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Formation Processes and Morphological Characteristics of Concomitant Occurrence of Malignant Neoplasms and Pulmonary Tuberculosis

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Annotation: This article discusses the formation processes and morphological features of the simultaneous presence of malignant tumors and pulmonary tuberculosis. The paper examines the mechanisms that contribute to the development of these diseases in their combined presence, as well as describes the characteristic morphological changes in tissues. The analysis provides a deeper understanding of the interaction between malignant neoplasms and pulmonary tuberculosis, which can contribute to the development of more effective methods of diagnosis and treatment.

Keywords: malignant tumors, pulmonary tuberculosis, morphological features, mechanisms of development, concomitant diseases, diagnosis, treatment.

Relevance

The study of the pathogenesis and morphological features of the combination of malignant neoplasms and pulmonary tuberculosis is extremely relevant in the modern medical context. Both of these diseases occupy a significant place in the structure of morbidity and mortality, and their combined course is a complex clinical problem.

Malignant lung tumors are one of the leading causes of cancer-related deaths worldwide. According to the World Health Organization, lung cancer is the leading cause of cancer death, making it a critical medical research target. On the other hand, tuberculosis, despite significant advances in its diagnosis and treatment, remains a serious infectious disease, especially in developing countries. In 2022, tuberculosis was included in the list of priority infectious diseases that require increased attention and resources.

The combined course of malignant neoplasms and pulmonary tuberculosis significantly complicates the diagnosis and treatment of both diseases. Tuberculosis can mask the symptoms of

malignant tumors, making it difficult to detect them in a timely manner. At the same time, the presence of a malignant tumor can weaken the immune system, which increases the risk of reactivation of latent tuberculosis or the development of a new infection. This creates additional difficulties for clinicians in choosing the best treatment strategies and patient management.

In addition, the interaction of pathogenetic mechanisms of these diseases can lead to unique morphological changes that need to be taken into account when developing diagnostic and therapeutic approaches. Tuberculosis granulomas can create favorable conditions for the growth and metastasis of malignant cells, which requires a detailed study and understanding of these processes. It is also important to take into account that the combination of these diseases can lead to a change in the clinical picture, which complicates the diagnosis and management of patients.

In modern medical practice, cases of combined pathology are increasingly occurring, especially in conditions of immunosuppressioncaused by cancer treatment or other factors. This requires the development of new, more effective and personalized approaches to diagnosis and treatment, which will take into account the features of the combined course of malignant neoplasms and pulmonary tuberculosis.

Thus, the study of the pathogenesis and morphological features of the combination of these diseases is a necessary step to improve the quality of medical care and increase patient survival. The results obtained will contribute to the development of more accurate diagnostic methods that allow timely detection and differentiation of pathological changes, as well as the development of new therapeutic strategies aimed at effective management of these complex clinical cases.

Goal

The aim of this study is to study the pathogenesis and morphological features of the combination of malignant neoplasms and pulmonary tuberculosis, as well as to identify the relationships between these diseases in order to develop more effective methods of diagnosis and treatment.

Materials and methods

The study used materials from 100 patients who were diagnosed with both malignant neoplasms and pulmonary tuberculosis. The study included histological and immunohistochemical examination of biopsy material, as well as analysis of clinical data of patients. Histological analysis included staining of tissue sections according to standard methods, which revealed morphological changes characteristic of both diseases. An immunohistochemical study was used to determine the expression of markers associated with tuberculosis and malignant tumors. Statistical data processing was performed using the SPSS program, which allowed us to identify correlations between various pathogenetic and morphological indicators.

Results

The results of the study showed that the combination of malignant neoplasms and pulmonary tuberculosis leads to significant morphological changes in lung tissues. In particular, it was found that the presence of tuberculosis granulomas promotes accelerated growth of malignant cells and increases their aggressiveness. An immunohistochemical study showed increased expression of markers of inflammation and cell proliferation in the affected tissues. Statistical analysis of the data showed significant correlations between the severity of tuberculosis and the stage of development of a malignant tumor, which confirms the mutual influence of these diseases. The results obtained can serve as a basis for the development of new diagnostic and therapeutic approaches aimed at improving the treatment outcomes of patients with comorbidity.

Conclusion

The conclusion of the study emphasizes the importance of studying the pathogenesis and morphological features of the combination of malignant neoplasms and pulmonary tuberculosis. The data obtained confirm the mutual influence of these diseases and their ability to enhance each other's pathological processes. The results of histological and immunohistochemical analysis

indicate the need to develop comprehensive approaches to the diagnosis and treatment of patients with this combined pathology. An important aspect is early detection and a differentiated approach to treatment, which can significantly improve the prognosis and quality of life of patients. Further research in this area should focus on developing more specific markers and therapeutic strategies that will effectively control both diseases.

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