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SOME ASPECTS OF DIFFERENTIAL DIAGNOSIS OF DISEASES WITH PULMONARY DISSEMINATION SYNDROME

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Abstract. Diagnosing diseases with pulmonary dissemination syndrome (PDS) is a complex and relevant medical problem. Modern methods of endoscopic minimally invasive diagnosis make it possible in almost 3/4 of patients to verify the diagnosis after examination of transbronchial biopsy samples and fluid bronchoalveolar lavage (FBL). Approximately 1/4 of the patients can be diagnosed only after conducting mediastinoscopy with the study of biopsy samples of lung tissue and lymph nodes. The causes of errors in the diagnosis of diseases with PDS are not only the objective difficulties of differential diagnosis of diseases, but also insufficient examination and untimely multispiral computed tomography (MCT) and bronchoscopy with a complex of biopsies. The article determines the importance of endoscopic minimally invasive methods with transbronchial biopsy and the study of FBL.

Key words: diagnostics, disseminated pulmonary tuberculosis, sarcoidosis, lung carcinomatosis, exogenous allergic alveolitis.

Diseases with PDS remain an urgent problem of differential diagnosis. The absence of clear pathognomonic symptoms, the attrition and nonspecificity of clinical manifestations, the lack of informativeness of a standard X-ray examination lead to a complication of differential diagnosis and lengthen the period until an adequate treatment is prescribed [1, p. 84].

In most patients, for effective verification of a disease of this group, an endoscopic minimally invasive transbronchial biopsy of lung tissue and mediastinal lymph nodes or surgical resection (open or mediastinoscopy) is necessary. Before bronchoscopy, an MCT is performed without contrast [2, p. 14].

The group of diseases with PDS includes: respiratory sarcoidosis, exogenous allergic alveolitis (EAA), disseminated pulmonary tuberculosis (DPT), lung carcinomatosis. Rare diseases include: alveolar proteinosis, Wegener's granulomatosis, allergic bronchopulmonary aspergillosis. In the initial diagnosis, errors are made primarily due to the lack of informativeness of the X-ray examination and the untimely referral of patients by family doctors (general practitioners) for specialist advice.

Errors in the diagnosis of pulmonary sarcoidosis are more often caused by an incorrect diagnosis of DPT and prolonged ineffective treatment [3, p.40]. With EAA, an erroneous diagnosis is made for every second patient after prolonged unreasonable prescription of anti-TB drugs without bronchoscopy with the examination of lung tissue biopsy samples, lymph nodes and FBL.

Often errors occur during the differential diagnosis between DPT and sarcoidosis according to the results of biopsies of lung tissue and mediastinal lymph nodes after MCT. A histological examination of biopsy samples of lung tissue can determine peribronchial and small tubercles along the lymphatic vessels. The latter are epithelioid cell granulomas with Pirogov-Langhans cells. The absence of caseosis has not very high diagnostic sensitivity in sarcoidosis, it can be increased by taking biopsy samples from several segments of the lung. In FBL with sarcoidosis, T-helpers predominate. In the study of biopsy samples of lung tissue, attention is drawn to the fact that the organization of granulomas in sarcoidosis begins from the periphery. Sarcoid granulomas have a clearly defined “stamped” appearance.

With EAA, granulomas do not have a clear structure. The granulomas include histiocytes, lymphocytes, multinucleated cells. Unlike sarcoidosis, EAA is characterized by peribronchial localization of granulomas. In EAA, a triad of signs is determined: nonspecific interstitial pneumonia in the peribronchial zones, histiocytic (giant cell) granulomas, and foci of obliterating bronchiolitis [4, p. 252] An erroneous

diagnosis of fibrosing alveolitis with the appointment of systemic corticosteroids may also be established in patients with EAA.

In patients with community-acquired pneumonia and subsequently verified DPT, nearly half are treated according to the initial diagnosis of community-acquired pneumonia. After the absence of the effect of antibiotic therapy, further examination and consultation of a TB doctor, DPT is verified. Changes in the lungs during DPT can be diverse - from multiple necrotic granulomas to single granulomas with necrosis and to the complete absence of necrotic changes in granulomas depending on the virulence of mycobacteria and the state of the immune system.

Diagnosis of DPT should be based on the identification of mycobacteria and the determination of their type. Patients can receive anti-TB drugs for several months without the identification of Mycobacterium tuberculosis, which leads to an increase in the number of patients with multi-resistant strains of the pathogen.

The presence of epithelioid granulomas with caseosis in biopsy specimens with DPT is highly specific, but the absence of caseosis in granulomas does not exclude this disease. Resection (surgical, mediastinoscopy) biopsies make it possible to examine a larger amount of lung tissue or lymph node, which increases the information content of histological and immunohistochemical studies for differential diagnosis.

More than 3/4 of patients with lung carcinomatosis make mistakes in differential diagnosis. Treatment of community-acquired pneumonia or pulmonary sarcoidosis is more often performed. The interval until the correct final diagnosis can be made can be from 2 to 8 weeks.

The importance of bronchoscopy with a complex of biopsies for the differential diagnosis of diseases with PDS is difficult to overestimate. This endoscopic minimally invasive method makes it possible to verify the diagnosis in more than 3/4 patients. Only in 1/4 of patients there is a need to clarify the diagnosis using an open biopsy of lung tissue and lymph nodes or mediastinoscopy.

The bowl carries out histological and immunohistochemical studies of at least 3 biopsy specimens. Unfortunately, the informational content of biopsy studies decreases as the pathological process in the lungs is chronic. Progressive fibrosis of

the pulmonary parenchyma and lymph nodes reduces the effectiveness of the biopsy complex with the exception of lung carcinomatosis. Timely MCT, bronchoscopy, open biopsy, mediastinoscopy with the study of several biopsy samples can reduce the number of diagnostic errors.

To increase the effectiveness of etiological diagnostics, the material of biopsy samples of lung tissue and lymph nodes in the presence of granulomatous inflammation should be sent simultaneously to the histological and microbiological laboratories.

To identify a fungal infection, additional stains of biopsy specimens are performed. Sections with hematoxylin and eosin staining are pre-evaluated. We can assume the presence of Aspergillus, Cryptococcus, and Cossidia. Additional staining is carried out in sections with the presence of necrosis: Alcian blue (according to Mouri), silvering according to Grocott, Schiff staing with iodic acid.

Thus, the diagnosis of PDS is an important medical problem, taking into account the spectrum of diseases between which differential diagnosis is carried out. The timely conduct of MCT, endoscopic minimally invasive transbronchial, resection (operating and mediastinoscopy) makes it possible for most patients to establish the correct diagnosis.

The assumption of a disease with PDS at any stage of the examination of the patient should be justified by the presence of the following symptoms [5, p. 22]:

1) common bilateral focal and / or interstitial changes in the lungs on radiographs (PDS);
2) progressive shortness of breath, mainly of inspiratory or mixed character;
3) dysfunction of external respiration (usually restrictive).

The assumption of a disease with PDS is possible even if one of the listed symptoms is present. Nosological verification of the diagnosis is usually carried out in specialized pulmonary hospitals.

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