

## **List of macropreparates (gross specimens) for exam on the pathological anatomy (40)**

1. Purulent meningitis
2. Chorioepithelioma of uterus
3. Miliary tuberculosis of lungs
4. Multiple fibromyoma (leomyoma) of uterus
5. Fibrocavernose tuberculosis of lungs
6. Tumor of brain (glioma)
7. Lobar (croupous) pneumonia complicated by abscess formation
8. Cardiac [pericardial] tamponade
9. Nutmeg liver
10. Chronic ulcer of stomach complicated by penetration into pancreas
11. Micronodular cirrhosis of the liver
12. Clear-cell carcinoma of kidney
13. Cancer of stomach (exophytic patelliform form)
14. Breast cancer
15. Artherosclerotic nephrocystosis (primary contracted kidney)
16. Pulmonary thromboembolism
17. Morphological changes of small intestine due to typhoid (enteric) fever
18. Atherosclerosis of aorta with atheromatosis and mural thrombosis
19. Fatty dystrophy of liver ("goose" liver)
20. Adenoma of prostate complicated by urethrohydronephrosis
21. Cerebral haemorrhage
22. Nodular goiter
23. Dry gangrene of foot
24. Pneumonia complicated by an abscess due to septicopyemia
25. Carcinoma of lung, hilar (center) type
26. Lymphogranulomatosis (Hodgkin's disease) of paraaortic lymph nodes
27. Carcinoma of uterus
28. Sarcoma of shin-bone
29. Fibrinous pericarditis («hairy heart»)
30. Mitral stenosis (rheumatic heart disease)
31. Polypoulcerosa septic endocarditis of aortic valve
32. Purulo-fibrinogenous endomyometritis
33. Hydatidiform [cystic, vesicular, grape] mole
34. Fallopian tube pregnancy
35. Cephalohematoma
36. Thecoma of the ovary
37. Wilms' tumour
38. Cerebral abscesses
39. Splenic infarcts
40. Squamous cell carcinoma of the larynx

### **1. Purulent meningitis**

Pia mater is thickened, dim, full-blooded, grayish-yellow color. Sulci and gyri of the brain are smoothed and badly visualized. Process usually starts from a basal sections on the frontal and parietal lobes with forming of a "cap". Etiology – mostly pyogenic bacteria. Complications: meningoencephalitis, sepsis, closed form of hydrocephalus.

### **2. Chorioepithelioma of uterus**

The tumour appears as haemorrhagic, soft and fleshy mass. In the uterine cavity is defined motley spongy formation with hemorrhages, that germinates into the myometrium. The diagnosis is confirmed by demonstration of persistently high levels of hCG in the plasma and urine. Widespread haematogenous metastases are early and frequent in choriocarcinoma if not treated and are found chiefly in the lungs, vagina, brain, liver and kidneys.

### **3. Miliary tuberculosis of the lungs**

Grossly, we can see: multiple diffusely located lesions (spots). The lesions are small (1-4 mm), firm, yellow-white foci of consolidation. Central cavitation or caseous necrosis is not usually seen. They are distributed evenly throughout the involved tissues. Lympho-haematogenous dissemination may give rise to miliary tuberculosis. It may be a manifestation of hematogenous tuberculosis or hematogenous generalization of primary TB

### **4. Multiple fibromyoma (leiomyoma) of uterus**

On a cross section of the uterus can be seen multiple nodules white with well-defined borders (this indicates that the neoplasm is benign). They are located in the wall of the myometrium (intramural), we can think that the tumor arose from the smooth muscles.

### **5. Fibrocavernouse tuberculosis of lungs**

The mounted specimen consists of a parasagittal slice of the lung. The lobes shows cavities both containing adherent caseous material. The larger irregular cavity has probably formed as a result of coalescence of a number of smaller cavities. The parenchyma surrounding these cavities is consolidated and shows grey/white caseous material. The visceral pleura related to the apex of the lung is thickened and fibrotic. The lower lobe of the lung shows multiple, small, patchy grey/white foci which are focally confluent. This appearance is typical of confluent bronchopneumonia. Tuberculous bronchopneumonia follows aspiration of caseous material within bronchi.

### **6. Tumor of brain (glioblastoma)**

The mounted specimen shows the brain after horizontal slicing. Externally, there is gross swelling of the lobe. A large tumour is present in the lobe. This tumour measures 5 cm in diameter and is partly cystic and partly solid with numerous foci of haemorrhage and tumour necrosis.

Macroscopically, the lesion appears fairly well demarcated from the surrounding brain tissue

Glioblastoma multiforme is an anaplastic tumour of astrocytes. The prognosis for patients with these tumours is very poor. Mean survival is only 8-10 months.

**7. Lobar (croupous) pneumonia** complicated by abscess formation

One lobe of the lung is consolidated and its pleural surface is covered with a fibrinous pleurisy. The consolidated tissue is grey in color. The underlying pulmonary architecture can still be discerned. Careful examination of the lower lobe will show tiny areas of abscess formation. The appearances in the lobe are typical of the grey hepatization stage of lobar pneumonia. The pleural surface of the lung is also inflamed and may be covered by a fibrino-purulent exudate. Patients with lobar pneumonia have less dyspnoea than those with bronchopneumonia, but because of the pleuritic reaction they have chest pain during respiration and with coughing.

**8. Cardiac [pericardial] tamponade**

Hemopericardium (the blood collects in a cavity of a pericardium) ;  
*epicardium; myocardium ; stenosis of the coronary arteries*

**9. Nutmeg liver**

Liver showing the effects of long-standing cardiac failure The congested centrilobar areas are red. The creamy nodular areas are accentuated portal tracts and foci of regenerating hepatocytes (resembles nutmeg).

**10. Chronic ulcer of stomach complicated by penetration into pancreas**

The specimen consists of an irregular portion of gastric wall. The ulcer is oval in shape and deeply penetrating into pancreas. Necrotic debris covers the base. The specimen has been cut to show the submucosa, muscle coat and adventitial connective tissues in the region of the ulcer. Note that there is extensive fibrosis of the submucosa in this area and absence of the external muscle coat. Grey/white fibrous tissue can be seen extending beyond the muscle coat into the adventitial connective tissues. These are the features of a chronic ulcer. The uninvolved mucosa shows some tethering of the mucosal folds towards the ulcer but is otherwise unremarkable

**11. Micronodular cirrhosis of the liver**

The cirrhotic liver is pale and fatty and its architecture is replaced by multiple small nodules.

**12. Clear-cell carcinoma of kidney**

Renal cell carcinoma. There is a well circumscribed, spherical tumour 40 mm in diameter bulging through the cortical surface of the kidney. Its cut surface is bright yellow. It shows solid areas, cystic areas, and areas of haemorrhage

**13. Cancer of stomach** (exophytic patelliform form)

**14. Breast cancer**

Infiltrating (invasive) carcinoma with necrosis of the tumor). Axillary nodes involved by carcinoma breast

**15. Artherosclerotic nephrocirrosis** (primary contracted kidney)

Both kidneys are reduced in size, dense consistency, with fine-grained surface. Macroscopic picture in the centers of depressions on the surface of the kidney is caused by multiple sclerosis and hyalinosis of glomeruli, arterioles, stroma, tubular atrophy; in the centers of protrusions - hypertrophy of surviving nephrons. There can be primary or secondary renal shrinkage.

## **16. Pulmonary thromboembolism**

The pulmonary trunk and proximal right and left pulmonary artery have been opened, revealing a tangled, branching red-tan mass within (arrow). A pulmonary thromboembolus travels from a large vein in the leg up the inferior vena cava, through the right side of the heart, and to the main pulmonary arteries as they branch. A thromboembolus at this location (a “saddle” thromboembolus) is still a relatively common and often undiagnosed cause of sudden death

## **17. Morphological changes of small intestine due to typhoid (enteric) fever**

### **18. Atherosclerosis of aorta with atheromatosis and mural thrombosis**

Fragment of the abdominal aorta grayish pink color. Atheromatous plaques are present on the intimal surface of the abdominal aorta. 'Complicated plaques' are present in the aorta and common iliac arteries. Complicated plaques showing ulceration, calcification, haemorrhage and thrombus formation.

### **19. Fatty dystrophy of liver (“goose” liver)**

Synonym – steatohepatosis.

The mounted specimen consists of a slice of liver. Liver is enlarged, of yellow color, with smooth surface. This patient has significant steatosis. The pale colour is due to the presence of fat vacuoles within the hepatocytes. The liver in such a case is enlarged with a rounded inferior margin, a smooth capsule and a pale yellow brown greasy cut surface. Causes of development : hypoxia (in diseases of the cardiovascular and respiratory systems ) ; intoxication (alcohol, hepatotropic poisons) ; infections (viral hepatitis); endocrine disorders ; nutritional (avitaminosis). Outcome: structure recovery or cirrhosis

### **20. Adenoma of prostate complicated by urethrohydronephrosis**

The prostate is considerably enlarged. Its cut surface shows a creamy, lobulated appearance. There are a number of calculi in the prostatic ducts. The middle lobe has extended into the base of the bladder and the long-standing prostatic obstruction has caused thickening and trabeculation of the bladder wall and hydronephrosis. There is marked dilatation of all of the calyces, with atrophy of the renal papillae. These are the results of ureteric obstruction, which in this case was caused by an adenoma of prostate.

### **21. Cerebral haemorrhage**

Acute intracerebral hemorrhage (arrow). Centered on the right basal ganglia is an intracerebral hemorrhage. Intracerebral hemorrhages are most commonly due to underlying hypertension, and most often occur at the basal ganglia.

### **22. Nodular goiter**

An enlarged thyroid gland. The cut surface of the gland is multilobulated and the lobules vary in size. Glistening colloid can be seen on the surface of some lobules. Elsewhere there is fibrosis, and some of the yellowish areas in the lower poles are areas of calcification. This is the commonest pathology seen in non-functioning goitres. Non-functioning goiters are usually caused by dietary iodine deficiency.

**23. Dry gangrene of foot**

The affected part is dry, shrunken and dark black, resembling the foot of a mummy

**24. Pneumonia complicated by an abscess due to septicopyemia**

**25. Carcinoma of lung, hilar (center) type**

The mounted specimen consists of a slice of lung showing a large grey tumour mass, arising in a main bronchus. The tumour protrudes into and occludes the lumen of the bronchus. There is also significant extension by grey tumour tissue into the surrounding pulmonary parenchyma. The bronchi peripheral to the tumour mass are dilated and filled with mucus. Also present are at least 1 lymph node containing metastatic tumour. The uninvolved lung parenchyma shows mild to moderate anthracosis.

**26. Lymphogranulomatosis (Hodgkin's disease) of paraaortic lymph nodes**

The mounted museum specimen shows a portion of the abdominal aorta. The aorta shows moderate atherosclerosis with numerous atheromatous plaques. A matted mass of enlarged lymph nodes surrounds the aorta. These nodes measure up to 3 cm in size and their cut surfaces show homogenous grey tissue with numerous geographic areas of creamy, yellow necrosis.

**27. Carcinoma of uterus**

In the uterus fundus is defined exo-endophytic formation with villous (cauliflower-like) appearance.

**28. Sarcoma of shin-bone**

Osteogenic sarcoma. The creamy tumour has involved the tibia and has broken through the cortical bone and caused elevation of the periosteum.

**29. Fibrinous pericarditis («hairy heart»)**

Grossly - epicardium dull, scabrous due to fibrin overlay.

The pericardial surface is covered by a thick fibrinous exudate which presents the typical “bread and butter” appearance of fibrinous pericarditis.

It can be a manifestation of endogenous intoxication, systemic autoimmune disease or myocardial infarction. Clinical symptom - noise of pericardial friction .

**30. Mitral stenosis (rheumatic heart disease)**

Mitral valve stenosis. The valve is viewed from the grossly dilated left atrium. The cusps are thickened and adherent, and the orifice is greatly reduced in diameter. The patient had acute rheumatic fever in childhood. This was a common, late complication of acute rheumatic fever before the introduction of penicillin to treat tonsillitis and other infections caused by the b-haemolytic streptococcus. Mitral valvotomy (splitting the stenosed valve cusps with a blade attached to a surgeon's index finger) was one of the first intracardiac operations performed by cardiac surgeons in the 1950s.

**31. Polypoulcerosa septic endocarditis of aortic valve**

Vegetations on the aortic valves

### **32. Purulo-fibrinogenous endomyometritis**

The uterus is enlarged, from the side of the endometrium are observed fibrinous overlays. In the myometrium are defined little whitish areas.

### **33. Hydatidiform [cystic, vesicular, grape] mole**

Conglomerate of cystic structures resembling bunches of grapes. Note variably sized vesicles, no normal placenta and no fetus.

### **34. Fallopian tube pregnancy**

Note the embryo in the blood clot. This is a medical emergency because of the sudden rupture with hemoperitoneum. Ectopic pregnancy should be considered in the differential diagnosis of acute abdominal pain in a woman of childbearing age.

### **35. Cephalohematoma**

Cephalohematoma is one of the most common head injuries associated with assisted vaginal delivery, especially in the case of hard labor that makes necessary the use of instruments such as forceps or vacuum. It occurs in 0.4% to 3.0% of neonates. It is believed that repeated compression of the skull during hard labor damages the emissary and diploic veins, ultimately resulting in a hematoma in the subperiosteal layer of the skull. The majority of cephalohematomas resolve spontaneously within 1 month.

### **36. Thecoma of the ovary**

Grossly - nodal formation of yellowish color. Thecomas or theca cell tumors are benign ovarian neoplasms composed only of theca cells. Histogenetically they are classified as sex cord-stromal tumours. They are typically estrogen-producing and they occur in older women.

This is distinguished from fibroma by the presence of lipid, which gives it a yellow colour.

### **37. Wilms' tumour**

The tumour occupies the whole upper pole of the kidney. Its cut surface shows some firm, homogeneous areas and other areas of necrosis.

### **38. Cerebral abscesses**

These lesions appear similar to abscesses elsewhere in the body. There is a central area of necrotic brain tissue and purulent exudate surrounded by a fibrous capsule

**39. Splenic infarcts** These infarcts are typical of ischemic infarcts: they are based on the capsule, pale, and wedge-shaped. The remaining splenic parenchyma appears dark red

### **40. Squamous cell carcinoma of the larynx**

The subglottic tumour can be seen in the laryngectomy specimen. The patient presented with hoarseness.