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Radiological Characteristics Of Non-Specific Interstitial Pneumonia

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Abstract. The article is devoted to specific signs of non-specific interstitial pneumonia revealed by using radiation diagnostic methods. The material was a retrospective analysis of case histories of 200 patients with non-specific interstitial pneumonia who were hospitalized in the pulmonology department of the Samarkand City Medical Hospital. All patients underwent general clinical standards of research according to ICD-10, in addition, all underwent high-resolution X-ray and computed tomography. All patients underwent high-resolution CT for the purpose of differential diagnosis. In this case, typical signs of non-specific interstitial pneumonia were revealed, including a decrease in the transparency of the lung tissue according to the "ground glass" type, traction bronchiectasis and bronchioloectasis, thickening of the interlobular septa, and a decrease in the volume of the lower lobes. In particular, it was noted that for patients with the cellular subtype, the prevalence of "ground glass" and the absence of "honeycomb lung" is typical, and with the fibrous or mixed subtype, all four main radiological syndromes are expressed simultaneously to varying degrees, as well as (often, but not always) "honeycomb lung". The presence of symmetrical thin subpleural stripes of preserved lung tissue, followed by reticular and inflammatory changes, was established.

Key words: nonspecific interstitial pneumonia, methods of radiological 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, half of which are of unclear origin [1]. It has been established that diagnostic errors in these patients make up 75-80%, and the necessary specialized care is usually provided to them 1.5-2 years after the onset of 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 absence of an immediate therapeutic effect 1-2 weeks after the start of the erroneously prescribed treatment can be regarded as a manifestation of insufficient intensity of therapy and lead to an increase in the doses of erroneously prescribed drugs. As a result, "second" - iatrogenic diseases develop, significantly changing the clinical picture of the disease, 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 mortality are determined by low awareness of doctors, insufficient technical equipment of medical centers, difficulties of differential diagnostics due to the absence 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].

The aim of the study is to study radiological changes in non-specific interstitial pneumonia.

Material and methods of the study. As a material, we conducted a retrospective analysis of the case histories of 200 patients with non-specific interstitial pneumonia (NIP) who were hospitalized in the pulmonology department of the Samarkand City Medical Hospital. All patients underwent general clinical standards of research according to ICD-10, in addition, all underwent high-resolution X-ray and computed tomography images.

Results of the study and discussion. The obtained results indicate that approximately 26 patients had increased lung roots on both sides, stringiness, and decreased transparency of a local nature during X-ray examination. In 30 patients, decreased transparency of both lungs by the type of bilateral pneumonia was detected along with increased roots. General X-ray signs characteristic of chronic obstructive bronchitis were detected in 27 patients. All patients underwent high-resolution CT for differential diagnostics. Typical signs of nonspecific interstitial pneumonia were revealed, including decreased transparency of the lung tissue of the "ground glass" type, traction bronchiectasis and bronchioloectasis, thickening of the interlobular septa, and a decrease in the volume of the lower lobes.

It is believed that in this pathology the dominant symptom over all others is the "ground glass" symptom. At the same time, W.D. Travis et al. conducted studies on a large material and identified this phenomenon only in 44% of patients with NIP, while bronchiectasis was detected in 82%, reticular pattern in 96%, and wrinkling of the lower lobes in 77% of cases. "Honeycomb lung" zones are generally atypical for this pathology. According to various researchers, they occur in 5-30% of patients, while their prevalence does not exceed 10% of the total lung surface.

The radiographic picture generally reflects the morphological pattern of non-specific interstitial pneumonia. The inflammatory (cellular) subtype is characterized by the predominance of "ground glass" and the absence of "honeycomb lung". The fibrous and mixed subtypes suggest more diverse symptoms, when all four main radiographic syndromes are simultaneously present in varying degrees of severity, as well as (often, but not always) "honeycomb lung".

It should be noted that possible findings in patients with NIP include consolidation foci. This symptom may reflect the simultaneous presence of organizing pneumonia, with which NIP overlapped in 50% of patients in one study.

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

The observed enlargement of the mediastinal lymph nodes is quite typical in this case, although this symptom is also found in other interstitial pneumonias. According to C.A. Souza et al. [10], among 206 patients with interstitial pneumonias, intrathoracic lymphadenopathy was found 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 is necessary to note another symptom that is quite characteristic of NIP – the presence of symmetrical thin subpleural stripes of preserved lung tissue (subpleural sparing), followed by reticular and inflammatory changes.

Conclusion. Thus, the conducted radiological studies using high resolution computed tomography technologies indicate that patients with non-specific interstitial pneumonia are characterized by the predominance of "ground glass" and the absence of "honeycomb lung" in the cellular subtype, and in the fibrous or mixed subtype, all four main radiological syndromes are expressed to varying degrees simultaneously, as well as (often, but not always) "honeycomb lung". Also characteristic is the presence of symmetrical thin subpleural stripes of preserved lung tissue, followed by reticular and inflammatory changes.

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