

VOLGOGRAD STATE
MEDICAL UNIVERSITY
Department of Pathological Anatomy

**Morphology of pigment and mineral metabolism disorders (mixed dystrophies).
Morphology of pathological accumulation of endogenous and exogenous pigments.
Hemosiderosis, hemochromatosis. Jaundice. Pathological calcification.**

QUESTIONS

Choose one correct answer

1. . The accumulation of hemosiderin leads to organ dysfunction in:

- a) hemosiderosis,
- b) hemochromatosis,
- c) hemomelanosis,
- d) hemophilia.

2. Hemosiderin in tissues reveals the reaction:

- a) CHIC (PAS),
- b) Wasserman,
- c) Brachet,
- d) Felgen,
- e) Perls.

3. Brown induration of the lungs is accompanied by the accumulation of:

- a) hemosiderin,
- b) melanin,
- c) coal,
- d) lipofuscin,
- e) silicon dioxide.

4. Changes in the lungs and regional lymph nodes with the accumulation of coal particles in them are called:

- a) hemosiderosis,
- b) anthracosis,
- c) melanosis,
- d) lipofuscinosis,
- e) silicosis.

5. Metastatic calcification is caused by:

- a) hypercalcemia,
- b) hypocalcemia,
- c) inflammation,
- d) foci of necrosis.

6. Hereditary storage diseases are called:

- a) thesaurismoses,
- b) systemic,
- c) autoimmune,
- d) cerebrovascular,
- e) immunocomplex.

7. The widespread acquired hypermelanosis develops with the disease:

- a) Alzheimer's,
- b) Crohn,
- c) Addison,
- d) Graves.

Choose one or more correct answers

8. Microscopic features of pulmonary hemosiderosis

- 1) granulomas in the walls of the bronchi
- 2) inflammatory infiltration
- 3) proliferation of connective tissue
- 4) chronic venous congestion
- 5) multiple small hemorrhages
- 6) hemosiderin in siderophages and sideroblasts

9. General hemosiderosis occurs when

- 1) myocardial diseases
- 2) blood diseases
- 3) infectious diseases
- 4) diapedetic hemorrhage
- 5) transfusion of incompatible blood
- 6) poisoning with hemolytic poisons

10. Hemosiderosis of the lungs - a manifestation

- 1) cachexia
- 2) brown atrophy
- 3) general hemosiderosis
- 4) local hemosiderosis
- 5) suprahepatic jaundice

11. Condition of occurrence of metastatic calcification

- 1) hypoxia
- 2) atherosclerosis
- 3) foci of necrosis
- 4) hypocalcemia
- 5) hypercalcemia

12. With degenerative calcification, the level of calcium in the blood

- 1) increases
- 2) does not change
- 3) decreases

13. Features of metastatic calcification

- 1) hypercalcemia
- 2) the level of calcium in the blood does not change
- 3) calcium is deposited in the foci of necrosis
- 4) calcium salts are in the form of amorphous deposits
- 5) calcium salts are deposited in various organs

14. Petrification in the outcome of caseous necrosis occurs when

- 1) rheumatism
- 2) tuberculosis
- 3) hemosiderosis
- 4) idiopathic hypercalcemia.

Situational tasks.

Situational task 1.

Patient K., 48 years old, suffered from rheumatic heart disease (mitral stenosis) for a long time, died from progressive cardiovascular failure. Autopsy: the left ventricle of the heart is reduced in volume, the cusps of the mitral valve are sharply thickened, inactive, dense, gray-pink in color (similar to hyaline cartilage), cut with a crunch; lungs - enlarged, dense, brownish-red, histologically: in the lumens of the alveoli - erythrocytes, free-lying brownish-brown pigment, macrophages. In the cytoplasm of which the pigment is brown-brown.

Questions: 1) What pathological process took place in the leaflets of the mitral valve?
2) What histochemical stains should be used to identify the pigment found in the lungs?
H) What pathological process took place in the lungs?
4) What are the causes and mechanisms of the development of the pathological process in the lungs?

Situational task 2.

A histological examination of the hemorrhage site revealed that in the center of the hemorrhage there are bright orange plates, at the hemorrhage periphery there are accumulations of brownish-brown pigment.

Questions: 1) What pigments were found in the area of hemorrhage?
2) What histochemical stains should be used to identify the described pigments?

Situational task 3.

Patient Sh., 69 years old, suffered from stomach cancer with metastases to internal organs for a long time, died of cancer cachexia. Autopsy: the heart is reduced in size, dense, brown; histological examination revealed yellow pigment granules in the cytoplasm of cardiomyocytes.

Questions: 1) What pathological process took place in the myocardium?
2) What are the causes and mechanisms of development of the described pathological process?

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 (2th).
5. "Histology for Pathologist" Ed. S.S. Sternberg – Philadelphia: Lippincott Raven Publ, 1997 (2th).
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 (14th).
8. "Pathology" Eds. Rubin, J.L. Farber – Philadelphia: Lippincott Raven Publ, 1998 (3th).

9. "Pathology Illustrated" Govan A.D.T., Macfarlane P.S., Callander R. – Edinburgh: Churchill Livingstone, 1995 (4th).
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 (6th).
11. "Wheater's Basic Histopathology. A Color Atlas and Text" Burkitt H.G., Stevens A.J.S.L., Young B. – Edinburgh: Churchill Livingstone, 1996 (3th).
12. "Color Atlas of Anatomical Pathology" Cooke R.A., Steward B. – Edinburgh: Churchill Livingstone, 1995 (10th).
13. "General Pathology " Walter J.B., Talbot I.C. – Edinburgh: Churchill Livingstone, 1996 (7th).
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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