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Research Article

RADIOLOGICAL SIGNS NON-SPECIFIC INTERSTITIAL PNEUMONIA

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ABSTRACT

The retrospective analysis of case histories of 82 patients with nonspecific interstitial pneumonia, treated as inpatients at the Pulmonology Department of Samarkand City Medical Association during the period from 2010 to 2020 has been carried out. All patients were examined by means of X-ray and computed tomography with high resolution. In the cellular subtype predominance of "frosted glass" and absence of "honeycomb lung" and in fibrous or mixed subtype all four main X-ray syndromes as well as the sign of "honeycomb lung" were noted to a different extent [1]

KEYWORDS

Nonspecific interstitial pneumonia, diagnosis, radiological characteristics, computed tomography, signs.

INTRODUCTION

Currently, about two hundred diseases with signs of interstitial lung disease have been identified, which is about 20% of all lung diseases, with half of them being of unclear nature [9]. Diagnostic errors in these patients have been found to be 75-80%, and the necessary specialist care is usually provided 1.5-2 years after the first signs of the disease, with a direct impact on the effectiveness of treatment [2].

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Misinterpretation of the diagnosis leads to inappropriate treatment, with the use of powerful drugs: glucocorticoids, cytostatics, antibiotics. The absence of an immediate therapeutic effect 1-2 weeks after the start of wrongly prescribed treatment can be regarded as a manifestation of insufficient intensity of therapy and lead to an increase in the doses of wrongly prescribed drugs. This results in the development of 'second' - iatrogenic diseases, which significantly alter the clinical picture of the disease, complicating the diagnostic search and often worsening the prognosis [6].

Mortality rate in interstitial diseases is much higher than in most other lung diseases. Factors of high mortality rate are determined by low awareness of physicians, insufficient technical equipment of medical centres, difficulties of differential diagnostics due to the absence of pathognomonic signs, fatal character of some pathologies [4,5]. All this determines the need to optimise diagnostic work-up in interstitial lung disease, especially in patients with nonspecific interstitial pneumonia [3,7].

Modern diagnostic medicine cannot be imagined without the use of high-resolution computed tomography technologies. In particular, multislice ("multispiral", "multislice" computed tomography - MSCT) was first introduced by Elscint Co. in 1992. The fundamental difference between MSCTs and spiral CT scanners of previous generations is that there are not one but two or more rows of detectors on the gantry circumference. In order to allow X-rays to be simultaneously received by detectors located on different rows, a new - volumetric geometric beam shape was developed. In 1992, the first twin-slice (double-helix) MSCT tomographs with two rows of detectors were introduced, and in 1998, four-slice (quadruple-helix) tomographs with four rows of detectors, respectively. In addition to the aforementioned features, the number of X-ray tube rotations was increased from one to two per second. Thus, fifth-generation quadruple spiral MSCT tomography scanners are now eight times faster than conventional fourth-generation spiral CT scanners. In 2004-2005, 32-, 64- and 128-slice MSCTs, including those with two X-ray tubes, were introduced. Today, some hospitals already have 320-slice CT scanners. First introduced in 2007 by Toshiba, these CT scanners are a new round in the evolution of X-ray computed tomography. Not only can they produce images, but they can also observe physiological processes such as those occurring in the brain and heart in almost "real" time. The distinctive feature of this system is that an entire organ (heart, joints, brain, etc.) can be scanned in one revolution of the radiation tube, which significantly reduces the time of the examination, and it is also possible to scan the heart even in patients with arrhythmia [8].

PURPOSE OF THE STUDY

To study radiological changes in non-specific interstitial pneumonia

MATERIAL AND METHODS OF INVESTIGATION

As a material we carried out a retrospective analysis of case histories of 200 patients with nonspecific interstitial pneumonia (NIP), who were hospitalized at the Pulmonology Department of Samarkand City Medical Association in 2010-2020. All patients underwent general clinical examination standards according to ICD-10, and all had high-resolution X-rays and CT scans.

RESULTS AND DISCUSSION

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The results obtained show that in about 26 patients X-ray examination revealed lung roots aggravation on both sides, heaviness, decreased transparency of local character. In 30 patients, together with strengthening of roots, decreased transparency of both lungs was revealed as bilateral pneumonia. In 27 patients general radiological signs characteristic of chronic obstructive bronchitis were revealed. High resolution CT scanning was carried out in all patients for differential diagnostics. Typical signs of nonspecific interstitial pneumonia were revealed, including decreased transparency of lung tissue as "frosted glass", tractional bronchiectasis and bronchioloectasis, thickening of interlobular septa, reduced volume of lower lobes (Fig. 1).

It is generally believed that the "frosted glass" symptom dominates all other signs in this pathology. However, W.D.Travis et al[10] examined a large body of material and found this phenomenon in only 44% of patients with NIP, whereas bronchiectasis was found in 82%, reticular pattern in 96%, and shrinkage of the lower lobes in 77% of cases. Cellular lung areas are generally atypical for this pathology. According to various researchers, they occur in 5-30% of patients, with prevalence not exceeding 10% of the total lung surface.

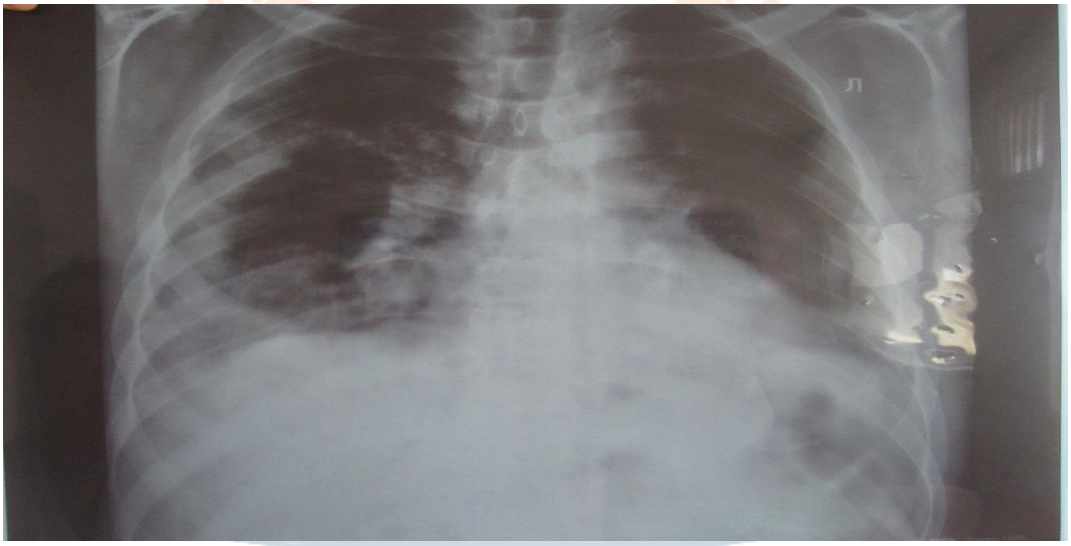

Figure1. Overview radiograph of the lungs in nonspecific interstitial pneumonia

The radiological picture generally reflects the morphological pattern of non-specific interstitial pneumonia. The inflammatory (cellular) subtype is characterised by a predominance of 'frosted glass' and the absence of a 'honeycomb lung' (Fig. 2). Fibrotic and mixed subtypes have a more varied symptomatology, with all four major radiological syndromes presenting simultaneously in varying degrees of severity, as well as (often, but not always) a 'honeycomb' lung.

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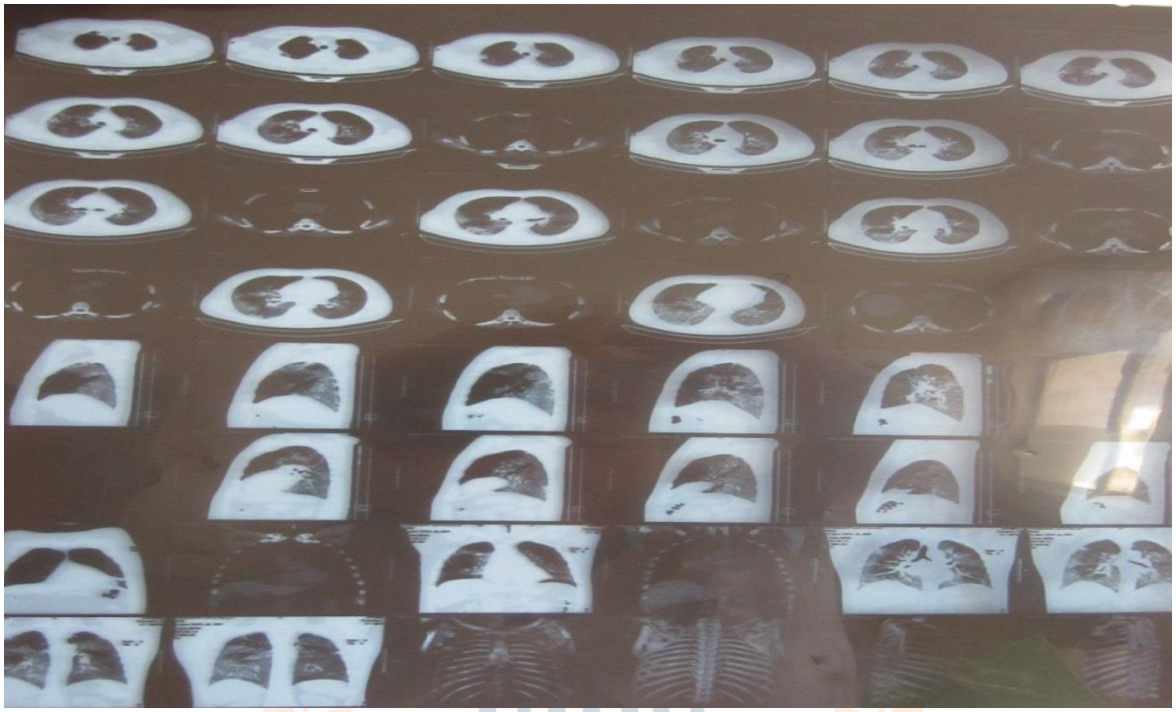

Figure2. CT scan of the lungs. MRI slice - subpleural consolidations are visible, 'frosted glass' fields and reticular patterns are identified.

It should be noted that possible findings in patients with NIP are consolidation foci. This symptom may reflect the concomitant presence of organising pneumonia, with which NIP was crossed in 50% of patients in one study. It has been established that the course of the pathology can be accompanied by periods of increasing clinical symptoms, usually accepted as an exacerbation of NIP. The exact causes of exacerbation of NIP have not been conclusively established, but infectious factors or sudden destabilizing events, such as pulmonary embolism, pneumothorax, acute heart failure, etc., are considered most likely. Inadequate therapy or withdrawal of baseline treatment can also lead to exacerbation of NIP. On a CT scan during this period, "frosted glass" areas are enlarged and new areas of consolidation appear.

The observed mediastinal lymph node enlargement is quite typical in this, although this symptom is also found in other interstitial pneumonias. 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.

Another rather typical symptom of NIP was the presence of symmetrical thin subpleural bands of preserved lung tissue (subpleural sparing), followed by reticular and inflammatory changes.

CONCLUSIONS

Thus, the conducted X-ray investigations with CTWR technologies testify to the fact that in patients with nonspecific interstitial pneumonia the prevalence of

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"frosted glass" and absence of "honeycomb lung" is typical for cellular subtype, and in fibrous or mixed subtype all four main X-ray syndromes are simultaneously expressed in different degree, as well as (often, but not always) "honeycomb lung". The presence of symmetrical thin subpleural strips of preserved lung tissue followed by reticular and inflammatory changes is also characteristic.

REFERENCES

1. Aralov N.R., Rakhimov M.M., Nosirova D.E., Rustamova Sh. Clinical and bronchoscopic characterization of the inflammatory process in patients with chronic obstructive pulmonary disease // Journal of Scientific and Practical Questions in Science and Education. - October, 2019. - № 25 (74). - Moscow, pp. 55-63.
2. Aralov, N. R., Makhmatmuradova, N. N., Zakiryaeva, P. O., & Kamalova, M. I. Distinctive Features Of Non-Specific Interstitial Pneumonia. 2020.
3. Makhmatmuradova N.N., Aralov N.R., Safarova M.P. Clinical and immunological characteristics of non-specific interstitial pneumonia // Scientific and Methodical Journal "Achievements of Science and Education". - №13 (54). - 2019. - Ivanovo, - p. 117-120.
4. Makhmatmuradova N.N., Safarova M.P. Charasteristics of chronic obstructive pulmonary disease// International Scientific and Practical Internet Conference "Trends and Prospects for the Development of Science. - 2019. - Issue #44. - Ukraine. - c. 510-512.
5. Kamalova M. I., Khaidarov N. K., Islamov Sh.E.// CLINICAL AND DEMOGRAPHIC QUALITY OF LIFE FOR PATIENTS WITH ISCHEMIC STROKE IN UZBEKISTAN. Academicia: An International Multidisciplinary Research Journal https://saarj.com
6. Kamalova M. I., Islamov Sh. E., Khaydarov N.K.// Morphological changes in brain vessels in ischemic stroke. Journal of Biomedicine and Practice 2020, vol. 6, issue 5, pp.280-284
7. Shmelev E.I. Differential diagnosis of interstitial lung diseases // Consilium medicum. - 2003. - Vol. 5. Ч № 4. - C.176-181..
8. . Souza C.A., Muller N.L., Lee K.S. et al. Idiopathic interstitial pneumonias: prevalence of mediastinal lymphnode enlargement in 206 patients: AJR. Am. J. Roentgenol. – 2006. – Vol. 186. – P. 995-999.
9. Ismoilov, O. I., Murodkosimov, S. M., Kamalova, M. I., Turaev, A. Y., & Mahmudova, S. K. (2021). The Spread Of SARS-Cov-2 Coronavirus In Uzbekistan And Current Response Measures. The American Journal of Medical Sciences and Pharmaceutical Research, 3(03), 45-50.
10. Travis W.D., Hunninghake G., King T.E. Jr. et al. Idiopathic nonspecific interstitial pneumonia: report of an American Thoracic Society project // Am. J. Respir. Crit. Care Med. – 2008. – Vol. 177. – P. 1338-1347.