

TOPIC OF THE PRACTICAL LESSON № 4:

Pleural tuberculosis. TB pleuritis and empyema. Pathogenesis, pathomorphology, clinic, diagnosis, differential diagnosis, treatment, consequences. Complications of secondary tuberculosis: hemoptysis, hemorrhage, spontaneous pneumothorax, chronic cor pulmonare, amyloidosis of internal organs.

Actuality of theme. In recent years, the incidence of tuberculous pleurisy among the contingents of patients with anti-tuberculosis dispensaries is about 10 - 12%; the frequency and severity of complications increased significantly respiratory tuberculosis. Carrying out anti-tuberculosis chemotherapy significantly prolonged the life of incurable patients with tuberculosis, but also increased the frequency of various complications from the chronicity of the tuberculosis process, which requires adequate therapy and, in some cases, emergency care.

The purpose of the lesson: to teach students on the basis of anamnesis, clinical, radiological and other auxiliary methods of examination to diagnose tuberculous pleurisy, the nature of complications of tuberculosis of the respiratory organs and prescribe appropriate treatment.

The student must know:

- pathogenesis of tuberculous pleurisy;
- clinical picture, course, diagnostic methods, differential diagnosis tuberculous pleurisy;
- pathogenesis of various complications of respiratory tuberculosis;
- clinical picture, methods of diagnosis of complications (hemoptysis and pulmonary bleeding, spontaneous pneumothorax, chronic pulmonary heart disease, amyloidosis internal organs);
- principles of treatment of tuberculous pleurisy and complications of tuberculosis.

The student must be able to:

- collect a history of the disease;
- examine the patient and identify the main symptoms of respiratory tuberculosis and its complications;
- to detect and interpret pathological changes on chest radiographs;
- substantiate the clinical diagnosis, diagnose complications;
- to conduct a differential diagnosis of tuberculosis and its complications;
- prescribe treatment to the patient;
- provide emergency care to a patient with pulmonary hemorrhage, hemoptysis, spontaneous pneumothorax.

Interdisciplinary integration.

Subject	Know	Be able
Previous:		
Anatomy	Respiratory anatomy.	
Physiology	Respiratory physiology.	
Microbiology	Morphological structure, properties, pathogenicity and virulence of MBT, their methods detection in sputum and others pathological materials.	Collect material for bacteriological research. Evaluate the results obtained.
Pathological anatomy	Pathomorphological changes in organs breathing in tuberculosis.	
Pathological physiology	Pathophysiology of diseases respiratory system.	
Pharmacology	Classification and mechanisms of action drugs that used when treatment of complications tuberculosis.	
Propaedeutics internal diseases	Methodology of the objective examination of the patient.	Make objective examination of the patient, evaluate the results obtained.
Radiology	Radiological signs and syndromes.	Interpret data radiological examination.
The following:		
Internal medicine	Clinical manifestations, diagnosis pleurisy, chronic pulmonary heart, amyloidosis internal organs, spontaneous pneumothorax, hemoptysis.	Differentiate from non-specific complications organ diseases breath.
Intensive care	Clinical manifestations, diagnosis pulmonary hemorrhage.	Provide urgent help with pulmonary bleeding, emoptysis.
Intra-subject integration:	Clinical manifestations and radiological picture of others clinical forms of tuberculosis/	Differentiate from tuberculous pleurisy.

Content of the lesson topic:

Pathogenesis, pathomorphology and classification of tuberculous pleurisy. The main clinical syndromes of pleurisy. Modern diagnostic methods. Show to conducting a pleural puncture, a technique of its carrying out. Differential diagnosis of tuberculous

pleurisy with pleurisy in pneumonia, tumors pleurisy, cardiogenic effusions. Treatment. Consequences.

Physico - biochemical characteristics of transudate and exudates

Characteristics of effusion	Transudate	Exudate
Transparency	Transparent	Transparent
Color	Pale yellow	Yellow; yellow-red; red; white
Consistence	Liquid	Liquid; creamy, crumb - similar
Smell	No	No, sometimes rotten
Specific weight	Less than 1015	More than 1015
Protein (g/l)	Less than 25-30	More than 25-30
Rivalt's test	Negative	Positive
Lactate dehydrogenase activity	<1.6 mmol/(l.h)	>1.6 mmol/(l.h)
The content of cells	<1 * 10 ⁹ /l	> 1 * 10 ⁹ /l
Content ratio in the pleural fluid and serum: - protein - LDH	<0.5 <0,6	>0.5 >0,6

Complications of respiratory tuberculosis: respiratory failure, hemoptysis, pulmonary hemorrhage, spontaneous pneumothorax, chronic pulmonary heart, atelectasis, amyloidosis of internal organs, bronchial and thoracic fistulas.

Hemoptysis and pulmonary hemorrhage. Pathogenesis (rupture or erosion of blood vessels, increased vascular permeability, granulation damage, hypertension in the system pulmonary artery, disorders of the coagulation system, activation fibrinolysis). Diagnosis. Treatment: conservative (reduction of increased pressure in the pulmonary artery system, activation of blood clot formation, inhibition of fibrinolysis, reduction of vascular wall permeability), endoscopic, surgical. Complications of pulmonary hemorrhage (asphyxia, aspiration pneumonia, atelectasis, hypovolemia, anemia, hypoproteinemia).

Indicative map - instructions for mastering the skills of emergency help with hemoptysis and pulmonary hemorrhage.

Tasks	Instructions for the task	Note
1. Create sick conditions maximum physical and mental calm.	It is necessary to calm the patient, scared actions that occur. Position in the bed should be half-seen since it facilitates coughing sputum and blood clots that	Watch out for intona-tion their language.

	accumulated in the airways. If hemoptysis scanty, full physical rest is not required.	
2. Strict compliance rational therapeutic tactics.	Given that the main immediate causes of hemoptysis and pulmonary hemorrhage is a rupture of the wall pulmonary blood vessel due hypertension in the small circle of blood circulation (almost 100% of cases), activation fibrinolysis (45%), disturbances in the system blood clotting (30%) and increase permeability of the vessel wall (15%), then in first of all it is necessary to appoint all antispasmodics (euphylline, papaverine, noshpu, atropine), ganglioblockers (pyrilene, benzhexone), in half of the cases inhibitors of fibrinolysis aminocapro-nova, amben, contracal), every third- drugs that increase the ability of blood to clot (hemophobin, dicynon, fibrinogen, thromboplastin, thrombin, vikasol) and less drugs to reduce permeability the walls of the pulmonary vessel (gluconate calcium, galascorbin, ascorbic acid, sodium ascorbate).	In cases asphyxia (because of blockages respiratory blood vessels, spilled) resort to suction blood from the trachea catheter, but more effectively drainage bronchi at bronchoscopy or intubation.
3. Immediate surgically help.	At inefficiency of medicines means, as well as in conditions that are directly life-threatening the patient is shown surgery, if there are no serious contraindications.	The main operation is lung resection, much less others operations.

Spontaneous pneumothorax. Pathogenesis, clinic, diagnosis. Closed, open, valvular pneumothorax. Medical tactics.

Chronic pulmonary heart. Pathogenesis, classification, clinic, diagnosis.

Electrocardiographic criteria of chronic pulmonary heart disease. Treatment.

Amyloidosis of internal organs. Forms and stages of amyloidosis. Clinic. Treatment.

Plan and organizational structure of the lesson:

Preparatory stage (10-20% of working time): organization of classes, goal setting, control of the initial level of knowledge.

The main stage (60-90% of working time): the formation of professional skills and skills. Students independently and under the supervision of the teacher carry out

supervision of the patient, collect the anamnesis, master the skills of the objective review, describe and interpret radiographs, substantiate clinical diagnosis.

The final stage (10-20% of working time): level control and correction professional skills and abilities, summarizing, homework.

Materials of methodical providing of employment.

Test control.

1. Which variant of tuberculous pleurisy is the most common in frequency?
 - A. Exudate with the presence of serous or serous-hemorrhagic fluid.
 - V. Chilozny.
 - S. Hemorrhagic.
 - D. Purulent.
 - E. -

2. Which research method is crucial in the diagnosis of pleurisy any etiology?
 - A. X-ray.
 - B. Ultrasound diagnostics.
 - C. Pleural puncture.
 - D. Tuberculin tests.
 - E. Bronchoscopy.

3. What is the nature of the exudate in the tuberculous etiology of pleurisy?
 - A. Mostly neutrophilic.
 - B. Mostly lymphocytic.
 - S. Monocytic.
 - D. Hilozny.
 - E. Macrophage.

4. What is the main cause of profuse pulmonary hemorrhage in patients with pulmonary tuberculosis?
 - A. Pulmonary artery thrombosis.
 - B. Varicose blood vessels of the lungs.
 - C. Rupture of a blood vessel.
 - D. Activation of fibrinolysis.
 - E. Disorders in the blood coagulation system.

5. What is the immediate cause of death in pulmonary hemorrhage in patients with is pulmonary tuberculosis the most common?
 - A. Anemia.
 - B. Asphyxia.

- C. Aspiration pneumonia.
- D. Atelectasis.
- E. Progression of tuberculosis.

6. At the man of 46 years during cough through a mouth 200,0 ml were allocated bright red, frothy blood. From which organ can there be such bleeding?

- A. Stomach.
- B. Clear.
- S. Nose.
- D. Nasopharynx.
- E. Lungs.

7. What is the emergency care for pneumothorax?

- A. Fibrobronchoscopy.
- B. Artificial ventilation.
- C. Breathing exercises.
- D. Drainage of the pleural cavity.
- E. Steady bed rest.

8. What form of tuberculosis is usually accompanied by the formation chronic pulmonary heart disease?

- A. Primary forms of tuberculosis.
- B. Miliary tuberculosis.
- S. Tuberculoma with a progressive course.
- D. Fibrous-cavernous tuberculosis.
- E. All of the above.

9. A 30-year-old patient has had tuberculosis for 7 years. Two years ago diagnosed with fibro-cavernous pulmonary tuberculosis, MBT+. Half year therefore, the patient developed shortness of breath during exercise, which gradually increased. Objective: respiratory rate - 24 per minute, heart rate-86 beats per minute. Heart tones are rhythmic, above the pulmonary artery the accent of the II tone is listened, the liver at a palpation is painless, acts from under edge of the costal arch by 2 cm. What complication of tuberculosis did the patient have?

- A. Spontaneous pneumothorax.
- B. Pulmonary edema.
- C. Chronic pulmonary heart.
- D. Amyloidosis.
- E. Atelectasis.

10. What is the most common localization of amyloidosis in tuberculosis?

- A. Lungs.
- B. Heart.
- S. Liver.
- D. Kidneys.
- E. Nervous system.

Approximate map for the organization of independent work of students with educational literature:

Educational tasks	Instructions for the task	Answer
Examine: Tuberculous pleurisy	Classification, clinic, course, diagnostics, differential diagnostics.	
Pulmonary hemorrhage, hemoptysis	Definitions, reasons. Clinical manifestations, diagnosis and treatment.	
Spontaneous pneumothorax	Definition. Pathogenesis, types, diagnosis and treatment.	
Chronic pulmonary heart (CPH)	Pathogenesis, stages, clinic, diagnosis and treatment.	
Internal amyloidosis bodies	Forms, stages. Clinic, treatment.	

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