VOLGOGRAD STATE
MEDICAL UNIVERSITY
Department of Pathological Anatomy

Atherosclerosis and arteriosclerosis. Hypertonic disease and arteriolosclerosis.

Volgograd

QUESTIONS

Choose one correct answer

1. In the mechanism of hypertensive disease, the leading role is played by
A. Arteriosclerosis.
B. Atherosclerosis.
B. Increased tone of arterioles.
D. Calcification of the middle aortic membrane.
D. Inflammation of the arteries.

2. Myocardial hypertrophy is a result
A. Expansion of the cavities of the heart.
B. Decrease in the number of muscle fibers.
B. Reproduction of cardiomyocytes.
D. Increase in the size of individual fibers.
D. Thickening of the endocardium.

3. Distinguish the following clinical and morphological form of hypertensive disease
A. Mesenteric.
B. Hepatic.
V. Brain.
G. Splenic.
D. Pulmonary.

4. For the renal form of hypertensive disease, the following morphological changes are characteristic
A. Hydronephrosis.
B. Amyloidosis.
B. Pyelonephritis.
D. Arteriolosclerotic nephrosclerosis.
D. Atherosclerotic nephrosclerosis.

5. About hypertrophy of the heart in an adult is said when its mass exceeds
A. 100 g.
B. 200
H. 350
G. 600
D. 750

6. In the malignant course of hypertensive disease, a process develops in the kidneys, which is called
A. Primary wrinkled kidney.
B. Secondary contracted kidney.
B. Nephrosclerosis Pharah.
G. Hydronephrosis.
D. Amyloidosis.

7. Partial ligation of the renal arteries probably leads to
A. To reflex anuria.
B. To persistent hypertension.
B. To kidney necrosis.
D. To hypotension.
D. To transient hypertension.

8. In the chronic course of hypertensive disease, changes in arterioles are of the nature
A. Sclerosis.
B. Fibrinoid necrosis.
B. Hyalinoza.
D. True A and B.
D. True A and B.

9. The increase in heart mass in hypertensive disease is due to
A. An increase in the number of muscle fibers.
B. By increasing the size of each fiber.
B. Increased intermuscular tissue.
D. True A and B.
D. Verno B and C.

10. In hypertensive disease, elastic type arteries develop
A. Atherosclerosis
B. Elastofibrosis.
B. Fibrinoid necrosis.
D. True A and B.
D. True A and B.

11. In the second stage of hypertensive disease with a benign course in the myocardium,
A. Hypertrophy.
B. Cardiosclerosis.
B. Necrosis.
D. True A and B.
D. True A and B.

12. With a benign course of hypertensive disease in the kidneys, changes develop, which are called
A. Secondary contracted kidney.
B. Primary contracted kidney.
B. Nephrosclerosis Pharah.
D. Kimmelfel-Wilson syndrome.
D. Polycystic.

13. The form of acute ischemic heart disease is
A. Cardiosclerosis.
B. Atherosclerosis.
B. Myocardial infarction.
D. Chronic aneurysm of the heart.

14. The form of chronic ischemic heart disease is
A. Cardiosclerosis.
B. Myocardial infarction.
B. Chronic aneurysm of the heart.

D. True A and B.
D. True A and B.

15. What is the cause of death in hypertensive disease?
A. Purulent intoxication.
B. Pyopneumothorax.
B. Hemorrhage in the brain.
D. Fat embolism.
D. Pancreatic necrosis.

16. Atherosclerosis is macroscopically manifested by the development
A. Fat spots and stripes.
B. Fibrous plaques.
B. Complicated lesions (ulceration, thrombosis, hemorrhage) and calcification.
D. Correct A, B and C.
D. Verno B and C.

17. In case of rupture of the wall of an atherosclerotic aortic aneurysm, histologically determine
A. Destruction of elastic fibers.
B. Rupture of the aortic wall.
B. Hemorrhages in the aortic wall.
D. All of the above is true.
D. Verno B and C.

18. In case of hypertension in arterioles and small arteries,
A. Hyalinosis.
B. Arteriosclerosis.
B. Fibrinoid necrosis.
D. All of the above.
D. True A and B.

19. List the clinical and morphological forms of atherosclerosis
A. The functional form of atherosclerosis.
B. Atherosclerosis of the arteries of the lower extremities.
B. Atherosclerosis of the renal arteries.
D. Atherosclerosis of the aorta.
D. Mesenteric form of atherosclerosis.
E. True A and D.
G. True B, C, D and D.

20. Macroscopic characteristics of the aorta in hypertensive disease:
A. Intima looks like pebbled skin.
B. Parietal blood clots.
B. Fibrous plaques in the intima.
D. Circular calcification of the middle membrane.
D. In the ascending department, a saccular aneurysm often develops.
E is correct G and D.
G. Correct A, B and C.

21. Morphology of manifestation of the cerebral form of hypertensive disease:
A. Meningitis.
B. Multiple sclerosis.
B. Hematoma.
D. Ischemic infarction.
D. Cyst.
E. Correct A, B and D.
J. Correct C, D and D.

22. Characteristics of atherocalcinosis in hypertensive disease:
A. Metastatic calcification.
B. Dystrophic calcification.
B. Metabolic calcification.
D. It is accompanied by hypercalcemia.
D. Pathogenetically associated with arteriolosclerotic nephrosclerosis.

23. Changes in arterioles characteristic of hypertensive crisis:
A. Spasm of arterioles.
B. Plasma impregnation.
B. Fibrinoid necrosis.
G. Hyalinosis.
D. Thrombosis.
E. All of the above is true
G. Correct A, B and C.

24. Changes in brain tissue that can develop during a hypertensive crisis:
A. Hemorrhage per diapedesin.
B. Hematoma.
C. Focuses of necrosis.
D. Cysts.
E. Encephalitis.
F. All of the above is true
G. Correct A, B and C.

25. Which of the listed changes correspond to atherosclerosis?
A. Lipid infiltration of significantly thickened aortic intima.
B. Lipid infiltration of a significantly thickened middle lining of the aorta.
B. Necrosis and cystic changes in the middle aortic membrane.
D. Calcification of the middle aortic membrane.
D. Productive vasculitis vasa vasorum.

26. Typical changes in the kidneys in atherosclerosis of the renal arteries:
A. Arteriolosclerotic nephrosclerosis.
B. Atherosclerotic nephrosclerosis.
B. Hydronephrosis.
D. Kidney infarction, scars.
D. Focuses of wedge-shaped atrophy.
E. Correctly A, B and D.
J. True B, D and D.

27. Signs characteristic of the dolipid stage of atherosclerosis?
A. Increased endothelial permeability.
B. Accumulation of acidic glycosaminoglycans in the intima.
B. The emergence of xanthoma cells.
D. Destruction of the basement membrane of the intima.
E. Destruction of collagen and elastic fibers.
E. True A and B.
J. Verno B and G.
H. All of the above is true.

28. Indicate the morphological changes in the heart directly related to atherosclerosis of the coronary arteries.
A. Obliteration of the pericardial cavity.
B. Myocardial infarction.
B. Hairy heart.
D. Aortic heart disease.
D. Myocardial hypertrophy.

29. Specify the process developing in the small intestine with atherosclerosis of the mesenteric artery
A. Gangrene.
B Polyp.
B. Enteritis.
D. Hemorrhage.
D. Ulcer.

30. In the stage of lipoidosis in atherosclerosis, lipids are absorbed
A. Virchow cells.
B. Xanthoma cells.
B. Cells of Pirogov-Langhans.
D. Epithelioid cells.
D. Friedlander Diplobacillus

Situational tasks.

Situational task 1.

The patient, 39 years old, complains of severe headaches in the occipital region. From the anamnesis it was found that the pain appeared about 5 months ago. Prior to this, the patient's condition was satisfactory, but periodically there was an increase in blood pressure. On examination, the skin and visible mucous membranes are hyperemic. BP is 185/125 mm Hg, the liver is enlarged. The legs and feet are pasty. A blood test revealed erythrocytosis (6.7 * 1012), leukocytosis (11.2 * 109), thrombocytosis (650 * 109).
1. What forms of pathology have developed in the patient ?. Argument your answer.
2. Can we conclude that the patient, besides other forms of pathology, has arterial hypertension? What additional research is needed to determine its pathogenesis?
3. Is it possible a pathogenetic relationship between elevated blood pressure and the existing changes in the blood in this case? Justify the answer.

Situational task 2.

Patient X, 37 years old, at a doctor's appointment complains of episodes of severe headache, flashing of "flies" and the appearance of a "mesh" before the eyes, flushing of the face, increased sweating, dizziness, palpitations and pain in the region of the heart, large tremors, feeling of unmotivated anxiety when performing hard physical work. At rest, blood pressure 136/85 mm Hg, heart rate 80 beats / min, blood and urine test data were unchanged. With physical exertion, blood pressure 230/165 mm Hg, heart rate 188 beats / min, in the blood test glucose 10.5 mmol / l, in the analysis of urine the level of catecholamines and their metabolites is increased. The radiograph of the lumbar region shows a significant increase in the size of the right adrenal gland.
1. Name and justify the possible forms of pathology in the patient? Justify the answer.

2. What are the causes and pathogenesis of blood pressure elevations in this patient? Argument your answer.
3. What is the mechanism of development of each of the symptoms?

Situational task 3.
Patient A., 57 years old, head of a large enterprise, was hospitalized according to the results of a preventive examination, during which it was revealed: BP 170 \ 100 mm Hg. , Heart rate 89, rhythmic pulse., Expansion of the borders of the heart to the left., Strengthening of the apical point, increase in BCC by 20%. The ECG shows signs of left ventricular hypertrophy. Increased tortuosity of the vascular pattern of the fundus and narrowing of the arterioles. In a blood test, hypernatremia, aldosterone levels within normal limits, hypercholesterolemia. The patient is emotional, agitated, does not smoke.
1. What form of pathology developed in this patient?
2. What are the most probable causes and main links of pathogenesis?
3. How can you explain the fact of the development of hypernatremia and hypervolemia with a normal content of aldosterone?
4. What complications of the disease are possible in this patient?

List of recommended literature:
Basic literature:

1. "Basic pathology" Vinay Kumar, Ramzi S. Cotran, Stanley L. Robbins, 1997.

Additional literature:

1. "Pathology. Quick Review and MCQs" Harsh Mohan, 2004.
2. "Textbook of Pathology " Harsh Mohan, 2002.
3. "General and Systemic Pathology" Joseph Hunter, 2002.
4. "General and Systematic Pathology " Ed. J.C.E. Underwood – Edinburgh: Churchill Livingstone, 1996 (2^{th}).
5. "Histology for Pathologist" Ed. S.S.Sternberg – Philadelphia: Lippincott Raven Publ, 1997 (2^{th}).
6. "Histopathology. A Color Atlas and Textbook" Damjanov I., McCue P.A. – Baltimore, Philadelphia, London, Paris etc.: Williams and Wilkins, A Waverly Co., 1996.
7. "Muir's Textbook of Pathology" Eds. R.N.M. MacSween, K. Whaley London: ELBS, 1994 (14^{th}).
8. "Pathology" Eds. Rubin, J.L. Farber – Philadelphia: Lippincott Raven Publ, 1998 (3^{th}).
9. "Pathology Illustrated" Govan A.D.T., Macfarlane P.S., Callander R. – Edinburgh: Churchill Livingstone, 1995 (4^{th}).
10. "Robbins Pathologic Basic of Disease" Eds. R.S.Cotran, V.Kumar, T.Collins – Philadelphia, London, Toronto, Montreal, Sydney, Tokyo: W.B.Saunders Co., 1998 (6^{th}).
11. "Wheater's Basic Histopathology. A Color Atlas and Text" Burkitt H.G., Stevens A.J.S.L., Young B. – Edinburgh: Churchill Livingstone, 1996 (3^{th}).
12. "Color Atlas of Anatomical Pathology" Cooke R.A., Steward B. – Edinburgh: Churchill Livingstone, 1995 (10^{th}).
13. "General Pathology " Walter J.B., Talbot I.C. – Edinburgh: Churchill Livingstone, 1996 (7^{th}).
14. "Concise Pathology" Parakrama Chandrasoma, Glive R. Taylor.
15. "Pathology" Virginia A. LiVolsi, Maria J. Merino, John S. J. Brooks, Scott H. Saul, John E. Tomaszewski, 1994.

16. “Short lectures on pathology” Zagoroulko A., 2002
17. “Robbins pathologic basis of diseases” Cotran R., Kumar V., Collins T.
18. “General pathology” Dr. Fatma Hafez, 1979.
19. “Anderson’s Pathology ” Damjanov I., Linder J. – St. Louis: Mosby Inc., 1995 (10th).

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