Radiologic Diagnosis of Nonspecific Interstitial Pneumonia

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ABSTRACT

The article is devoted to specific signs of nonspecific interstitial pneumonia detected by radial diagnostic methods. In particular, it is noted that patients are characterized by the predominance of "frosted glass" and absence of "honeycomb lung" in cellular subtype, and in fibrous or mixed subtype all four main radiologic syndromes, as well as (often, but not always) "honeycomb lung" are simultaneously expressed to different degrees. The presence of symmetrical thin subpleural thin strips of preserved lung tissue, followed by reticular and inflammatory changes is established.

Keywords: nonspecific interstitial pneumonia, methods of radial diagnostics, specific signs

Introduction. Currently, about two hundred diseases with signs of interstitial lung diseases have been identified, which is about 20% of all lung diseases, with half of them being of unclear nature [1]. It is established that diagnostic errors in these patients are 75-80%, and the necessary specialized care is usually provided 1.5-2 years after the first signs of the disease, which directly affects the effectiveness of treatment [2]. Incorrect interpretation of the diagnosis entails incorrect treatment, using potent drugs: glucocorticoids, cytostatics, antibiotics. In this case, the lack of immediate therapeutic effect in 1-2 weeks after the start of mistakenly prescribed treatment can be regarded as a manifestation of insufficient intensity of therapy and lead to an increase in doses of erroneously prescribed drugs. As a result, ''second'' iatrogenic diseases develop, significantly changing the disease clinic, which complicates the diagnostic search and often worsens the prognosis [5]. Mortality in interstitial diseases is significantly higher than in most other lung diseases. Factors of high lethality are determined by low awareness of doctors, insufficient technical equipment of medical centers, difficulties of differential diagnostics due to the lack of pathognomonic signs, fatal nature of some pathologies. All this determines the need to optimize diagnostic work in interstitial lung diseases, especially patients with nonspecific interstitial pneumonia [3,4,6].

Purpose of the study: Investigation of radiologic changes in nonspecific interstitial pneumonia.

Material and methods of research. We retrospectively analyzed the case histories of 200 patients with nonspecific interstitial pneumonia (NIP) who were hospitalized in the pulmonology department of Samarkand city medical association. All patients underwent general clinical standards of investigation according to ICD-10, besides, all patients underwent radiography and high-resolution computed tomography.

Results of the study and their discussion. The obtained results show that in about 26 patients at radiologic examination there was revealed lung root enhancement on both sides, heaviness, decrease in transparency of local character. In 30 patients, along with root enhancement, decreased transparency of both lungs was detected by the type of bilateral pneumonia. In 27 patients general radiological signs characteristic for chronic obstructive bronchitis were revealed. All patients were subjected to high-resolution CT for differential diagnostics. At the same time typical signs of nonspecific interstitial pneumonia were revealed, including decreased transparency of lung tissue by "frosted glass" type, traction bronchiectasis and bronchioloectasis, thickening of interlobular septa, decreased volume of lower lobes.

There is an opinion that in this pathology the symptom of "frosted glass" is dominating over all other signs. W.D.Travis et al. conducted studies on a large material and revealed this phenomenon only in 44% of patients with NIP, while bronchiectasis was detected in 82%, reticular pattern in 96%, and shriveling of the lower lobes in 77% of cases. The "honeycomb lung" areas are generally atypical for this pathology. According to different researchers, they occur in 5-30% of patients, and their prevalence does not exceed 10% of the total lung surface.

The X-ray picture generally reflects the morphological pattern of nonspecific interstitial pneumonia. The inflammatory (cellular) subtype is characterized by the predominance of "frosted glass" and the absence of a "cellular lung". The fibrous and mixed subtype suggest a more diverse symptomatology, when all four main radiological syndromes are presented simultaneously in varying degrees of severity, as well as (often, but not always) "cellular lung". It should be noted that consolidation foci are possible findings in patients with NIP. This symptom may reflect the simultaneous presence of organizing pneumonia, with which the NIP in one of the studies had an intersection in 50% of patients.

It has been established that the course of pathology can be accompanied by periods of increased clinical symptoms, usually taken as an exacerbation of NIP. The exact causes of the exacerbation of NIP have not been definitively established, but it is believed that infectious factors or sudden destabilizing events such as pulmonary embolism, pneumothorax, acute heart failure, etc. are most likely. Inadequate therapy or the cancellation of basic treatment can also lead to an exacerbation of NIP. During this period, the zones of "frosted glass" expand on CT and new areas of consolidation appear.

The observed increase in mediastinal lymph nodes is quite typical at the same time, although this symptom is also found in other interstitial pneumonia. According to C.A. Souza et al.[10] among 206 patients with interstitial pneumonia, intrathoracic lymphadenopathy occurred in 81% of patients with NIP, in 71% of patients with respiratory bronchiolitis associated with interstitial lung disease, and in 66% of cases with pulmonary fibrosis.

It should be noted another rather characteristic symptom of NIP is the presence of symmetrical thin subpleural strips of preserved lung tissue (subpleural sparing), followed by reticular and inflammatory changes.

Conclusions. Thus, the X-ray studies conducted using CTVR technologies indicate that patients with nonspecific interstitial pneumonia are characterized by the predominance of "frosted glass" and the absence of a "cellular lung" in the cellular subtype, and in the fibrous or mixed subtype, all four main radiological syndromes are simultaneously expressed to varying degrees, as well as (often, but not always) "cellular lung". The presence of symmetrical thin subpleural strips of preserved lung tissue is also characteristic, followed by reticular and inflammatory changes.

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