**State budget institution**

**higher vocational education**

**Orenburg State Medical Academy of the Ministry of health of Russia»**

Faculty of surgery.

Tutorial to prepare for practical classes in the Faculty of surgery for the students of the course 4 medical, Pediatric, medical-preventive and dental faculties

SUPPURATIVE LUNG DISEASE

Orenburg, 2013

UDC 616.24-002.3 (075.8)

BBC 54,123 I 73

W16

Authors: Phd Y. Soldatov

Associate Professor M. Avchenko

Associate Professor D.b. Demin

Associate Professor N. Kondrashov

Assisteni Y.a. Sobolev

Nagnoitelnye lung disease. Tutorial. -Orenburg. -2013.-34 p.

Abstract:

This manual includes materials on the most important issues on the etiology, pathogenesis, diagnosis and treatment of diseases such as lung abscess, bronhoektatical disease and gangrene. Selected and extensively broken up algorithm for differential diagnosis of these diseases. There are illustrations of the self-study tests, clinical case challenge. The bibliography contains sources that will fully prepare for the lesson.

The manual is intended to prepare for practical classes in the Faculty of Surgery students 4 course medical, Pediatric, medical-preventive and dental faculties.

Reviewers:

Chugunov A.n., Professor, merited doctor of the RUSSIAN FEDERATION, head of the Department of endoscopy, General and endoscopic surgery GBOU HPE Kazan State Medical Academy of the Ministry of health of Russia.

Tarasenko V. m.d., Professor, merited doctor of the RUSSIAN FEDERATION, head of the Department of hospital surgery and Urology GBOU HPE OrGMA of Ministry of health of Russia.

Tutorial considered and recommended for printing FIGURE OrGMA.

Table of contents

|  |  |
| --- | --- |
|  | P. |
| 1. Introduction | 4 |
| 2. Clinical Anatomy of the lungs | 5 |
| 3. The etiology | 7 |
| 4. Pathogenesis | 7 |
| 5. classification | 9 |
| 6. The clinical picture  6.1. the clinic of acute abscess and lung gangrene  6.2. the clinic bronhojektazij.  6.3. complications | 10  10  11  13 |
| 7. nagnoitelnyh Diagnosis of lung diseases | 13 |
| 8. Differential diagnosis | 17 |
| 9. Treatment of acute nagnoitelnyh pulmonary disease  10. questions for self-study | 20  29 |
| 11. Test tasks | 29 |
| 12. Situational tasks | 37 |
| 13. Recommended reading | 43 |

Introduction

Acute Pulmonary sepsis occur more often in adulthood, mainly in men who get sick in 3-4 times more often than women, because of alcohol abuse, smoking, greater susceptibility to pereohlazhdenijam, as well as professional vrednostjam. The right lung is affected 60%, 34% and 6% left defeat turns out to be bilateral. Increased frequency of lesions of the right lung due to the peculiarities of his buildings: wide right main bronchus is a continuation of the trachea, which contributes to the right lung of the infected material.

Acute lung abscess is purulent or melting gnilostnoe plots of lung tissue with the formation of pus-filled cavity and surrounded by perifocal inflammatory infiltration of lung tissue with subsequent formation of piogenna capsules.

Gangrene of the lung is a purulent-rot decay nekrotizirovannoj a share or a total lightweight, not separated from the surrounding tissue capsule and a propensity for progression.

Gangrenous abscess is a suppurative rot decay plot of lung tissue (share segment), but characterized by a propensity for sequestration and distinguishable from unaffected areas. Gangrenous abscess sometimes called otgranichennoj gangrene.

Bronchiectasic-irreversible morphologic changes (extension, deformation) and the functional failure of the bronchi. Among other lung diseases make up 10% of bronchiectasic. More than half of the patients it is diagnosed before the age of 5 years, and 30% of patients in the first year of life. In adulthood, men get sick in 1.3-1.9 times more often than women.

Within this tutorial assumes development of students following competencies in accordance with the requirements of the GEF 3 generation: OK-1, PC-5, 17, 19, 20, 27.

**The purpose of the study topics:** grasp the etiopathogenesis, classification, clinical picture, complications of acute suppurative destructive lung diseases. Master the methods of examination, diagnosis, differential diagnosis of nagnoitelnyh diseases of the lungs.

2.Clinical Anatomy of the lungs

**The bronchi.** Right main bronchus departs from the trachea under more acute angle than the left, and serves as its continuation. This causes more frequent being hit by debris, run-on vomit, aspiration of small food particles and plaque that makes more frequent defeat right lung and bronchi pathological processes.

The place of separation of the trachea to the main bronchi corresponds to bottom jutting out into the lumen of the trachea Carina (carina tracheae). When metastatic tumor in the lymph nodes, the subcarinal trachea, bronchi divide angle becomes more blunt. Over the left bronchus is located above the right aortic arch is unpaired Vienna (a branch of the superior vena cava). The main bronchi divide light shares respectively: right-to-left — three on the two branches. Continuing to share the segmental and subsegmentarnye branch (bronchi IV order), they are reduced in diameter, moving into smaller bronchi, Bronchioles and then.

**Segmental lung structure.** Development of Lung Surgery, improving diagnosis and topical opened up vast opportunities for isolated removing the affected part of the lung at maximum preservation of healthy parts of it have led to the need for smaller anatomohirurgicheskih units — bronchopulmonary segments.

Under bronhopulmonalnym segment is accepted to understand part of the pulmonary lobe, bronchus ventilated third order stemming from each bronchus bronhopulmonalnyj segment has a bronchial-vascular leg whose elements are closely linked anatomically and functionally. The composition of the bronchial-vascular legs usually includes: one segmental bronchus and segmental artery. Vessels are more variability compared to the bronchial tubes, and in junctions of segments are often mezhsegmentarnye of Vienna, common to the two adjacent segments. Form segments compared to the top of the pyramid, which is directed to the gate of light, and the base to the surface.

International nomenclature allocates 10 segments in the right lung and the left segments 8. Each one is assigned a numeric designation and given a name in accordance with the location of each of the lobes of the lung.

|  |  |
| --- | --- |
| Segments right lung: | Left lung segments: |
| Top share  1-apical  2-rear  3-front | Top share  1-2-Verhushechnozadnij  3-front  4-verhnejazychkovyj  5-nizhnejazychkovyj  6-top |
| The average proportion of  4-external  5-internal |
| The lower the percentage  6-top  7-internal (parakardi model)  8-perednebazalnyj  9-naruzhnobazalnyj  10-zadnebazalnyj | The lower the percentage  8-perednebazalnyj  9-external-basal  10-zadnebazalnyj |

|  |  |
| --- | --- |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
| Figure. 1 the relationship of vessels and bronchi  right lung on separation mezhdolevyh  cracks. Rear view:*1* -upper proportion; *2* — the trachea; *3* -pulmonary artery;  *4* is a branch of the pulmonary artery to the upper lobe; 5 is average;  *6* is a branch of the pulmonary artery to the median lobe; 7-lower proportion;  *8* is the upper pulmonary vein |  |
|  |  |

**3. The etiology**

3.1.the etiology of lung abscess

Among the causes of acute pulmonary suppurations leading role played by non-sporogenous anaerobic. Of purulent foci most often secrete bakteroida, peptokocchi, peptostreptokocchi, Fusobacterium and others, i.e. flora, usually kolonizirujushhuju nazofaringialnuju region. In acute abscesse and lung gangrene non-sporogenous anaerobes are always found in association with aerobic strains of complex public health services (Pseudomonas aeruginosa, Escherichia coli , Klebsiella pneumoniae, Staphylococcus aureus).

3.2.the etiology of bronhojektazij

There are two known development theory bronchiectasic-innate and adaptive nature of the disease.

Proof of the innate nature of the disease are the identification of disease in early childhood, morphological data, identification of this pathology in twins and their frequent combination with other explicitly congenital malformations.

The theory of acquired origin of this pathology believes the primary etiological factor genetically deterministic inferiority bronchus tree, which in conjunction with the violation of bronchial obstruction and the emergence of infectious the inflammation causes the bronchial deformation resistant.

4.nagnoitelnyh lung disease Pathogenesis

4.1.Pathogenesis of lung abscess

Formed in a lightweight, but not yet drenirujushhijsja abscess is a source of severe purulent intoxication. Involvement in inflammatory process pleural leaves increase pain. In typical cases, the first phase of Pyo-necrotic melting light lasts 6-8 days and then breakout occurs in the left bronchi and the onset of the second phase-the phase of open pulmonary abscess. The further course of the disease is determined by the conditions of the drainage of the abscess. With adequate drainage detachable phlegm become mucopurulent, number of decreases and can sometimes stops completely. The walls of the cavity spadajutsja, on the site of the scar formed abscess or pnevmoskleroza. Poor drainage of the abscess in cavity it sequesters formed and accumulates pus. Large cavity destruction even if sufficient bronhialnom draining may not spadatsja. After weakening inflammatory phenomena the inner surface of the cavity jepiteliziruetsja, a false cyst.

4.2.pathogenesis of bronhojektazij

Most often develop on the background of bronchiectasic obturacionnogo atelectasis, associated with violation othozdenia patients and its delay in the bronchi. This contributed to the bronchial walls Dystrophic changes, violation of their innervation, the loss of contractile function influenced by inflammatory processes, as in the bronchus and peribronhialnyh tissues. When inflammation and sclerotic changes in bronchial walls lose their tone, entering the tree loses the filtering function that results in an overflow of the bronchi and their accumulating inside infected sputum. As the ventilation-perfusion violations due to pnevmoskleroza and pnevmofibroza in this area, as well as emphysema lung sites unaffected in patients gradually progresses legern-serdecnaya insufficient. In General, the left lung is affected in 2-3 times more often than right. In childhood dominated by left-handed bronchiectasic. Since 20 years, frequency of lesions of the right and left lung is aligned, and after 30 years, is dominated by the right processes. The predominance of right-handed bronhojektazij localization in patients over 30 years due to more frequent lesion of bronchus upper and middle lobes of the right lung. Bilateral lesions are observed equally often in all ages. Characterized by predominantly nizhnedolevaja localization process: the lower the proportion of left is amazed about nine right-six out of ten patients suffering from bronhojektazijami. Nizhnedolevye bronchiectasic often combined with the defeat of the average percentage of right and Reed segments on the left. Generalized form of the disease with the total defeat of both lungs are found in approximately 6% of patients.

Involved in the process part of the light decreases in volume becomes full, a little air and dense. Bronchi enlarged and deformed in their lumen is found an abundance of mucus and pus. Mucosa in ulcerated wound clearance bronchi Act granulation and polipovidnye sprawl; muscular and elastic fabric walls bronchus places absolutely no. Against the backdrop of sclerotic changes in the wall of the bronchi and peribronhialnyh tissues have expressed infiltration of leukocytes, lymphocytes, plasma cells and endings. Richly represented by a network of lung-bronchial vascular anastomoses.

5.Clinical classification of pulmonary suppurations

Classification of nagnoitelnyh lung disease takes into account the reason for defeat, clinico-morphological characterization and presence of complications.

5.1 classification of abscess and lung gangrene

     (I) Etiology.

Postpneumonic

Post-traumatic

Aspiration

Based obturation

Hematopoietic

          (II) Clinico-morphological characteristics.

Acute abscess: single, multiple (single-sided, double-sided)

Gangrene of the lung: limited (gangrenous abscess), common

     (III) Complications:

Empiema pleura (acute, chronic)

Lung haemorrhage

Aspiration of the opposite lung inflammation

Severe sepsis, septic shock

5.2.Classification bronhojektazij

1.origin: primary (congenital) and secondary (acquired).

2.by type of bronchiectasis: cylindrical, saccular, kistopodobnye and mixed.

3.disseminate: limited and common, unilateral and bilateral (indicating the precise localization on segments).

4.On the severity of clinical manifestations: with nevarajenna symptoms, mild, srednetagelaya, heavy and hard, complicated form.

5.for clinical flow: phase of remission and exacerbation phase.

6.clinical presentation and diagnosis

6.1. the clinic ABSCESS and LUNG GANGRENE

ACUTE LUNG ABSCESS. Clinical manifestation of acute lung abscess is always preceded by acute pneumonia of various etiologies. Clinic depends on the stage. Development abscedirovanie light degrades the general condition of the patient that is seen increasing weakness, fever to 39-40 degrees. Chest pain appear on the side of the lesion, which amplified breathing. Cough in this phase unproductive. In the second phase after the breakout in the abscess, purulent allocation notes bronchus sputum suddenly sometimes mouth full. After that, the general condition of the patient is improving, few signs of intoxication are reduced, reduced body temperature.

During a physical examination of the patient with acute lung by Mark paleness, cianotichnost lips, shallow breathing. When percussion sound by shortening, if auscultation easing breathing, dry and moist rales.

LUNG GANGRENE. The condition of the patient with gangrene light even more difficult than in abscesse. Pronounced weakness, frequent shallow breathing, high body temperature gekticheskaja. Sick depleted, skin pallor with sinjushnym shade. The patient takes a forced position-sitting leaning on the elongated hands. The rib cage on the side of the lesion is not involved in respiration, intercostal gaps narrowed. The patient continuously, a mouth full of otkashlivaet zlovonnuju purulent sputum with small sekvestrami of lung tissue. When percussion taped sound shortening the affected light. Auskultativno is determined by the sharp weakening of the respiratory system or lack thereof. Easy kontrlateralnym heard scattered over dry and moist rales (due to aspiration).

CHRONIC LUNG ABSCESS. The clinical presentation of chronic lung abscess is dependent on the phase of the clinical course of abscess-remission or exacerbation.

Remission in clinical manifestation of chronic abscess is minimal. Complaints of cough with moderate amounts of mucopurulent sputum, weakness, sweating, weight loss.

Stage of exacerbation is characterized by fever, cough, shortness of breath and chest pain. Number of sputum increases. It acquires an unpleasant smell, joins hemoptysis.

6.2 BronhojektazIJ CLINIC

      Bronchiectasic characterized by lengthy and periodic (mostly in spring and autumn) exacerbations. In most patients the starting point of the occurrence of the disease is pneumonia or bronchitis. In the case of bronhojektazij after once migrated acute pneumonia or bronchitis a long time continue wet cough with mucopurulent sputum, especially pronounced in the morning, evening subfebrilitet, anorexia, gradually increasing paleness, astenization, general weakness. Periodically the disease escalates. After such exacerbations remain cough with phlegm, shortness of breath, malaise. Some patients recovering from acute pneumonia cough develops subtly, number of sputum increases gradually by exacerbations in the early years of the disease. Over time this may mistakenly be considered as chronic bronchitis, which often makes the true late diagnosis of the disease.

Approximately one of the six patients getting the disease is characterized by the fact that against the background of relative prosperity suddenly cough with purulent or mucopurulent sputum that has an unpleasant odor, and the short time of onset radiographically detected significant changes in the lungs. Often the emergence of typical clinical picture bronhojektazij precede flu, acute respiratory infections, measles, whooping cough, etc.

Major complaints when bronhojektazijah are coughing up sputum, hemoptysis, discomfort and pain in the chest on the side of the lesion, shortness of breath, fever, sweating, decreased performance, weight loss and weakness.

In as the most typical and early symptom of the disease acts cough with phlegm, which is celebrated in all cases usually cough intensifies in the morning or just after the start of physical work and accompanied by the patient amounts of phlegm. In times of increasing disease phlegm purulent or muco-purulent, fetid. The amount may reach 0.5 l or more per day. During remission phlegm becomes slimy or mucopurulent nature easily, its quantity decreases significantly. Characteristically, simultaneously in large quantities ("mouth full) sputum departs in a defined, i. e. the drenirujushhem situation of the patient's body, which depends on the localization of lesions and should be used to improve drainage function bronchi.

Hemoptysis is observed in approximately 30% of patients, Lung bleeding, i.e. one more 50 ml blood from collapsing 10%.

Discomfort or dull, rising in times of increasing inflammatory process: chest pain is associated mainly with the defeat of mucous membrane bronchi and reactive pleuritis. Pain Syndrome is celebrated almost every second patient. Shortness of breath have 40% patients and increases as the illness progresses.

When worsening process and delay the evacuation of sputum from bronchial tree in the evening, the temperature can rise to 39-40° c in the remission phase only evening subfebrilitet, but on some days can raise body temperature up to 38° c and more.

Physical examination of patients in the early stages of bronhojektazij usually gives little finds. In advanced stages of the disease appear paleness of skin, lip and nail sinjushnost lodges, deformation of fingers and stop "drumsticks" and nail changes such as "watch glasses". Possible asymmetry of the thorax by reducing the volume of the affected parties, the deepening of the nadkljuchichnoj fossa, a narrowing of the intercostal spaces, restriction of mobility of lower pulmonary lesion-side edge. Over the vast area and adjacent to the chest wall pathologically altered lung sites you can define dulling perkutornogo sound, relaxed or hard breathing with different quantity of polymorphic (dry and wet) wheezing. Soundings are moist rales and remain in remission.

6.3 Complications

A frequent complication of lung asbcessa-empiema pleura. As a rule, the cavity through the hearth of destruction reported empiema with traheobronhealnym wood, resulting in the formation of piopnevmotoraksa with the collapse of the lung.

Lung haemorrhage is a dangerous complication of acute lung lesions nagnoitelnyh. The source of bleeding in this increasingly giperplazirovannye bronhealnye arteries, which depart directly from the aorta. Clinical manifestations of pulmonary hemorrhage depends on its intensity.

Bronhogennoe aspiration inflammation lung opposite formed the weakened patients with pronounced oppression kashlevogo reflex.

Pnevmogennyj severe sepsis. Systemic inflammatory response with the formation of polyorganic insufficiency is the result of progressive extensive destruction of the lung.

May be complicated by the emergence of bronchiectasic pulmonary bleeding, abscesses and lung gangrene, ulcers and extrapulmonary sepsis development against the background of pnevmofibroza and emphysema expressed cardiopulmonary diseases and pulmonary heart, sometimes lung cancer and Amyloidosis. Often during this illness is compounded by asthma and pulmonary tuberculosis.

**7.nagnoitelnyh Diagnosis of lung disease**

**X-ray examination** remains the main method of diagnosis confirmation tank terialnoj destruction of the lungs are. whats a unilateral blackout with fuzzy Gras the participating countries, polisegmentarnoe, fractional or totalNoe. Sometimes even before the breakout of pus in the bronchi amid massive infiltration occur multiple Nye enlightenment related to accumulation of gas in purulent substrate caused by anaerobic FloRoy can be observed often "sagging"SOI or horizontal gaps. mezhdolevoj In the second period of the disease amid infiltration starts to be determined by the cavity with the level of zhidkos in case of formation acute abscess easily. When gangrene easy as progressirovation of the collapse of the small cavity between merge withbattle, forming larger, fluid levels.

**Computed tomography** (CT) with giving high diagnostic characteristics. It provides on the one hand, a reasonable neoceni help in differential diagnosis abdominal Neoplasms of lungs.-under the CT control can hold a needle biopsy of solid formations of light, drainage of purulent Polo Steig in vnutrilegochnom location, and "work Noah" trajectory of access to education.

**Ultrasonic Diagnostics.** Despite the fact that vozduhsoderzhashhie fabrics are Wednesday, poorly conducting Ultrasound method increasingly used whats with the differential diagnosis and treatment Research Institute of Pyo-inflammatory diseases of the chest wall, mediastinum, pleural cavity, subple vralno located entities.

**Biopsy** solid entities of the chest wall, pleura and drainage of cavities located subplevralno, under ultrasonograficheskim Kon trol.

**B** **ronhoskopija** allows you to assess the severity and nature of jendobronhit, the deletion of tumor nature process, hold the fence material for bakteriologicheskoth and cytological studies.

Valuable diagnostic technique for nagnoitelnyh lung diseases, particularly complicated development of pulmonaryhemorrhage, 5th is **bronchial Arteriography.** Catheterization of bronchial dell'artehistory and other branches of the aorta is performed by the method of access chrezbedrennym Seldingera. TreasonNIA regional blood flow while pulmonary nagnoacross not same. In acute abscesse Lung develops gipervaskuljarizacija lung tissue with a significant increase in peripheral branches and intensive parenhimatoznoj phase contrast. Extension, izvischemes bronhialno-pulmonary communications characteristicscharacteristic for chronic abscess. For gangrene light peculiar gipovaskuljarnyj version of blood supply of the pathological zones.

**Laboratory Diagnostics.**

Data laboratory studies for chronic lung disease nagnoitelnyh little specific: in the phase of deterioration appear anemia, high peripheral blood leucocytosis with a palochkojadernym shift, increase ESR, hypoalbuminemia, fibrinogenemija, oppression blood fibrinolytic activity, increase of there properties of red blood cells and platelets. During this period, it is advisable to determine the nature of the microflora of phlegm and its sensitivity to antibiotics. A large differential diagnostic value has repeated sputum examination for tuberculosis bacilli by flotation.

**Assessment of functional status.**

**Functional methods** studies using modern machines to get information on the functional status of the respiratory system and circulatory system. They are required to assess the condition of the patient, his backup capabilities for dealing with the issue of operational intervention, the selection of the method and scope of the operation.

**Spirometry** allows evaluating the State of the external respiration measurement of lung volumes using the spirometer. Respiratory lung volume called the volume of air inhaled and exhaled in one quiet breathing cycle. Normally it is about 500 ml. At maximum inhalation into the lungs can enter another 1500 ml of air, which is called optional. The air that goes with maximum forced exhalation (up to 1500 ml) is called standby. Vital capacity of lungs (LVC)-volume of air exhaled after maximum deep breath. This ranges from 3.5 to 5.5 l. reduction of LVC testifies to reduction of a ventilated part of the lung. Respiratory minute volume (MOD)-volume of air exhaled (or inhaled) for 1 min at a calm breathing (norm 6-8 l/min). Maximum ventilation (MVL)-volume of air exhaled for 1 min at maximum frequency and depth of breathing (norm 110-120 l/min). Residual lung volume-volume of air remaining in the lungs after maximum exhalation.

**Standard** **functional tests.**

Program the survey must include load samples. identifying Only reaction to the patient on a standard load, and thus, evaluating adaptation reserves of the patient, it is possible to predict his response to surgical intervention.

In as physical effort are also climbing step (step test) is the methodology researched step rise two-minute video with a height of 50 cm at a pace of 30 times per minute. evaluation of the samples is conducted by index step-test (I):

TX 100

  (I)=  ---------------

(P2+ p3+ p4) x 2

where T-time samples;

R2, R3, R4 -HR for the first 30s, 2--.3, 4-th minute load recovery period.

Index is normal is 40-60 units,

Very informative is also a p r o b a r u f b e.

The survey produces 30 squats for 45 sec. Results judged by changing curves. Count pulse for 15 s (r1) after 5 minutes of quiet State, then squat count pulse for the first 15 s (r2) and last 15 s (r3) minutes after the end of the load. Index (I) is calculated by the formula:

(P1 + p2+ p3)-200

(I)=     -----------------------

10

The value of the Rufe index estimate as follows:

from 0.1 to 5 is excellent;

from 5.1 to 10 is good;

from 10.1 up to 15 is satisfactory;

from 15.1 to 20 is bad.

About r t t a t h e s k a I p r o b a. Lying on back   
the patient count your pulse, then offer a smoothly   
without sudden movements. During the first 15 with Standing   
count pulse. Score sample below:

Score Sample Value increase of pulse beats/min.

Good 0-6

Satisfactory 7-12

Bad 13-18

Very bad 19 or more.

Reduced tolerance to physical activity testifies to the lowering of thresholds operating organism's adaptation to trauma and predicts the development of the above complications in 37% of cases.

Satisfactory tolerance is positive the portability criterion surgery. These patients cardiovascular complications are rare and occur in 2.8% of observations.

8.differential diagnosis

Differential diagnosis **of infectious destrukcij of the lung** is very complicated due to the diverse clinical manifestations of disease in different periods.

Quite often the abscess must differentiate with lung cancer. Unlike an abscess when lung cancer is characterized by a long period subfebriliteta period, long-term buildup "small signs" syndrome, with a meager amount of muco-haemorrhagic sputum, hemoptysis, lack of accession three-layer rate, as in abscesse. For lung cancer is not characteristic for abscess faznosti currents. When the obturation tumour the bronchus and the development of atelectasis share, notes lag chest wall, sinking her in the Act of breathing, umbilicus and resulted in the intercostal spaces. In the sputum and bronchial lavage in 83% of cases detected atypical cells. In the blood is characterized by increased SEDIMENTATION RATE up to 60-70 mm/h, lakopenia, anaemia anaemia. When x-ray study tumor dense, with uneven contours, does not contain the level of the liquid, there are phenomena cancer Lymphangitis (symptom moustache).

In some cases, you must differentiate lung abscesses of hydatidosis. Typical jepidanamneza specific data-accommodation in endemic jehinokokkozu areas. In the first period, complaints are typical preclinical sporadic manifestations of hives, vague aches and pains in the chest, dry cough. In the study of blood, usually celebrated eozinofilia (20-25%), there is a positive reaction Latex Agglutination antibody jehinokokku. x-ray study cavity is determined when the liquid formation, with thin walls sometimes visible Crescent shadow when detached hitinovoj shell.

Must be differentiated from bronchiectasis lung abscess. The latter often flowing, long, long, from childhood. When bronchiectasis are experiencing intermittent exacerbation with febrile fever, cough with a small amount of purulent sputum. Patients have symptoms of chronic purulent intoxication-puffiness of the face, ishudanie, nail plates in the form of a watch glass. Often the disease complicates amiloidnaja disease in which the most often noted kidney transition in chronic renal failure. The retraction notes Fizikalno healthy side thorax, dulling the sound perkutornogo, multiple small and medium bubble wheezing. Radiographically defined diffuse pulmonary picture enhancement, increased lung root structure. More accurate diagnosis is possible if Tomo or bronhografii, allowing to identify the type of localization and bronchiectasis.

Often also requires a differential diagnosis of acute lung abscess with various kinds of limited pleural empyemas and so-called pleural lung cavities in which one of the walls of the cavity is raspadajushhajasja lung tissue, other parietal pleura (pleural empyema with destruction of the lung), poddiafragmalnymi abscess. The most informative in such cases, ultrasound and computed tomography.

Differential diagnosis of **bronchiectasis** must agree with chronic empyema. Similar to bronchoectatic disease is prolonged, chronic disease, the presence of recurrent exacerbations of chronic purulent intoxication. In times of increasing complaints are also available on subfebrilitet, cough with purulent sputum Office coming from the chronic empiema through draining bronchi (with chronic empieme usually has a bronhoplevralnyj fistula). Detected in the blood leucocytosis, shift formula white blood, increased ERYTHROCYTE SEDIMENTATION RATE. Different appearance of the patient: usually chronic pleural empyema occurs in middle and old age, there has been a narrowing of the intercostal spaces, their umbilicus on cavity empiema, dulling perkutornogo sound and relaxed entering or amforicheskoe breath. Accurately verify diagnosis helps lung x-ray, allowing to visualize chronic cavity empiema having parakostalnoe arrangement and dense wall. In cases of doubt, use polipozicionnuju x-rays of lungs, superjeksponirovannye pictures, bronhografiju and plevrografiju, even rarer, with suspected pleural-mezeteliomu (plevroskopiju) thoracoscopy with biopsy, computed tomography. In recent years, there is evidence of diagnostic value of ultrasound scanning.

Chronic lung abscess also has similarities with the disease in the form of a long bronchoectatic currents, phase of exacerbation and remission, presence of chronic purulent intoxication. Unlike bronchiectasis with x-ray study identifies located in thicker, rounded shape, cavity formation fluid level. In chronic abscesse lung bronchi, drainage, in main areas of the lung due to chronic purulent panbronhita may occur secondary bronchiectasic are, however, purely regional, a secondary character. In doubtful cases the differential diagnosis helps bronhografia, which finds out when bronchiectasis generalized nature of the lesion and the absence of cavity abscess.

Lung cancer may resemble nagnoitelnymi nonspecific lung diseases if jendotrahealno growing tumour the bronchus lumen overlaps, causing atelectasis group segments or share with the development of it abscedirovanija, or dissolution of the tumors with formation of perifokalnyh abscesses. However, when this cancer occurs as a subacute State, preceded by a long period of disease with blood-tinged sputum, increasing intoxication. Usually, it's the sick elderly, die-hard smokers, while patients typically bronhojektazijami young age. In doubtful cases required FBS is used that enables you to visualize the tumor. Also, if you can identify the study x-ray shadow of tumors with polycyclic paths and plots in thicker it "moustache" symptom. In cases of doubt, applied research rinsate on atypical cells, selective bronhografia.

The differential diagnosis should be vnutrisindromno (bronchiectasis, bronhoektaza as a manifestation of other pathological processes-chronic bronchitis, tuberculosis; bronchiectasis with congenital pathology-cystic hypoplastic, traheobronhomegalii, Sv-Kartagenera syndrome, etc.).

9.0 treatment of acute nagnoitelnyh pulmonary disease

The basis for successful treatment of nagnoitelnyh lung disease is a timely elimination of Pyo-inflammatory process in easy identificationand adequate correction of complications youdesigned it. Efficientsolution of these tasks is only possible in conditions specialized Department having withtemporary facilities and experience Lechetion of this category of patients.

**Acute abscess** in most cases, unable to stop conservative and parahirurgiches Kimi activities. When **lung gangrene** conservative treatment is considered proprietary. ve preoperative preparation, the aim of which is the maximum sanitation of cavities, decay and pleural cavity in related jempie IU pleura, pnevmogennogo treatment of sepsis also all of them without exception patients with disseminated NOAH Lung gangrene should be carried out prevention of life-complications profuznogo pulmonary hemorrhage, anemia the emptying process on contralateral lung.

**Conservative and parahirurgicheskie treatments**

Conservative treatment:

*1. Infusion Therapy,* which op redeljaetsja manifestation volemicheskih dist the starters and intoxication.

*2. Antibacterial therapy* should Provo be given dedicated of activators and their sense of priority to antibacterial medicines. But, bearing in mind the duration of the bacteriological study, treatment should start with an empirical schema: monotherapy amoksiklavom or 3 generation cephalosporins, clindamycin. in rejecting drugs penicillin may introduction *of fluoroquinolones* in combination with *metronidazole* or clindamycin drugs reserve isare *karbepenemy.*

**Be more appropriate to conduct antibacterial therapy in regional Noe blood.** Considered to be rational to prevent systemic Mycosis anti-fungal drugs, such as *diflju* *Kahn.*

*3. Anabolic steroids* (to combatthe consequences of activating catabolism).

*4. Vitamin therapy,* especially vitamins c and e, as the latter are called re kisnogo oxidation of lipids.

*5. Antifermentnye* drugs (inhibition of proteases, circulating in the blood).

*6. Blood Transfusion* for correction of anemia.

*7. Immunotherapy:*

• specific (gamma globulin, antistaphylococcal

bakteriofag stafilokokkovi)

• nonspecific (interleukin-2, t-aguin)

8.*Postural drainage.*

9.*Inhalation* antiseptics, proteolytic enzymes, bronholitikov.

**Surgical treatment.**

If conservative treatment or unsuccessful disease complicated pleural empyema, and the patient's condition does not allow you to produce more radical intervention, fulfilling one (in the presence of adhesions between the visceral and parietal pleura sheets) or dvuhmomentnuju (in the absence of adhesions) pnevmotomiju. In recent years, these operations produce less because the drain the abscess can be, punktiruja it through the chest wall, as well as entering into the cavity abscess drainage using a trocar.

Parahirurgicheskie activities include drainage of abscess cavities to Monaldi, pleural drainage in parapnevmonicheskoj empieme pleura.

**Pleural puncture.** Diagnostic pleural biopsy performed in dressing, and severe patients. To perform research using a needle with a length of 9-10 cm, diameter 2.0 mm with the cool beveled (up to 60°) pointing. Using an adapter-rubber needle rolls connect with 20 Gr. As you fill the syringe adapter removed from the pleural

Fig. 2 Diagnostic pleural cavity:

(a) is a way to prevent the ingress of air into the pleural space;

b, the topography of intercostal blood vessels. Displaying a safe direction needle in the puncture.

cavity contents periodically compress tool. This technique is necessary to prevent the infiltration of air into it enough convenient as an adapter is to use specially manufactured two-way spout. Punktirujut pleural space in the situation of a patient sitting with abstracted away and placed on the anvil by hand. In this position the rear Costo-phrenic sinus occupies the lower divisions of the pleural cavity. Puncture of the chest wall are not below VII mezhreberja on posterior axillary or shoulder lines. In the case of a osumkovanija exudate place introduction needles in the cavity plevralnuu determine, in accordance with the results of x-ray studies. Perform soft tissue infiltration layer chest 2% solution trimekaina derivative. Puncture needle is injected into the scheduled intercostals space, focusing on the upper edge of the ribs to prevent accidental damage to the finger arteries (fig. 2). Elastic resistance of fabrics before vnutrigrudnoj fascia at the moment of penetration needles into the pleural space, is being replaced by the deletion of the "free space". The reverse movement of the piston in the syringe contents are extracted the pleural cavity blood, pus, hileznyj or other type of exudate. This first-Visual score result pleural punctures.

**Technique of pulmonary puncture**:

For puncture takes two syringes (one empty and the other with a solution of antibiotic and long needle for pumping out the pus is used shirokoprosvetnaja). Put the needle on the empty syringe, piston which progresses in the light all the time shifts, creating a vacuum.

The emergence of blood in the syringe said about the injury of a large vessel. In this   
If needle position should be korrigirovano and vessel bypassed.

The emergence of syringe needle right position sign of pus in the abscess cavity. After possibly full removal of the pus, attach the needle syringe with the solution of antibiotics. Antibiotic quickly injected, the needle removes. Prior to retrieving needles from the easy emergence of cough dangerous.

Figure. 3 subplevralnogo Drainage of abscess. Chest tube drainage.

**When** **bronhoplevralnyh fistulas the optimal catheterization of bronchus with combined maximum od novremennoj its occlusion.** With distal th end mikrokonikostomy start for OK kljuder, which allows for irrigation Lekarstvennymi drugs directly to PA tologicheskogo. This creates the effect of "double" the drainage cavity, profilaktiruetsja, on the one hand, contamination kontrlateralnogo light, on the other hand, fatal consequences likely profuznogo bleeding.

Main Occlusion or mezhutochnogo bronchus is possible only with rigid Bronchoscopy. Xie collectively formulate demarcation is carried out with the abscess using the fibrobronhoskopa. previously modeled in the form of rentgenokontrastth string, the catheter is inserted to facilitate its promotion in segmental and subsegmentarnye bronchi. When blocked gnojnikah castble technique can be supplemented buzhirovaniem withcorresponding bronchus line, which then injects cavity purulent catheter.

Sanacionnaja Bronchoscopy is performed in the Nome in patients who are on MECHANICAL VENTILATION, or if you cannot install koniko or mikrotra heostomy.

According to the algorithm of treatment gangrene and absces SA lung, testimony to the urgent surgical treatment of acute bacterial destrukcij light are:

1. Common lung gangrene.

2. Pulmonary bleeding with the ineffectiveness of parahirurgicheskih methods of hemostasis.

3. Large size lesion destruction (more than 6 cm).

Currently, the most accepted when gangrene of the lung is to perform radicalleg Anatomy excision of necrotic tissue-Lobectomy or pneumonectomy under jendotrahealnym anesthesia with separate intubaby the bronchus. Surgical arsenal also OS the draining operations such as pneumatic or within torakoabscessotomija with the subsequent formation of Plaitvrostomy and prolonged readjustment limited by gangrene (gangrenous abscess).

Pneumonectomy. Operative interventions on organs of the chest are produced from various operational approaches. They must provide the surgeon enough wide open space for the necessary orientation, production operations and overcome possible unforeseen situations. Surgeons often use the following operational access: front-side (front) in the position of the patient on the back; side, the situation of the patient on the healthy side; back-side (rear) position the patient on the abdomen. According to apply the median or median-transverse sternotomiju.

Figure. 4. The root of the right lung in perednebokovom. 1 — pulmonary artery; *2* is the upper pulmonary vein; *3*-lower pulmonary vein.

|  |  |
| --- | --- |
| Figure. 5.Flashing bronchus bronhosshivatelem. | Figure. 6. strengthening the bronchus stump nodal joints. |

***Pnevmotomija.***

In recent years, testimony to pnevmotomii sharply narrowed; It is produced mainly in the Fibro-cavernous TB (kavernotomija)

and very rarely in acute lung abscesse. When cavities in the upper lobes of the lung pnevmotomiju usually exercised by the axillary Fossa and in cavities in the lower lobes — slightly below the angle of the scapula. Length of skin cut 12-15 cm. In the underarm area is preferable to the vertical incision below the angle of the scapula is cut to move the ribs. Expose and podnadkostnichno rezecirujut for 10-12 cm 2-3 rib respectively projection cavity in the lung. Then a small incision posterior leaf rib periosteum, vnutrigrudnoj fascia and parietal pleura determine available zarashhena or pleural cavity. When pleural zarashhennoj produce trial punctured a lung, a thick needle attached to the syringe. To avoid air embolism syringe must be partially filled with izotoniceski solution of sodium chloride. Upon receipt of the sprite pus in the lung cavity reveal jelektronozhom, removes necrotic and purulent matter. The outer wall of the cavity in the lung on tracheobronchial extensively. The cavity in the lung tamponiruut. The edges of the skin vvorachivajut in the wound and at the edges of the rupture of the periosteum and thickened parietal pleura. When free of the pleural cavity or abscess autopsy cavity can lead to aggravation as purulent pleurisy. Therefore, in such cases, it is safer to perform pnevmotomiju after the formation of adhesions between the parietal and visceral plevrami. To create adhesions extend made a hole in the parietal pleura to 5-7 cm in diameter and the affected part of the lung, which tends to be dense, carefully file the edges of the window.

Figure. 7. Podshivanie light to the parietal pleura and mezhrebernym muscles.

The edges of the skin immediately vvorachivajut in depth and file to the rupture of the periosteum of the ribs. Tamponiruut wound. Through 10-12 days, when already formed strong enough pleural adhesions

produce the second phase of the operation-opening and stopped a cavity in the lung.

9.2 Treatment bronhojektazij

 All patients require conservative treatment, the main content of which is rehabilitation of the bronchial tree, antibacterial, dezintoksikatsionnaya, desencibilizirutaya and restorative therapy, physiotherapy, high-energy food.

Sanitation of the tracheobronchial tree is carried out both in the phase of deterioration, and in remission. In times of increasing it is achieved by inhalations of antibacterial drugs (in accordance with the sensitivity of the microflora of phlegm, muko and proteolytic (trypsin, Ribonuclease, dezoksiribonukleazy, territilina), postural drainage, stimulation of coughing through daily injections of various solutions through a catheter, nazotrahealno, entered the same objectives serve as therapeutic bronchoscopy, use bronhioliticheskih and expectorants (jeufillina, potassium iodide solution, drugs 1.31), stimulation of motion activity of patients breathing exercises and physiotherapy.

When severe clinical course of bronchiectasic in the phase of deterioration, there is often a need for a common antibiotic, infusion and blood transfusion and alternative transfusion therapy, heparin, potassium, antigistaminnah drugs, cardiac glycosides, diuretics, vitamins and anabolic steroids, oxygen therapy and Hyperbaric Oxygenation. The complex of medical actions also include UHF, phonophoresis therapy with hydrocortisone, cupping and bookings on the side of destruction, as well as massage or vibration massage chest.

Score the effectiveness of the treatment is carried out on the basis of changes in the nature and quantity of the daily data, Thermometry body and x-rays.

Urgent medical aid activities in the development of pulmonary hemorrhage confined to implement temporary stop bleeding, recovery and stabilization of respiratory and circulatory function, which is essential for the emergency evacuation of a patient **in** **the surgical hospital.** To stop bleeding, you must lay the patient on the patient side and immediately enter 2-1 intravenous ml of 2% solution promedola, morphine, omnopona or pantopona (for the oppression of kashlevogo reflex), 10 ml of 10% solution of chloride calcium 500 mg dicinona. Then suitable intravenous drip cefuroxim plazmozamenitelei (poligliukina, reopoligliukina or ringer's solution in volume -1.0 0.5 l) with 1 ml of 0.06% solution korglikona, inhalation moistened oxygen through nasal catheters. When resistant hypotension shows introduction of glucocorticoids and mezaton. Since the main cause of death for patients with pulmonary bleeding are the aspiration of blood into the intact bronchi and asphyxiation, while massive bleeding require suctioning blood from the trachea and bronchi catheter. The most reliable way to temporarily stop pulmonary bleeding should recognize occlusion of the main bronchus, or foam seal or gauze turundoj, entered through a rigid bronchoscope. Temporarily stopping bleeding is necessary for the evacuation of the patient, as well as for the preparation of operating teams to emergency Thoracotomy and lung resection.

In **prompt treatment** about 40% of patients need bronhojektazijami. It is best aged 7 to 14 years. Indications for lung resection are based on estimates of the prevalence and characteristics of the course of the disease, General the health status of patients and their functional operability. The main indications for surgical treatment of patients with bronhojektazijami provide unilateral lesion with abscedirovaniem or blood-tinged sputum, bleeding, not giving in to conservative treatment, unilateral processes with a significant amount of phlegm and expressed intoxication, as well as unilateral degenerative processes with frequent exacerbations. Surgical treatment is contraindicated in bilateral common lesions, Decompensated cardiac pulmonary or renal-hepatic insufficiency. When bilateral limited bronhojektazijah through the 6-12 months after the first operation resection is possible on the opposite side.

10.0 SELF-STUDY QUESTIONS

|  |
| --- |
| 1 Clinical Anatomy of the lungs. |
| 2. Etiology of nagnoitelnyh lung disease.  3. Pathogenesis of abscess, bronchiectasis, Lung gangrene. |
| 4. the clinic of acute abscess and lung gangrene.  5. bronhojektazij Clinic.  6. nagnoitelnyh Lung Disease Complications. |
| 7. nagnoitelnyh lung disease Diagnostics |
| 8. Differential diagnosis. |
| 9. Treatment of acute nagnoitelnyh pulmonary diseases. |

**11.0 TEST TASKS**

**(self-study)**

Select one or more correct answers.

1. the PATIENT-46 ABSCEDIRUJuShhAJa pneumonia, that is USED in the TREATMENT OF THIS PATHOLOGY

1) sanacionnaja Bronchoscopy

2) inhalations

3) expectorants

4) intrabronhialnoe introduction proteolytic enzymes

5) anti-inflammatory dose radiotherapy

2. The patient had ACUTE LUNG ABSCESS. THAT CAN BE

COMPLICATION OF THE DISEASE

1) breakthrough abscess in the pleural space

2) bleeding

3) aspiration of pus in the healthy lung

4) sepsis

5) education dry cavity in the lung

3. YOUR RECOMMENDATIONS with GANGRENE, AFFECTS ONE of the LOBES of the LUNG

1) daily rehabilitation bronchus tree through a bronchoscope;

2) the introduction of antibiotics in pulmonary artery;

3) Lobectomy;

4) intensive therapy with jendobronhialnym the introduction of antibiotics;

5) integrated therapy, which includes all the above conservative

methods of treatment.

4. DURING the DEVELOPMENT of PIOPNEVMOTORAKSA with ABSCESSE LIGHT in the first place SHOWS

1) jendobronhialnoe introduction proteolytic enzymes;

2) drainage of pleural cavity;

3) antibiotics;

4) retgenoterapija;

5) administering cytostatics.

5. CHARACTERISTIC LUNG GANGRENE

1) development of areaktivnosti diseases in the body;

2) no granuljacionnogo shaft on the border of the lesion;

3) widespread necrosis of lung tissue;

4) expressed intoxication;

5) all of the above is true.

6. What are the CONTRAINDICATIONS for surgery LOBECTOMY in ACUTE LUNG ABSCESSE

1) buildup of purulent intoxication;

2) repeated bleeding from numerous abscess;

3) Lung gangrene;

4) suspicion of polostnuju form of lung cancer;

5) refusal of the patient from the operation.

7. What OPERATION is RECOMMENDED for MEDIUM LIGHT SHARE GANGRENE

1) conservative operation;

2) torakoplastika;

3) Lobectomy;

4) pulmonjektomija;

5) artificial pneumothorax.

8. ACUTE PNEUMOTHORAX is CHARACTERIZED by:

1) shortness of breath at rest;

2) pain syndrome up to shock;

3) horizontal level of fluid in the pleural cavity;

4) tachycardia;

5) change perkutornogo sound.

9. In the TREATMENT of CHRONIC LUNG ABSCESS is APPLIED

1) pnevmotomija;

2) drainage of abscess cavity punkcionnoe;

3) resection of lung;

4) transbronhialnaja puncture the abscess;

5) decorticator lung.

10. What is the MOST COMMON CAUSE of SPONTANEOUS PNEUMOTHORAX

1) Lung abscess;

2) lung cancer;

3) bronchiectasis;

4) Bullous lung cysts;

5) Lung atelectasis.

11. For a BUSY PNEUMOTHORAX is CHARACTERIZED by:

1) compression of the affected lung;

2) decrease in venous inflow to heart;

3) offset of the mediastinum in the affected side;

4) increased pressure on affected side;

5) sonorous heartbeat.

12. when identifying a ROUND SHADOW on LUNG RADIOGRAPH SHOWS

1) imaging;

2) dynamic monitoring;

3) sample von Pirquet and Manta Rays;

4) fibrobronchoscopy with biopsy;

5) pnevmomediastinografija.

13. what HAPPENS to the LEAST CAUSE of DISEASE

GEMOPTOE

1) tuberculosis;

2) bronchial cancer;

3) cardiac light;

4) pneumoconiosis;

5) mitral stenosis.

14. AS for the TREATMENT of POSTOPERATIVE ATELECTASIS

1) breathing exercises;

2) banks on the chest wall;

3) vagosimpaticheskaja blockade;

4) FBS;

5) strict bed rest.

Choose the best combination of answers:

1) 1.2;

2) 1, 2, 3;

2) 1.5;

4) 1, 3, 4;

5) only 5 correctly.

15. In a patient with acute LUNG by DIAMETER UP to 10 cm, LOCATED NEAR the CHEST WALL, THERE are SIGNS of SEVERE INTOXICATION. WHICH METHOD WOULD YOU PREFER TREATMENT AT THIS STAGE

1) Bronchoscopy with two cavity abscess;

2) Thoracotomy + tamponade cavity abscess;

3) Thoracotomy + Lobectomy;

4) total antibiotic treatment;

5) drainage of abscess cavity through the chest wall.

16. The patient 60 years, with PROTRACTED PNEUMONIA, AGAINST the BACKDROP of SUBFEBRILE TEMPERATURE DEVELOPED COUGHING with SIMULTANEOUS CONVERSION of LARGE QUANTITIES of PURULENT SPUTUM. YOUR DIAGNOSIS

1) piopnevmotoraks;

2) Lung abscess with a breakthrough in the bronchi;

3) bronchus cancer with underdeveloped lung;

4) pneumothorax;

5) all the answers wrong.

17. On the CAUSES of ACUTE LUNG ABSCESSES can be divided into:

1) postpneumonic;

2) traumatic;

3) dedusting-Occlusive;

4) haematogenously-Embolic;

5) limfogennye.

The correct would be:

1) 1, 2, 4;

2) 1, 2, 5;

3) 2, 3, 5;

4) 1.3;

5) all the answers are correct.

18. The patient had 52 years AFTER ABDOMINAL OPERATION in X-RAY INSPECTION REVEALED PLATE LOWER RIGHT LUNG LOBE ATELECTASIS. OVERALL, HIS CONDITION IS SATISFACTORY. NORMAL TEMPERATURE. YOUR ACTIVITIES

1) massage the thorax;

2) breathing exercises;

3) antibiotic treatment;

4) inhalation;

5) puncture of pleural cavity.

Select the correct combination of answers:

1) 1, 2, 3;

2) 2, 3, 4, 5;

3) 1, 2, 4;

4) 1, 3, 4;

5) all the answers are correct.

19. MAN 40-years AFTER ALCOHOL 4-5 HOURS SLEPT on the STREET. Via 2 DAY patient APPEARED LOW, there were pain in the chest. In a subsequent RISE in TEMPERATURE to 39 degrees Celsius. TWO WEEKS LATER, SUDDENLY COUGHING SAILING AROUND 200 ml PUS with an unpleasant smell. YOUR PREVARITELNYJ DIAGNOSIS

1) bronchiectasis;

2) lung cancer with the development of pneumonia;

3) Lung abscess;

4) exacerbation of chronic bronchitis;

5) ekssoudativei Pleurisy.

20. In a patient with acute LUNG 8-10 cm in DIAMETER by near CHEST WALL, THERE are SIGNS of SEVERE INTOXICATION. SELECT THE BEST METHOD OF TREATMENT:

1) massive antibiotic treatment;

2) Bronchoscopy with two cavity abscess;

3) sessions extracorporeal intoxication;

4) Lobectomy patients;

5) drainage of abscess cavity through the chest wall.

Select the correct combination of answers:

1) 1, 2, 3;

2) 1, 3, 5;

3) 1.2;

4) 1, 2, 4;

5) the right combination No.

21. The patient had ACUTE PIOPEVMOTORAKS. WHAT IS CHARACTERISTIC FOR THIS DISEASE:

1) expressed pain syndrome with shokopodobnymi signs;

2) no pain;

3) shortness of breath at rest;

4) availability of horizontal level of fluid in the pleural cavity;

5) lack of horizontal level of fluid in the pleural cavity.

What are the signs you believe correct?

1) 1, 2, 3;

2) 1, 2, 5;

3) 3.5;

4) 1, 3, 4;

5) 3.4.

22. AVERAGE SHARE SYNDROME is:

1) congenital bronchiectasis;

2) cysts average proportion;

3 secondary pulmonary lobe) any Genesis;

4) peripheral cancer average proportion with axillary lymph node dissection;

5) solitary Echinococcus average share.

23. NAGNOITIONAM LUNG DISEASES include:

1) Lung abscess;

2) nagnoivshuusa cyst of the lung;

3) bronhojektaticheskuju disease;

4) jempiemu pleura;

5) Lung gangrene.

24. Infection causing LUNG ABSCESS, most often penetrates into the LIGHT:

1) bronhogennym;

2) hematogenic osteomyelitis;

3) limfogennym;

4) contact;

5) postmanipuljacionnym.

25. When APPLIED PENETRATING infection in LUNG ABSCESS are MORE LIKELY to DEVELOP:

1) zadnenizhnih departments;

2) apical sections;

3) in prikornevom Division;

4) cortical;

5) in basal segments.

26. Sharp, an UPSTREAM-VENTED VALVE in the BRONCHUS of the LUNG ABSCESS RADIOGRAPHICALLY SIMILAR:

1) with focal pneumonia;

2) with Central lung cancer;

3) with abdominal cancer;

4) with staph destruction of the lung;

5) with a "Rut.

27. DETECTED RADIOGRAPHICALLY HORIZONTAL LEVEL in the field of ABSCESS PRESENTS:

1) about destruction;

2) of sequestration;

3) concerning draining in the lumen of the bronchus;

4) on the accumulation of significant amounts of pus;

5) about the transition in the chronic stage of the disease.

28. in KORTICALNOM ABSCESSE LIGHT the MOST INFORMATIVE METHOD of RESEARCH is:

1) Bronchoscopy;

2) ULTRASOUND;

3) thoracoscopy;

4) imaging;

5) angiopulmonografija.

29. When GANGRENE LIGHT MOST INFORMATIVE:

1) radiography;

2) radioisotope scan with Xenon;

3) spirometry;

4) bronhografia;

5) Bronchoscopy.

30. An ULTRASOUND when GANGRENE LIGHT ALLOWS YOU to DEFINE:

1) defeat of lung tissue;

2) patency of bronchus;

3) localization process;

4) the degree of destruction of lung tissue;

5) method is not informative.

STANDARDS OF RESPONSES TO TESTS FOR SELF-STUDY

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1.1, 2, 3, 4 | 7.3 | 13.4 | 19.3 | 25.5 |
| 2.1, 2, 3, 4 | 8.3 | 14.1 | 20.2 | 26.5 |
| 3.3 | 9.2 | 15.5 | 21.4 | 27.3 |
| 4.2 | 10.4 | 16.2 | 22.3 | 28.3 |
| 5.5 | 11.1, 2, 4, 5 | 17.5 | 23.1, 2, 3, 5 | 29.1 |
| 6.5 | 12.5 | 18.1 | 24.1 | 30.5 |

**12.0 Situational tasks.**

**Task 1.**

Ill 14 years aspirated sunflower seed 2 months ago. Through the 3 day seed was removed through the bronchoscope, but stayed patient cough, especially in the morning, a small number were purulent sputum. At the slightest cooling on 1-2 day raised the temperature to -38° c 37.5.

On examination, the patient noted a backlog of the left half of the chest when breathing. Percussion-shortening perkutornogo sound under the left shoulder blade. Auskultativno-relaxed breathing in the lower divisions of the left lung back. Analysis of blood without features. When ray study: Lung fields are clear, but the left lung field narrowed, raised skirt and shadow mediastinum deviated to the left.

What diagnosis you bet. What additional research can confirm. How to treat a patient.

**Task 2.**

In a patient 44 years after hypothermia fever up to 39° c, there were pain in right side of chest, increased when breathing, cough. Phlegm almost not allocated. The temperature stayed 8 days, despite intensive anti-inflammatory treatment. Then the patient became separated in a large number of purulent sputum with an unpleasant smell in the amount of 200 ml per day. The temperature dropped to normal; the patient began to feel better. The general condition is satisfactory. Under the right shoulder blade at the rear is determined by shortening perkutornogo tone, relaxed breathing. Other pathology is not revealed.

What disease you suspect patients. What additional research methods should be held for further diagnosis.

**Task 3.**

Patient 42 years a month and a half is treated in therapeutic hospital for acute upper lobe of the left lung abscess. Treatment: intramuscular introduction of penicillin and streptomycin combined with sulfanilamides, vitamin therapy, the introduction of glucose, calcium chloride. However, the condition of the patient almost does not improve-it is high, he is concerned about a cough with periodic Office large quantities of foul-smelling purulent sputum.

Any errors made in the treatment of the patient. What should be done with patients at present.

**Task 4.**

21 year patient notes cough with purulent sputum, frequent rises in temperature after the slightest cooling, often swelling under the eyes. Ill 10 years. The general condition is satisfactory. Pale. Notes the sponginess of the face and legs. In a survey of diagnosis of bronchiectasis with isolated lesions of the meshotchatymi lower right lung lobe bronchiectasis.

What complications bronchiectasis you fear in this case. What additional research should be undertaken to address the issue of the possibility of holding sick nizhnedolevoj Lobectomy on the right.

**Task 5.**

The patient had 34 years on the 2nd day after verhnedolevoj Lobectomy performed about chronic abscess upper lobe of the right lung, a condition deteriorated sharply. Increased chest pain, shortness of breath, narosla appeared sharply tachycardia-132 per minute. Temperature of 37° c. The right half of the chest behind when breathing, breathing noises are not heard. When percussion over the right pulmonary perkutornyj sound field is truncated. Radiographically noted darkening the entire right half of the chest. Mediastinum is displaced to the right aperture on the right stands high.

What complication occurred in a patient. The reason for its development. How to treat a patient.

**Task 6.**

Patient 50 years operated about multiple chronic abscesses right lung. Done right-sided pneumonectomy. After waking the patient through 20 min anesthesiologist noted tachycardia-140 per minute. The pulse of small filling. Maximum blood pressure dropped to 50 mmHg the right half of the percussion of the chest revealed dullness in sloping field of the chest to the right.

What complications in such cases should, above all, think. Than you can confirm was raised. What measures should be taken.

**Task 7.**

The patient underwent sequential surgery 2 years 36 weeks ago about chronic abscess upper lobe of the right lung. The postoperative period was uneventful. However, in your Pocket paramediastinalnom radiographically remained a small liquid level. The 3-week patient appeared high up to 38.5° c in the evening. In the morning the temperature remained normal, but appeared a strong cough, especially when lying on your left side. Then cough became separated smelly bloody phlegm in small quantities.

What is the complication arose from the patient? What preventive action should be undertaken in the postoperative period to prevent this complication? How should you treat the patient now?

**Task 8.**

Ill 24 years operirovana about bronchiectasis. Removed the lower proportion of left lung and ligulate segments. Via 3:00 after the operation the State of the patient. Complains of feeling of pressure in the chest, palpitations, shortness of breath. Normal temperature. Left over half of the thorax box determines the sound. Breath sharply weakened. When x-ray study in the left pleural cavity revealed a significant amount of air. The remainder of the light kollabirovana. A small amount of liquid in the sinus. Mediastinum is shifted to the right.

That could be the cause of resulting complications. What is the sequence of your actions to eliminate this complication.

**Task 9.**

Patient 42 years was produced by pneumonectomy over multiple chronic abscesses right lung. Operation complicated development empiema pleura. Patient treatment over 8 months plevralnymi punkcijami, washing the pleural cavity and puncturing its not abolished empiema. His general condition is satisfactory. It is not exhausted. Signs of Amyloidosis is not.

How to treat a patient.

**Task 10.**

Sick 52 years presented with chest pain, dry cough, shortness of breath vexed. Phlegm separates rarely and barely scant. Sometimes notes veins blood in the sputum. Sick 2 months. During this time, the increasing lack of energy and weakness. The temperature was increased only in the first week of illness. Now normal. Vezikuljarnoe in the lungs breathing, some harder to the right. When x-ray study is defined by an intense shade of triangular form, corresponding to the lower lobe

What kind of disease should think? Which plan you you. That can show additional research if your diagnosis is confirmed.

**ANSWERS TO SITUATIONAL STANDARDS TASK**

Task 1

Aspiration of foreign bodies in children often leads to the formation of atelectasis, and further-to develop atelektaticheskih bronchiectasis. Later, foreign body removal in a particular patient, a characteristic clinical picture and obvious symptoms of atelectasis allows diagnosis: "atelektaticheskie the lower left lung lobe bronchiectasis. You can confirm the diagnosis using bronhografii.

If the diagnosis is confirmed, the patient shows surgical treatment-nizhnedolevaja reproductive Lobectomy.

Task 2

The patient had acute abscess right lung in stage a breakout. It is necessary to investigate the blood (high Leukocytosis, increased ERYTHROCYTE SEDIMENTATION RATE) and phlegm (trehslojnost, fetid smell, the presence of a large number of white blood cells, red blood cells, elastic fibers). X-ray examination is crucial, including, if necessary, and tomography. When x-ray study notes inhomogeneous blackout, without clear boundaries, often in peripheral lung area. During the breakout is usually visible cavity or cavities with perifocal zone of infiltration, often with horizontal liquid level. Often expressed in the form of a small reaction pleural effusion in the sinus.

Task 3

If there is no effect for a long time it was impossible to treat the patient by the same antibiotics. They should change and appoint others in accordance with the sensitivity to them. The introduction of antibiotics should be implemented not only at high doses by injection, but the introduction of intratrahealno through aerosols or transnazalnoj catheterization. Good effect gives the introduction of antibiotics directly into the left branch of the pulmonary artery catheter, conducted through the needle into the subclavian vein. It is very important in the treatment of such patients systematically drained the abscess cavity using postural drainage (drainage), as well as assign expectorants and means blood phlegm (trypsin, chymotrypsin). Currently, the patient also should impose mikrotraheostomu, or carry out therapeutic bronchoscopy, or abscess cavity punktirovat (leaving it drainage) for suction of pus and subsequent introduction of antibiotics. If, within 2 months of healing will not come, the abscess becomes chronic. The patient should operate.

Task 4

Clinical manifestations of the disease suggest patient development of Amyloidosis. To clarify, you must explore urine, check out the sample Zimnickogo, residual nitrogen blood, to conduct a trial with kongorot.

The presence of pronounced Amyloidosis is a contraindication to surgery. Be aware, however, that when the initial manifestations of Amyloidosis operation is possible. If during operation able to radically delete the entire eight hotbed, in subsequent phenomena Amyloidosis may disappear.

In preparation of these patients of particular importance the corresponding salt-free diet, treatment lipokainom, methionine, glutamic acid, transfusion of plasma, native oxygen.

Task 5

The patient remaining atelectasis of lung lobes on the right. The most frequent cause of atelectasis after operation is the accumulation of mucus in the bronchi, sputum, sometimes krovjanistoe detachable from the stump to the remote share bronchus. To eliminate the need to make the patient cough up atelectasis, steadying him chest (tentatively introduce pain relievers). Assign expectorants. If the patient does not itself otkashlivaet, try to suck the contents of the bronchi by transnazalnoj cannulation or impose him mikrotraheostomu and every hour or two to enter through it hypertonic salt solution with antibiotics for 2 ml.

The patient should be forced to breathe deeply, inflate a rubber bag. If these measures do not give effect to suck off phlegm and boost intrapulmonary air pressure bag narcotizing apparatus. If pulmonary assertive actions to straighten can't, there are reasons to think about random squeezing the main or intermediate bronchus, which occurred when suturing remote root share. This can be set by Bronchoscopy. In such cases, shows retorakotomija.

Task 6

The patient had signs of internal bleeding. Most likely slipped off the ligature or clip with a large vessel in the root of the lung. Confirm the diagnosis will help puncture the pleural cavity. Urgent blood should be explored on hemoglobin and red blood cells, as well as make an x-ray on the operating table.

The patient shows immediate retorakotomija and bandaging or topstitching festering receptacle. If the root of the lung bleeding source was not found, they may be internal thoracic, intercostals or muscular arteries. Izlivshujusja blood from the pleural cavity should be collected in a sterile container and pour the patient. It is necessary to accurately calculate the blood loss, fast and fill it completely.

Task 7

Patient originated broncho-pleural fistula. Omission in the conduct of the patient was that found paramediastinalno exudate was not promptly aspirirovan by punctures. This could prevent the development of bronchial fistula.

The patient must lie on the operated side to prevent an afterflow of exudate in the healthy lung. Should be systematically punktirovat cavity, remove all the exudates and wash her antibiotics. If punktirovat hard or punctures do not give effect, it is necessary to drain the Chest cavity or using water jet suction. Simultaneous with oral hygiene can be performed Bronchoscopy and burning fistula 40% solution of Rossiya.

If you eliminate the residual cavity and fistula failed during 1-2 months, it is necessary to raise the question of operational intervention.

Task 8

Ill have a pneumothorax, collapsed left lung. The reason it may be functioning drainage, cortical damage remaining percentage or bad repair bronchus stump.

You need to check the patency of the drainage tube. Aspirirovat air from the pleural space. Translate patient with underwater drainage on water jet. If these measures do not lead to a stage light, should think of bronchial svishhe large. The patient shows a diagnostic Bronchoscopy and retorakotomija for the early closure of bronchus fistula.

Deferral will lead to development of retorakotomii empiema.

Task 9

The patient shows operation torakoplastiki. You can make or back-vertebralnuju torakoplastiku on Zaujerbruhu with podnadkostnichnoj resection of ribs from neck till srednekljuchichnoj or parasternalnoj lines, or landing on torakoplastiku Limbergu. Number of rezeciruemyh ribs depends on the size of the cavity empiema. Must be removed first rib and one edge below the bottom cavity.

If you need more rezecirovat 7 ribs should explode on 2 stages, with an interval of 2-4 week.

**13. recommended reading**

(a)), the principal educational literature

1. Saveliev v.s., Kiriyenko A.i. surgical diseases. Tutorial, t. 1-2, m., geotar-media.-2006.

2. Lecture of the Chair.

b) additional training literature

1. Savelyev V.s. "50 lectures on surgery." m., 2004.

2. Thoracic Surgery/Guide for physicians. Ed. Bisenkova-St. Petersburg, L.n., 2004.