investigation revealed a presence of gland-forming cells with enlarged hyperchromic nuclei, cell atypia, abnormal mitoses. These cells were also determined at myometrium. What term most correctly identifies this pathological process?
A. * Adenocarcinoma of uterus.
B. Adenomatous endometrial hyperplasia.
C. Acute endometritis.
D. Placental polyp.
E. Chorionepitelioma of uterus.

6. A 39-year-old woman presented in oncology with a stomach cancer. Physical investigation revealed metastatic tumors in ovaries (Krukenberg tumors). What is most likely pattern of spread in that case?
A. *Lymphatic retrograde
B. Lymphatic orthograde
C. Gematogenous
D. Implantation
E. Along epithelium-lined surfaces

7. A 23-year-old female decided to have a surgeon’s removal of a small nodule at her leg’s skin. An operation material delivered to pathology department. A histological examination of a new growth has shown that parenchyma has been
formed of integumentary epithelium with an increased amount of layers. Stroma together with epithelial proliferation forms papillae. What is the most likely form of atypism?
A. *Tissue.
B. Cellular.
C. Histochemical.
D. Functional.
E. Metabolic.
8. A 45-year old male with a family history of a gastric cancer inquires about screening. A gastrosopic examination of a patient revealed a pedunculated tumor mass 1.5 cm in diameter in the area of the lesser curvature of stomach. What kind of growth does the tumor have?
A. *Exophytic.
B. Expansive.
C. Infiltrating.
D. Appositional.
E. Endophytic.
9. A 70 year-old male is found to have a nodule at his right bronchus mucous membrane. A microscopic examination of the biopsy material from the tumor revealed the cell and tissue atypism, keratin pearls formation. What is the most likely pathologic process at biopsy material?
A. *Malignant tumor.
B. Benign tumor.
C. Hyperplasia.
D. Metaplasia.
E. Hypoplasia.
10. A 57-year-old postmenopausal woman is found to have a chronic nonhealing lesion at her portio vaginalis uteri. A biopsy was taken from this area. A histological examination of the biopsy material revealed a cellular atypism within epithelial layer, but basic membrane was unchanged. What is the most likely diagnosis?
A. *Carcinoma in situ.
B. Erosion.
C. Adenocarcinoma.
D. Papilloma.
E. Endometriosis.
11. A 15-year-old boy is found to have a small, dense, nodule at his right forearm skin. Grossly it had a papillary surface, which looked like a cauliflower. Microscopically, the tumor consists of many papillae. Parenchyma formed of integumentary epithelium with an increased amount of layers. The polarity of epithelial cells, their stratification and membrane wholeness are preserved. A connective tissue forms a stroma within a center of papillae. What is the most likely diagnosis?
A. *Papilloma.
B. Fibroma.
C. Adenoma.
D. Fibroadenoma.
E. Cystadenoma.

12. A 66-year-old male lost his appetite and has been losing his weight for about 5 months. X-ray study revealed a stomach neoplasm. Histological examination of a tumor’s biopsy showed a great amount of signet-ring cells. Name the histological variant of cancer.
A. *Adenocarcinoma.
B. Solid carcinoma.
C. Sarcoma.
D. Mucinous carcinoma.
E. Carcinoid.

13. A 45-year-old woman has a small tumor of her left breast. Histological examination of a breast biopsy revealed poorly differentiated atypical epithelial cells. They formed trabecules separated from one another by connective tissue. The cells and stroma proportion was approximately 1:1. What is the most likely histological variant of the cancer.
A. *Solid carcinoma.
B. Adenocarcinoma.
C. Epidermoid carcinoma.
D. Scirrhous fibrocarcinoma.
E. Small cell carcinoma.

14. Histological investigation of a node in the removed mammary gland revealed complexes of atypical polymorphic epithelial cells, which had various sizes and forms. There were clear spaces at the centers of complexes. The cells had large nuclei, with presence of atypical mitoses. Diagnose the pathology.
A. *Adenocarcinoma
B. Squamous cell nonkeratinous carcinoma
C. Solid carcinoma
D. Fibroadenoma of breast
E. Nondifferentiated polymorphocellular carcinoma

A. *Mucinous carcinoma
B. Adenocarcinoma
C. Sarcoma
D. Solid carcinoma
E. Carcinoid

16. A 34-year-old woman presented with a hoarseness of a voice. A laryngoscopy revealed a tumour of a larynx. The neoplasm had a grey-white color and papillary surface. Microscopical investigation showed a new growth of a connecting tissue,
covered by a stratified epithelium with the marked keratinization. Cellular atypia was absent. Most likely the tumor is:
A. *Papilloma
B. Fibroma
C. Polyp
D. Angioma
E. Angiofibroma
17. A microscopical investigation of a 50-year-old woman’s endometrial curettage material with the clinical diagnosis « ovarian – menstrual cycle’s disorder » revealed growth of glandular structures. These glands consisted of polymorphic cells with hyperchromic nuclei and mitoses figures. For what pathology the revealed histological changes are characteristic?
A. *Adenocarcinoma of uterus
B. Placental polyps
C. Acute endometritis
D. Glandular hyperplasia of endometrium
E. Chorioepithelioma of uterus
18. A 52-year-old female patient with a history of the chronic bronchitis and pneumosclerosis presented to the hospital for biopsy diagnostics. A microscopical investigation of a left bronchial’s mucous from the suspicious site revealed cellular and tissue atypia. There were also found some structures in the form of “cancer pearls”. What is the most likely pathology presented in that case?
A. * Squamous cell keratinous carcinoma of bronchus
B. Chronic polypous bronchitis
C. Bronchiectasis
D. Sharp bronchitis
E. Squamous cell metaplasia of mucous of bronchus
19. Histological investigation of a bronchial biopsy revealed a tumour which is constructed from nests of stratified epithelium’s atypical cells with some characteristic "pearls". What is the most likely diagnosis?
A. *Squamous cell keratinous carcinoma
B. Squamous cell nonkeratinous carcinoma
C. Solid carcinoma
D. Mucous carcinoma
E. Scirrhous carcinoma
20. A microscopical investigation of a breast tumour revealed that the neoplasm was constructed of undifferentiated atypical epithelial cells. These cells formed trabecules, separated by layers of a connective tissue. A parity of cells and stroma was approximately 1:1. Name a histological variant of a cancer.
A. *Solid carcinoma
B. Adenocarcinoma
C. Squamous cell carcinoma
D. Fibrocarcinoma
E. Small cell carcinoma
21. Histological investigation of the removed breast node revealed different sizes and the form complexes of atypical polymorphic epithelial cells among abundant stroma. The complexes had a clear space center. Cells were characterized by large nuclei, the increased number of nucleoli, nucleoli organizers and presence of atypical mitoses. What is the most likely diagnosis?
A. *Adenocarcinoma
B. Fibroadenoma of breast
C. Solid carcinoma
D. Squamous cell nonkeratinous carcinoma
E. Nondifferentiated polymorphic cells carcinoma
22. A post-mortem of a 59-year-old man, who died of a lung cancer, revealed plural metastases. What kind from the listed below metastases it is possible to regard as implantation (contact) one according to a mechanism of development?
A. *Multiple tumorous nodules of pleura
B. Metastasis in prebronchial, paratracheal lymphatic knots
C. Metastasis in a brain
D. Metastases in an adrenal gland
E. Invasion of tumor from bronchus in an esophagus
23. A 55-year-old man presented to a hospital with the atelectasis of a right lung’s middle lobe, resulted from the obturation of a midlobar bronchus by a node of soft tissues. A bronchoscopy revealed a new growth within an obturation zone. A microscopical investigation of a biopsy sample showed the growths of an atypical glandular epithelium with pathological mitoses, which spread in tissues underneath and a cartilage. What is the most likely disease?
A. *Bronchogenic carcinoma of lungs
B. Dysplasia of epithelium of bronchus
C. Inflammatory polyps
D. Deforming bronchitis
E. Sarcoma of bronchus
24. A 65-year-old woman presented to the hospital with the menopausal bleeding. At histological investigation revealed in the curettage material from the mucosa of her cervix uteri revealed a new growth of atypical epithelium with formation so-called "cancer pearls ". What is the most likely diagnosis?
A. *Squamous cell keratinous carcinoma
B. Adenocarcinoma
C. Squamous cell nonkeratinous carcinoma
D. Mucous cancer
E. Nondifferentiated carcinoma
25. A post-mortem of a 48-year-old woman with a history of an operated stomach tumour in the past revealed markedly enlarged, dense, whitish color ovary. Histological investigation of the ovarian tissue showed utterly atypical epithelial cells,
placed among layers and cords of a connective tissue. What if the most likely disease?
A. *Krukenberg's carcinoma of ovary
B. Serous cystadenocarcinoma
C. Pseudomucinous cystcarcinoma
D. Malignant thecoma
E. Malignant granular cell tumor
26. A histological investigation of a lung biopsy revealed atypical cells which form plural acinar structures and produce mucus. What histological form of a cancer of lungs takes place at the patient?
A. *High differentiated adenocarcinoma
B. Low differentiated adenocarcinoma
C. Nondifferentiated carcinoma
D. Differentiated
E. Glandular squamous cell carcinoma
27. A gastroscopy of a 37-year-old man revealed a tumorous formation 1,5 cm in diameter in a small curvature of his stomach. What character of a tumor growth?
A. *Exophytic
B. Expansive
C. Invasive
D. Infiltrating
E. Endophytic
28. Histological investigation of a biopsy from a tumor of the right bronchus' mucous membrane revealed a cellular and tissue atypia, appearance of structures in the form of 'cancer pearls'. Define the pathological process.
A. *Malignant tumor
B. Benign tumor
C. Hyperplasia
D. Metaplasia
E. Hypoplasia
29. A histological investigation of the biopsy from cervix uteri of a 45-year-old woman revealed signs of cellular atypia with intact basal membrane. What is the most likely diagnosis?
A. *Carcinoma in situ
B. Erosion
C. Adenocarcinoma
D. Papilloma
E. Endometriosis
30. A physical examination of a 42-year-old patient revealed enlarged supraclavicular lymph nodes. A histological investigation of a lymph node biopsy showed the metastasis of a signet-ring cancer. Choose the most probable localization of a primary tumour.
A. *Carcinoma of stomach

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B. Cancer of esophagus  
C. Cancer of thyroid gland  
D. Carcinoma of lungs  
E. Carcinoma of uterine cervix  

31. A female patient in a climacteric period presented with relapsing uterine bleedings. The diagnostic curettage of a uterus is executed. Microscopical investigation showed among blood glandular elements of different size and forms created by atypical cells with hyperchromatic nuclei numerous mitoses (including pathological). What is the most likely pathology?  
A. *Adenocarcinoma  
B. Glandular hyperplasia of endometrium  
C. Choriocarcinoma  
D. Adenomatous polypus  
E. Signs of the interrupted pregnancy  

32. A bronchoscopy of a 65-year-old patient revealed a polyp-like formation, 1,0 cm in diameter, in the proximal part of the upper lobe bronchus of his right lung. A histological research revealed the tumour which consisted from fine lymphocyte-like cells with hyperchromic nuclei. The cells grew like layers and cords. Specify, what of the listed below kinds of tumors is the most authentic?  
A. *Nondifferentiated small cell carcinoma  
B. Nondifferentiated large cell carcinoma  
C. Squamous cell carcinoma  
D. Adenocarcinoma  
E. Glandular squamous cell carcinoma  

33. A gastroscopic study of a 50-year-old patient revealed a crater-like lesion on small curvature in pre-pyloric zone of stomach. From a regional site of formation a biopsy is taken. A histological investigation showed a tumor with gland-like structures of the various form and the sizes, growing into surrounding tissue. The cells had marked signs pf atypia. Name a histological variant of the presented tumor.  
A. *Adenocarcinoma  
B. Squamous cell carcinoma  
C. Scirrhous carcinoma of stomach  
D. Mucous carcinoma of stomach  
E. Solid carcinoma of stomach  

34. A patient presented to her physician with gradually developed plaque on a skin of a cheek. The formation had necrosis and an ulcer in the center. A histological investigation of a skin biopsy revealed a growth of atypical epithelial cells with a lot of pathological mitoses. What is the most likely diagnosis?  
A. *Carcinoma of skin  
B. Sarcoma  
C. Papilloma  
D. Trophic ulcer  
E. Fibroma
35. A 48-year-old man with a history of a chronic bronchitis has died of a cachexy. A post-mortem revealed in a lumen of the right bronchus an endophytic growth of a light-grey softish tissue. Microscopic investigation showed a development of an atypical stratified epithelium with a presence of an «epithelial [epidermic] pearl, pearly body». What is the most likely diagnose.
A. *Squamous cell keratinous carcinoma
B. Squamous cell nonkeratinous carcinoma
C. Adenocarcinoma
D. Nondifferentiated carcinoma
E. Apudoma

36. An autopsy of a 50-year-old man, who died of cancer intoxication, revealed the thickening of a stomach’s wall to 1, 2 cm. The mucosa was fixed, with ill-defined gastric folds. On a cut view a tissue was homogeneous, whitish with chondroid density. For what macroscopical form of a tumour the described changes are characteristic?
A. *Infiltrate
B. Node
C. Ulcer
D. Ulcerous-infiltration
E. Cyst

37. A histological investigation of a breast tumor’s biopsy revealed solid layers of fine epithelial cells with polymorphic nuclei and a considerable quantity of pathological mitoses. In addition, the tumor had very little stroma and a lymphocytic infiltration. Name the kind of presented tumor.
A. *Medullary carcinoma
B. Scirrhous carcinoma
C. Paget’s disease
D. Adenoma
E. Adenofibroma

38. A mucus membrane biopsy is taken from a bronchus of a 52-year-old patient. A histological investigation revealed cords of atypical epithelial cells, which grew into the tissues underneath. In the cord’s center a concentric pink color formations were determined ("cancer pearls", “epithelial [epidermic] pearl, pearly body”). Name a kind of a tumor?
A. *Squamous cell keratinous carcinoma
B. Differentiated adenocarcinoma
C. Squamous cell nonkeratinous carcinoma
D. Melanoma
E. Transitional cell carcinoma

Tumours derived from a mixture of tissues
1. A 55-year-old female is found to have asymptomatic microscopic hematuria. A plain radiograph of the abdomen revealed a neoplasm at her right kidney. A gross
investigation of removed kidney revealed a node 8cm in diameter at its upper pole. The cut surface of a tumor presented with multiple hemorrhages and necroses. Histologically, it consists of light cells that form alveolar and papillary structures. The invasive growth of the tumor is moderate. Many cells have hyperchromic nuclei and atypical mitoses figues. What is the most likely diagnosis?
A. *Renal cell carcinoma.
B. Clear cell adenoma.
C. Adenocarcinoma.
D. Nephroblastoma.
E. Acidophilic adenoma with malignancy.

2. A 60-year-old man noticed worsening urinary tract symptoms and thus inquires about screening tests for kidney pathology. Investigation revealed a node 8 cm in diameter at right kidney’s apex. After surgery, grossly tumor presented a patchy pattern with hemorrhages and zones of necrosis. Histological study showed large anaplastic tumor cells with abundant foamy cytoplasm and with small central densely staining nucleus. Abnormal mitoses were also found. What is the most likely diagnose?
A. *Clear -cell carcinoma
B. Clear -cell adenoma
C. Adenocarcinoma
D. Nephroblastoma
E. Acidophilic adenoma with malignization

3. A 45-yr-old female examined by her gynecologist due to uterine bleeding. A neoplasm was diagnosed and then removed at surgery department. The uterine lesion presented with huge necrotic and hemorrhagic spongy masses. Microscopic investigation revealed large clear atypical epithelial cells and variety of abnormal dark cells, arranged around material blood spaces. Stroma was not defined. Atypical cells resembled cytotrophoblast and syncytiotrophoblast cells. What is the most likely diagnose?
A. *Choriocarcinoma
B. Invasive hydatidiform mole
C. Adenocarcinoma
D. Cavernous haemangioma.
E. Medullary carcinoma

4. A 32-year-old woman with a history of abortion 8 months earlier presented to the emergency department complaining of uterine bleeding. Examination done by gynecologist revealed a neoplasm of the uterus. Grossly, tumor had a spongy structure with multiple hemorrhages. Microscopically, atypical clear epithelial Langhan’s cells and abnormal syncytiotrophoblast cells arranged around maternal blood spaces were detected. What is the most likely diagnosis?
A. *Choriocarcinoma
B. Squamous cell carcinoma without keratinisation
C. Adenocarcinoma
5. A 45-year-old woman presented to oncology with a breast tumor. A biopsy revealed a tissue atypia with stromal predominance over neoplastic parenchyma. Breast ducts and ductules were variable, they had one or two layered epithelium without atypical mitotic activity. The intralobular stroma was dense. What is the most likely diagnosis?
A. *Fibroadenoma
B. Papilloma
C. Non-invasive carcinoma
D. Invasive carcinoma
E. Mastitis

6. The patient on a face skin had a tumorous formation plaque-like form with an ulcer. What is the most likely diagnosis?
A. *Basal cell epithelioma
B. Carcinoid
C. Thecoma
D. Pinealoma
C. Thymoma

7. A physical examination of a 22-year-old woman, with few years’ history of myasthenia, revealed a big tumor at anterior mediastinum. Histologically a tumor consisted of the oblong (spindle-shaped) cells with oval dark nuclei, which form bands and nests and has little Hassall’s bodies. After a surgical removal of a tumor symptoms of a myasthenia have started to disappear progressively. Diagnose a tumor which has etiological and pathogenic connection with a myasthenia.
A. *Thymoma
B. Adenoma of thyroid gland
C. Adenoma of parathyroid gland
D. Paraganglioma
E. Medulloblastoma

8. A 48-year-old man has presented to his physician a plaque-like formation on a neck. Histological investigation of a skin biopsy revealed tumorous cells located as nests, having round and oval form with narrow rim of basophilic cytoplasm. They reminded cells of a skin basal layer. Specify the tumor name.
A. *Basal cell epithelioma
B. Epidermal cancer
C. Hidroadenoma
D. Trichoepithelioma
E. Syringadenoma
ments had different diameter, did not form lobes. What is the most likely diagnosis?
A. *Fibroadenoma 
B. Fibroma 
C. Metastasis of a cancer 
D. Adenoma 
E. Fibrous cancer 

10. A physical examination of a 39-year-old woman revealed a soaking area by her breast nipple, a superficial ulcer with inflammatory hyperemia and skin edema. A histological research of a biopsy from this area revealed in basal layer of thickened epidermis atypical big cells with light and optically empty cytoplasm, with absence of intercellular bridges. Such cells are found and in the ostium of the big ducts of a gland. What is the most likely diagnosis?
A. *Paget’s disease 
B. Intraductal cancer 
C. Basal cell cancer 
D. Epidermoid carcinoma 
E. Melanoma 

11. A 45 year old man consulted a doctor about a plaque-like formation on his neck. Histological examination of a skin biopate revealed clusters of round and oval tumour cells with a narrow border of basophilic cytoplasm resembling of cells of basal epidermal layer. What tumour is it?
A. *Basal cell carcinoma 
B. Hydroadenoma 
C. Trichoepithelioma 
D. Epidermal cancer 
E. Syringoadenoma 

12. 6 months after labour a woman had uterine hemorrhage. Gynecological examination of uterine cavity revealed a dark-red tissue with multiple cavities resembling of a "sponge". Microscopic examination of a tumour revealed in blood lacunas atypical light epithelial Langhans cells and giant cells of syncytiotrophoblast. What tumour is it?
A. *Chorioepithelioma 
B. Cystic mole 
C. Fibromyoma 
D. Adenocarcinoma 
E. Squamous cell nonkeratinous carcinoma 

Mesenchymal (connective tissue) tumors

1. A 30-year-old man has a node on his left leg the skin. Physical investigation revealed dense, mobile tumor, circumscribed by a connective tissue capsule. Grossly it cut section was presented with dense witish fibres. Microscopically the tumor composed of mature fibroblasts and a collagenous stroma. What is the most likely
1. The diagnosis?
A. *Fibroma
B. Myoma
C. Histiocytoma
D. Dermatofibroma
E. Desmoid.

2. A 14x6x5 cm neoplasm excised from a retroperitoneum of a 66-year-old woman at surgery department. Microscopic investigation revealed atypical anaplastic cells, which contained round cytoplasmic vacuoles of lipid that scallop the nucleus. The majority of cells were pleomorphic, some of them were round with chromosomal abnormalities. What is the most likely diagnosis?
A. *Liposarcoma
B. Lipoma
C. Myosarcoma
D. Fibrosarcoma
E. Mesothelioma

3. A physical examination of 47-year-old woman of gynecology department revealed that her uterus contained discrete, firm, white nodules. Histological examination excised lesion demonstrated a tissue atypia of a sample. It presented well-differentiated mature cells of smooth muscles. What is the most likely diagnosis?
A. *Leiomyoma.
B. Carcinoma of the uterus.
C. Fibromyoma.
D. Chorionepithelioma.
E. Leiomyosarcoma

4. A 20-year-old man has had a slowly growing reddish nodule on his upper lip. He finally decides to have a surgeon remove it. Microscopically the nodule is composed of benign varying sized tiny blood vessels. What is the most likely diagnosis?
A. *Capillary hemangioma.
B. Venous hemangioma.
C. Cavernous hemangioma.
D. Hemangiopericytoma.
E. Glomus-angioma.

5. The patient, a previously dealthy man of 25 years, presented with a painless neoplasm in a soft tissues of his left thigh. Grossly, a tumor had uneven boundaries and on cut section it looked like a fish flesh. Microscopic investigation revealed immature connective tissue cells with pleomorphism, numerous mitotic figures and lymphocyte infiltration at the edge of the tumor. What is the most likely diagnosis?
A. *Fibrosarcoma
B. Myosarcoma
C. Fibroma
D. Carcinoma
6. A 40-year-old woman presented with a very slowly enlarging subcutaneous mass at the right side of the chest wall. Physical examination revealed a soft lobulated fluctuant swelling, not attached to the skin or underlying muscle. Histologically a neoplasm was well-encapsulated and consisted of mature cells with clear cytoplasm that varied considerably in size. What is the most likely diagnosis?
A. *Lipoma.
B. Fibroma.
C. Hygroma.
D. Papilloma.
E. Hemangioma.

7. A macroscopical investigation of operatively removed uterus revealed a tumour with a soft consistence, hemorrhages and necroses. The tumor cut surface reminds 'the fish meat'. Histological research has found an expressed cellular and tissue atypia; there were cells with pathological mitoses figures. What is the most likely diagnosis?
A. Sarcoma.
B. Adenocarcinoma.
C. Angioma.
D. Fibroma.
E. Lipoma.

8. At the young man in a skin depth the dense, mobile tumour, is defined. A microscopic research revealed chaotically located fascicles of collagen fibers with a small amount of spindle-shaped cells. What tumour is removed?
A. *Dense fibroma.
B. Leiomyoma.
C. Melanoma.
D. Lipoma.
E. Glomus-angioma.

9. A 4-year-old child presented with a flat red color knot on his neck skin, which turns pale at pressing by glass the knot. What is the most probable diagnosis?
A. Hemangioma
B. Pigmented nevus
C. Melanoma
D. Leiomyoma
E. Lymphangioma

10. A 28-year-old man with a history of an elbow bruise 3 years ago presented with a tumorous growth in the area of an epiphysis of a humeral bone. The formation did not have accurate borders. A histological investigation of biopsy material revealed a considerable quantity of polymorphic cells of osteoblastic type with numerous pathological mitoses. Make the presumable diagnosis.
A. *Osteosarcoma
B. Chondrosarcoma
C. Osteoid-osteoma
D. Fibrosarcoma
E. Sinovial sarcoma
11. A 48-year-old man presented to physician with mobile 1, 0 x 0, 7 cm formation under a skin of mandible. It had precise borders, dough-like consistence and slow growth. A histologic research of formation revealed fat tissue cells (lipocytes), which created lobules of different forms and the sizes, divided by thin layers of a connective tissue with vessels. What is the most likely diagnosis?
   A. *Lipoma
   B. Fibroma
   C. Angioma
   D. Liposarcoma
   E. Fibrosarcoma
12. A 33-year-old woman presented with a tumor-like formation on a white line of her abdomen, which during pregnancy has started to increase in sizes. A histological research revealed that a tumor is constructed of the differentiated connective tissue, in which collagen fibers prevail of cells. What tumor presented in this case?
   A. * Desmoid
   B. Dense fibroma
   C. Fibrosarcoma
   D. Soft fibroma
   E. Dermatofibroma
13. A 15-year-old young man presented with a tumorous formation in the central site of his wrist bone. The node grew slowly within last 3 years. A histological research of a removed neoplasm revealed mature chondrocytes without mitoses, which randomly located in chondral lacunas. Cartilages of a capsule had different form and the sizes due to variable quantity of chondral cells, between which there were basic substance with liquid layers of a connective tissue. What is the most likely diagnosis?
   A. *Chondroma
   B. Chondroblastoma
   C. Chondrosarcoma
   D. Teratoma
   E. 
14. A 50-year-old patient presented to the doctor with a ball-shaped, dense, motionless neoplasm, 2 cm in diameter, under a skin in the right parietal site of his head. A histological research of a removed neoplasm revealed a chaotic osteal beams pattern with a connective tissue between. What is the most likely diagnosis?
   A. *Cancellous osteoma (Osteoma spongiosum)
   B. Compact osteoma (Osteoma durum)
   C. Osteoporosis
   D. Osteomalacia
   E. Osteosarcoma
15. At the young woman in the area of her distal extremity of a femur the tumor, which quickly grew, is removed. Grossly, it had a motley pattern – from white-sulphur to brown-red color and a quaggy consistence. Microscopical investigation revealed the basic tissue component of a tumor presented with osteal and the ossiform structures covered by atypical osteoblasts, with numerous thin-walled vessels and atypical mitoses figures. Make a diagnosis.
A. *Osteocarcoma
B. Chondroma
C. Osteoma
D. Сарcoma Юинга
E. Angiosarcoma

16. A 16-year-old child presented with a painful softish node in his femur diaphysis. The formation grows quickly with destruction of a spongy layer of a bone. Microscopical investigation revealed monomorphous round cells little bit bigger than mature lymphocytes, with jejunely light cytoplasm which contains glycogen. In some zones these cells form pseudo-rosettes with few mitoses. Between cells there are fibrinous membranes. What is the most likely diagnosis?
A. *Ewing’s sarcoma
B. Lymphoma
C. Rhabdomyosarcoma
D. Neuroblastoma
E. Hemangioma

17. Examination of a 55 year old woman revealed under the skin of submandibular area a movable slowly growing pasty formation with distinct borders 1,0x0,7 cm large. Histological examination revealed lipocytes that form segments of different forms and sizes separated from each other by thin layers of connective tissue with vessels. What is the most probable diagnosis?
A. *Lipoma
B. Fibroma
C. Liposarcoma
D. Fibrosarcoma
E. Angioma

18. Examination of the anterior abdominal wall of a pregnant woman revealed a tumour-like formation that arose on the spot of a tumour that was removed two years ago. The neoplasm was well-defined, dense, 2x1 cm large. Histological examination revealed that the tumour was composed of differentiated connective tissue with prevailing collagen fibres. What tumour might be suspected?
A. *Desmoid
B. Hibernoma
C. Leiomyoma
D. Fibrosarcoma
E. Lipoma
Neoplasms of the nervous system (including meninges) and melanin producing tissues

1. An eye of 53-year-old patient, excised at surgery due to neoplasm, presented in pathology department. Gross investigation revealed a 1×0.4 cm black lesion in the retina. Microscopic appearance of a tumor was characterized by nests of immature cell with eccentric nuclei, prominent macronucleoli and cytoplasm brown pigment. What is the most likely diagnosis?
   A. *Melanoma
   B. Neurinoma
   C. Angiosarcoma
   D. Neuroblastoma
   E. Ganglioneuroblastoma

2. At autopsy a 8-year-old child is found to have a poorly circumscribed tumor of cerebellum. Histologically investigation revealed crowds of small immature cells with hyperchromatic, round-oval nuclei and scant cytoplasm. A few rosettes were also found by pathologist at slide examination. What is the most likely diagnosis in that case?
   A. *Medulloblastoma
   B. Astrocytoma
   C. metastasis of cancer
   D. metastasis of sarcoma
   E. Glioblastoma

3. An elderly man with a 2-year history of right leg amputation presents with 2 cm encapsulated tumor at the area of a past surgical trauma of soft tissue. Histology investigation revealed disordered orientation of mature nerve fiber bundles intermixed with connective tissue. Higher magnification showed bundles of axons, Schwann cells, fibroblasts and perineurial cells within tumor mass. What is most likely diagnosis?
   A. Neurinoma
   B. Neurofibroma
   C. Malignant neurinoma
   D. Soft fibroma
   E. Fibrosarcoma

4. A 66-year-old woman present with right eye bad vision, ophtalmoscopy revealed a neoplasm of retina which was soon excised, at surgery together with an eye ball. Grossly, a neoplasm was soft, irregular in contour 1×1 cm in size and had a brown coloring. Under microscope a lesion demonstrated nodular aggregates of infiltrating cells. There cells contained large brown pigment nuclei with chromatin clumped at the periphery of nuclear membrane and prominent nucleoli. Atypical mitoses figures were also revealed. What is most likely diagnosis?
   A. *Melanoma
   B. Schwannoma
   C. Glomus tumor
5. A 38-year-old woman has a seizure while shopping and is taken to the hospital. A scan of a brain demonstrated a poorly circumscribed 5 cm tumor at right parietal lobe. A biopsy of this area contains of increased number of glial cell nuclei and an interwoven feltwork of filial cell processes that give the background a fibrillary appearance. Abnormal mitoses and atypical central nervous system cells were absent within biopsy sample. What is the most likely diagnosis?

A. Astrocytoma
B. Oligodendroglioma
C. Ganglioneuroma
D. Ependimoma
E. Chorioid papilloma

6. A 50-year-old woman presented with a pigmented painful skin lesion above the ankle. It had been present for many years but in recent months it had enlarged quite rapidly, its outline got irregularity. Microscopic investigation of a lesion biopsy revealed nests of atypical cells and single cells with eccentric nuclei, prominent macronucleoli and cytoplasmic brown pigment. What is the most likely diagnosis?

A. *Melanoma
B. Basal cell carcinoma
C. Hemangioma.
D. Haematoma.
E. Carcinoid.

7. The man of 45 years has completely lost hearing on the right ear. Physical investigation has not revealed any pathological changes in system of the right acoustic analyzer. The tomography of a brain has revealed a neoplasm, 7 cm in diameter, homogeneous, without precise contours in a site of cerebellopontine angle. Name a neoplasm.

A. *Neurilemmoma
B. Gangliocytoma
C. Astrocytoma
D. Chorioidal papilloma
E. Neuroblastoma

8. The tumor of a brain is diagnosed for the patient with neurologic disturbances. During operation the tumor, which looks like the dense node bound to a firm cerebral membrane, is removed. Histological investigation revealed the neoplasm constructed from endothelium-like cells closely adjoining to each other. What is the most likely diagnosis?

A. *Meningioma
B. Glioblastoma
C. Anaplastic meningeoma
D. Astrocytoma
E. Neuroblastoma
9. The tumour of a brain is diagnosed for the patient with quickly increasing intracranial hypertension. The removed tumor of a parietal-temporal part of brain had a soft consistence and a motley pattern of a cut surface. Histological investigation revealed neoplastic tissue constructed of polymorphic cells with sites of necroses and a hemorrhage. What is the most likely diagnosis?
A. * Glioblastoma
B. Oligodendroglioma
C. Neuroblastoma
D. Astrocytoma
E. Meningioma

10. The woman on her face skin had a pigmental formation in the form of a nodule which quickly grew. The biopsy is made. Microscopical investigation of biopsy sample revealed fields of spindle-shaped and polymorphic cells which contain a brown pigment. In addition, there were diagnosed numerous mitoses. What is the most likely diagnosis?
A. *Melanoma
B. Nevus
C. Cancer
D. Papilloma
E. Dermatofibroma

11. A physical investigation of a 60-year-old woman with one year history of a formation on a face revealed a brown skin plaque with irregular form and black impregnations. A histological research of a skin biopsy showed in epidermis and through all derma polymorphic big cells with pathological mitoses, large nucleoli and yellowy-brown pigment in a cytoplasm of many cells. The specified cells grow in a kind of fine groups and also alone. Make a diagnosis.
A. *Melanoma
B. Nevus
C. Papilloma
D. Xeroderma
E. Melanosis

12. Examination of a young woman revealed a node-like, soft and elastic homogenous tumour of pinkish-white colour along the acoustic nerve. The tumour contains cell bundles with oval nuclei. Cellular fibrous bundles form rhythmic structures made up by parallel rows of regularly oriented cells arranged in form of a palisade with cell-free homogenous zone (Verocay bodies) between them. What tumour is it?
A. *Neurinoma
B. Ganglioneuroblastoma
C. Malignant neurinoma"
D. Neuroblastoma
E. Ganglioneurinoma
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E. Ganglioneurinoma

**Diseases of haemopoetic and allied systems**

1. A 34-year-old male is found to have weakness, confusion, other neurologic manifestations and polyuria. X-ray examination revealed multifocal destructive bone lesions throughout the skeletal system. Electrophoretic analysis revealed increased level of Ig in the blood and Bence Jones protein in the urine. What is the most likely diagnosis?
A. *Myeloma
B. Acute monocytic leukemia
C. Chronic myeloleukemia
D. Lymphogranulomatosis
E. Histiocytosis

2. A 42-year-old female is admitted to the hospital for treatment of a blood disorder. A disease complicated with pneumonia led to lethal outcome. An autopsy revealed hyperplasia of a bone marrow with “pus”-like appearance, splenomegaly (5 kg weight), hepatomegaly (6 kg weight), systemic lymph nodes enlargement. What is the most likely diagnosis?
A.* Chronic myeloleukemia
B. Chronic lymphatic leukemia
C. Myeloma
D. Polycytemia vera (erythremia, Osler's disease)
E. Lymphogranulomatosis

3. An elderly male is admitted to the hospital for treatment of humeral bone fracture. His fracture’s area X-ray showed a new growth and lytic zone within lesion. Histological examination of a biopsy revealed abnormal plasma cells. What is the most likely diagnosis?
A. * Myeloma
B. Chronic osteomyelitis
C. Chondrosarcoma.
D. Bone fibrous dysplasia
E. Metastasis of adenocarcinoma

4. At autopsy an elderly female is found to have enlarged groups of a neck, axillary
and mediastinal lymph nodes matted together. They were firm and rubbery. The cut surface was gray-white, producing a “fish-flesh” appearance. Microscopy revealed heterogeneous cellular infiltrate which contained lymphocytes, classic and mononuclear Reed-Berezovsky-Sternberg cells. What is the most likely diagnosis?
A. * Lymphogranulomatosis
B. Chronic lymphatic leukemia
C. Lymphosarcoma
D. Retikulosarcoma
E. Mycosis fungoides

5. A 67-year-old female presented with painless enlargement of lymph nodes. Histological examination of a biopsy sample revealed that the whole lymph node pattern was unclear, with heterogeneous cellular infiltrate. It included abnormal, immature cells admixed with lymphocytes, eosinophils, plasma cells and macrophages. Binucleated Berezovsky-Reed-Sternberg cells, where surrounded by multiple cell types. What is the most likely diagnosis?
A. * Lymphogranulomatosis
B. Acute myeloleukemia
C. Chronic myeloleukemia
D. Mycosis fungoides
E. Tuberculosis

6. A 25-year-old patient presented with peripheral adenopathy, involving a single cervical lymph node. A biopsy sample investigation revealed an unclear node pattern with mixed cellular infiltration. Histological study under higher magnification showed numerous variants of Berezovsky-Reed-Stenberg cells, lymphocytes, necrotic area and mild diffuse fibrosis. What is the most likely diagnosis?
A. * Lymphogranulomatosis
B. Nodular lymphoma
C. Burkitt's lymphoma
D. Lymphocytic lymphoma
E. Chronic lymphatic leukemia

7. A 65-year-old female is noted to be anemic. Her serum protein electrophoresis demonstrated a large monoclonal Ig G kappa protein. In her bone marrow are increased numbers of atypical plasma cells. Her skull X-ray show multiple lytic areas. What is the most likely diagnosis?
A.* Myeloma
B. Polycytemia vera (erythremia, Osler's disease)
C. Lymphocytic lymphoma
D. Chondrosarcoma
E. Bone fibrous dysplasia

8. A thoracotomy of a 58-year-old woman revealed in her anterior mediastinum the enlarged and soldered together lymph nodes. Microscopical investigation revealed atypical cells with predominance of Hodgkin cells and giant Reed—Berezovsky-Sternberg cells. A sclerosis was absent. What is the most likely diagnosis?
A. *Lymphogranulomatosis with low-spirited development of lymphoid tissue
B. Lymphogranulomatosis with predominance of nodularis sclerosis
C. Lymphogranulomatosis with predominance of lymphoid tissue
D. Lymphosarcoma
E. Mixed-cellular variant of lymphogranulomatosis

9. A tomography revealed enlarged lymphatic nodes. A histological investigation of lymph node’s biopsy showed a circular growths of a connective tissue, which surrounded a granuloma-like formation, made from lymphocytes, plasmocytes and giant double-nuclear cells. What is the most likely diagnosis?

A. *Lymphogranulomatosis
B. Lymphosarcoma
C. Tuberculosis
D. Sarcoidosis
E. Lymphatic leukemia

10. The young man presented to his physician with enlarged neck lymph nodes. A microscopical investigation of a lymph node biopsy sample revealed the lymphoid tissue proliferation with presence of a giant Reed—Berezovsky—Sternberg cells, eosinocytes, zones of necrosis and sclerosis. What is the most likely diagnosis?

A. *Lymphogranulomatosis
B. Chronic lymphatic leukemia
C. Multiple myeloma
D. Lymphosarcoma
E. Histiocytosis

11. A biopsy of the enlarged lymph node was taken. A histological investigation revealed a diffuse growth of lymphoid cells with adding of eosinocytes, atypical histiocytes, solitary giant Reed—Berezovsky—Sternberg cells with two and more nuclei, cell’s necrosis and sclerosis. What is the most likely diagnosis?

A. *Lymphogranulomatosis
B. Lymphatic leukemia
C. Burkett’s lymphoma
D. Sarcoidosis
E. Myeloleukemia

12. An autopsy of a 67-year-old man revealed the systemic enlargement of lymph nodes with formation of tumorous conglomerates. The spleen was also enlarged with a motley pattern of a cut surface. There were plural, tiny, yellowish-white spots on a red background of a spleen’s pulp. What is the most likely diagnosis?

A. *Lymphogranulomatosis
B. Sarcoidosis
C. Lymphosarcoma
D. Carcinoma of lung
E. Lymphatic leukemia

13. Clinical investigation of a patient revealed the enlarged lymph nodes, spleen and liver. A microscopical study of the enlarged cervical (neck) lymph node
showed the blurring of its structures and absence of lymphatic follicles. All microscopical views were presented by cells with round nuclei and narrow ring of a basophilic cytoplasm. What is the most likely diagnosis?
A. *Lymphatic leucosis
B. Lymphogranulomatosis
C. Lymphosarcoma
D. Myeloleukemia
E. Multiple myeloma

14. An autopsy of a 35-year-old woman revealed the enlarged spleen, (weight 800gm), liver (weight 4000 gm) and lymph nodes. A bone marrow of a femur diaphysis was juicy (succulent), crimson-red color. Microscopical study of a liver defined dense infiltrates within portal tracts, consisted of immature blood cells. These cells had a round nuclei and narrow ring of a cytoplasm. What is the most likely diagnosis?
A. *Chronic lymphatic leukemia
B. Chronic myeloid leucosis
C. Generalizated form of lymphogranulomatosis
D. Acute myeloblastic leucosis
E. Acute lymphoblastic leucosis

15. A microscopic investigation of the enlarged neck lymph node biopsy revealed the blurring of its structures, plenty of proliferating lymphocytes with adding of solitary giant Reed—Berezovsky - Sternberg cells. What is the most likely diagnosis?
A. *Lymphogranulomatosis, with predominance of lymphatic tissue
B. Lymphogranulomatosis, with exhaustion of lymphatic tissue
C. Mixed cell variant of lymphogranulomatosis
D. Lymphosarcoma
E. Nodular sclerotic variant of lymphogranulomatosis

16. At young men the increased cervical lymph node is removed. Microscopic investigation revealed the altered node’s structure, an absence of lymphoid follicles, sites of a sclerosis and necrosis. The cellular infiltrate is polymorphic with a presence of lymphocytes, eosinocytes, and atypical one-nuclear cells and multinuclear giant cells (Reed—Berezovsky - Sternberg cells). What is the most likely diagnosis?
A. *Lymphogranulomatosis
B. Acute lymphatic leukemia
C. Chronic lymphatic leukemia
D. Burkett’s lymphoma
E. Mycosis fungoides

17. A liver biopsy was taken from a 66-year-old man, with a history of increased quantity of lymphocytes and pro-lymphocytes in his blood. A histological investigation of a liver sample revealed plural accumulations of the mentioned above
cells, mainly between hepatic segments. For what disease above listed changes are characteristic?
A. *Chronic lymphatic leukemia
B. Acute lymphatic leukemia
C. Lymphogranulomatosis
D. Chronic persistence hepatitis
E. Hepatocellular carcinoma of liver
18. A 4-year-old girl died due to a post-hemorrhagic anemia, resulted from a gastro-intestinal profuse bleeding. An autopsy revealed an anemia of her organs, the enlargement of the different groups of lymph nodes, thymomegaly, mild hepatomegaly, splenomegaly and bright red bone marrow. Microscopical study showed hypercellularity of a bone marrow with monomorphic blast cells infiltrate, diffuse inflammatory tumor-like infiltrates in a liver, a spleen, lymph nodes, meninges and substance of a brain. What is the most likely diagnosis?
A. * Acute lymphoblastic leucosis
B. Acute myeloblastic leucosis
C. Acute nondifferentiated leucosis
D. Acute monoblastic leucosis
E. Acute plazmoblastic leucosis
19. A 14-year-old boy presented to a hospital with enlarged submaxillary and cervical lymph nodes. A biopsy procedure was performed. Microscopical investigation revealed the disorder of a lymph node typical structure, a heterogeneous cellular population with a presence of giant multinuclear cells and plural one-nuclear big cells. There were also eosinocytes, neutrophils and lymphocytes in the cell infiltrate. In addition, sites of necrosis and sclerosis were found. What is the most likely diagnosis?
A. *Lymphogranulomatosis
B. Hyperplasia of lymphatic nodes
C. Granulomatous lymphadenitis
D. Purulent lymphadenitis
E. Non-Hodgkin’s lymphoma
20. A radiological investigation of a man’s head revealed in his maxillary and mandibular bones numerous round defects with smooth walls. A histological study showed osteolysis and osteoporosis accompanied with insufficient bone repair. The laboratory test of the urine detected the Bence Jones protein. What is the most likely diagnosis?
A. *Multiple myeloma
B. Chronic myeloleukemia
C. Chronic erythromyelosis
D. Acute myeloleukemia
E. Acute nondifferentiated leucosis
21. A physical examination of a young men’s oral cavity revealed the atrophy of mucous membrane and red spots on his tongue (atrophic; Hunter's; Moeller's glos-
sitis). Sclera had a yellow coloring. A blood test showed the color index above one. For what anemia these changes are characteristic?
A. * Nutritional anemia due to vitamine $B_{12}$ deficiency  
B. Asiderotic anemia  
C. Acute posthemorrhagic  
D. Chronic posthemorrhagic  
E. Hemolytic anemia

22. A physical examination of a 42-year-old man revealed enlarged lymph nodes. A histological investigation of a lymph node showed lymphocytes, histiocytes, reticular cells, small and big Hodgkin’s cells, multinuclear Berezovsky -Reed-Sternberg cells (Sternberg-Reed cells) infiltration with solitary necrotic areas. What disease such changes characteristic for?
A. * Lymphogranulomatosis  
B. Lymphosarcoma  
C. Chronic leucosis  
D. Acute leucosis  
E. Metastasis of carcinoma of lungs

23. A gross examination of a dead body revealed the skin’s pallor and a yellowness of a sclera. Livores mortis were not defined. The volume of blood in a heart and large vessels was reduced. A blood looked aqueous. In a skin, mucosa and serous membranes there were petechial hemorrhages. The internal organs, especially a spleen, a liver and kidneys had a rusty color on a cut. A bone marrow of flat bones was a crimson-red and succulent. In cortical [tubular, cylindrical] bones it looked like a crimson jelly. Name the disease, connected with a deficiency of vitamin $B_{12}$.
A. *Pernicious anemia  
B. Drepancytic (sickle-cell) anemia  
C. Panmyelophthisis  
D. Toxic anemia  
E. Acute posthemorrhagic anemia

24. A post-mortem of a 56-year-old woman revealed the Hunter's (atrophic; Moeller's) glossitis, atrophy of mucous membrane of a stomach and liver’s hemosiderosis. A bone marrow in all investigated bones was red. A microscopical study showed hyper cellular infiltration in a lamina propria of a stomach with a presence of lymphatic follicles. In a spinal cord there was a funicular myelosis and also haemopoiesis foci detected in a spleen. What is the most likely diagnosis?
A. *Addison-Biermer anemia  
B. Fanconi's (congenital aplastic) anemia  
C. Hypoplastic anemia  
D. Chronic gastritis (type A)  
E. Chronic gastritis (type B)

25. A post-mortem of a 4-year-old girl revealed plural petechial hemorrhages on her skin, serous and mucous membranes, large focal hemorrhage in a brain and necrotic tonsillitis. Microscopical study showed multiple cell infiltrates with pre-
vailing lymphocytes in a bone marrow, a liver, a spleen, a thymus, lymph nodes, tonsils and a skin. What is the most likely diagnosis?
A. *Acute lymphatic leukemia
B. Chronic lymphatic leukemia
C. Hodgkin’s lymphoma
D. Follicular non-Hodgkin’s lymphoma
E. Mycosis fungoides

26. A post-mortem of a 15-year-old girl revealed enlarged neck, mediastinal and mesenteric lymph nodes, which were integrated in conglomerates. On a cut section, the tissue pattern of the nodes was non-uniform, with foci of necrosis. Microscopical investigation showed the uneven structure of lymph nodes, foci of sclerosis and necrosis. The cell population was also heterogeneous and included uninuclear atypical cells, giant multinuclear atypical cells, a significant amount of eosinocytes and neutrophils, and sparse lymphocytes. What is the most likely form of Hodgkin lymphoma (lymphogranulomatosis)?
A. * Lymphogranulomatosis, mixed cell variant
B. Lymphogranulomatosis, lymphohistiocytic variant
C. Lymphogranulomatosis, nodular sclerosis
D. Lymphogranulomatosis, variant with low-spirited development of lymphoid tissue
E. Hodgkin’s sarcoma

27. A 63-year-old man, with 20 years history of working as the engineer for the service of electronic microscopes, died of a sepsis. An autopsy revealed plural hemorrhages in serous and mucous membranes, a general hemosiderosis, a fatty dystrophy of a myocardium, liver and kidneys, ulcerative –necrotic and purulent processes in a gastro –intestinal system. The red bone marrow was replaced by a fatty. What is the most likely diagnosis?
A. *Hypoplastic anemia
B. Megaloblastic anemia
C. Posthemorrhagic anemia
D. Iron deficiency anemia

28. A 38-year-old man, with a history of an ulcer, resulted in a stomach’s resection, in his blood test had a normal quantity of erythrocytes, but reduced hemoglobin’s concentration and decreased color index. An autopsy revealed pale skin and visible mucous membranes; bone marrow of long tubular bones was brightly red. Erythrocytes in a smear had a normal form and the sizes. They look very pale because of bad staining by dyes. What pathological process took place in this case?
A. * Hypochromic iron deficiency anemia
B. B12-folic acid deficiency anemia
C. Acute lymphoblast leukemia
D. Sicklemia sickle cell anemia
E. Aplastic anemia
29. A 44-year-old man presented to a gastroenterologist with pains in his epigastrum. A physical examination revealed an icteritiousness of his skin and scleras, an alteration of a tongue’s mucous membrane. A tongue grossly looked shining, smooth, with red spots. In peripheral blood’s smear there were found enlarged erythrocytes (megaloblasts). A histological study of a gastrobiopsy from a body of a stomach showed a thinning of mucosa, a reduction of glands quantity, superfluous growth of a connective tissue. Specify, what of diagnoses is the most probable in this case:
A. * B12-folic acid deficiency anemia
B. Chronic posthemorrhagic anemia
C. Hemolytic anemia.
D. Chronic myeloid leukemia.
E. Aplastic anemia

30. A man, with a history of getting a high doze of ionizing radiation, presented to his physician with marked stomatorrhagia (gingival hemorrhage), spontaneous skin and mucosas’ haemorrhages. A blood test showed a normochromal anemia and pancytopenia. The concentration of iron in blood’s serum was normal. A histological investigation of a bone marrow puncture sample revealed a replacement of a hemopoietic tissue by the fatty tissue. What is the most likely diagnosis?
A. * Aplastic anemia
B. B12-folic acid deficiency anemia
C. Hemolytic anemia
D. Myelodysplastic syndrome
E. Immune cytopenia

31. A patient presented with an infiltrative, plaque-like polymorphic skin rash, which had various contours, sizes and a congested -cyanotic color. The lesions tended to peripheral growth and fusion. A microscopical investigation of a skin biopsy revealed massive lymphocytes’ proliferation, which occupied the entire derma and a hypodermic fatty layer. What is the most likely diagnosis?
A. * Limphoma of skin
B. Systemic lupus erythematosus
C. Mycosis fungoi’des
D. Intradermal nevus
E.

32. A patient has a cluster of matted together dense lymph nodes on his neck. Histological examination of a removed lymph node revealed proliferation of reticular cells, presence of Reed-Sternberg cells. What disease is meant?
A. *Lymphogranulomatosis
B. Myeloblastic leukosis
C. Lymphoblastic leukosis
D. Myelocytic leukosis
E. Lymphocytic leukosis
33. Microscopical examination of an enlarged cervical lymph node revealed blurring of its structure, absence of lymphoid follicles; all the microscopic fields showed cells with roundish nuclei and thin limbus of basophil cytoplasm. It is known from the clinical data that other groups of lymph nodes are also enlarged as well as spleen and liver. What disease might be suspected?
A. *Lymphoid leukemia  
B. Myeloid leukemia  
C. Lymphosarcoma  
D. Multiple myeloma  
E. Lymphogranulomatosis