SURGICAL LUNG BIOPSY — A GOLDEN STANDARD OF DIAGNOSIS OF IDIOPATHIC INTERSTITIAL PNEUMONIA?


National Institute of phthisiology and pulmonology named after F. G. Yanovsky National Academy of medical sciences of Ukraine, Kiev, Ukraine

Abstract

Current classification of idiopathic interstitial pneumonia (IIP) is based on certain clinical, radiographic and histopathological features of the disease. Surprisingly, it was an initiative of experts-pathologists to recognize 7 types of IIP not as variations of one disease but as the separate nosological entities which have different characteristics of histological pattern (Tab. 2, 5).

All histopathological patterns, listed in the table, doubtlessly, have significant distinctive peculiarities. But in the same time they are not pathognomonic for each taken clinical form of IPP. For example, the histological pattern, called usual interstitial pneumonia or non-specific interstitial pneumonia as well, is often seen in lung manifestation of connective tissue diseases (8). Diffuse alveolar damage is typical for an acute respiratory distress syndrome regardless of etiology; the histological signs of lymphoid interstitial pneumonia are frequently found in lung disorders due to immunity deficiency conditions (9).

Considering all mentioned above we address ourselves a question: what is a diagnostic value of pathomorphological examination of lung biopsy or autopsy sample in distinction between different forms of IIP?

In order to answer this question we asked three highly qualified pathomorphologists with extensive experience in the field of pulmonary diseases to perform an independent examination of the same histological tissue preparations from patients with different forms of IIP. The following

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Unexpectedly, the reports of study participants regarding nosological belonging of revealed abnormalities varied significantly.

An agreement between clinical diagnosis and histological conclusions of all three experts-morphologists was registered only in 15 cases (20.5 %); two experts — in 35 cases (47.9 %) and one — in 15 (20.5 %).

In 8 cases (11 %) there was a complete discordance between clinical diagnosis and all three opinions of the experts. In 4 patients the clinical diagnosis was changed due to histological examination: in 1 case a bronchiolo-alveolar carcinoma was diagnosed; in 2 patients with clinical diagnosis of LIP there were no histological signs of lymphoid pneumonia but NSIP pattern was found; in 1 patient with NSIP there was a prominent interstitial lymphoid infiltration, typical for LIP. In 4 cases the conclusions of morphologists unanimously contradicted to clinical, radiological and laboratory data. In those cases the clinical diagnosis remained unchanged (further the correctness of this decision has been confirmed during clinical observation and evaluation of treatment response).

In majority of cases the differences in interpretations of histological data stayed within the range of IIP group. For instance, in patient with clinical diagnosis of IPF the pathomorphologist described the histological pattern as NSIP and vice-versa.

The instances when morphological changes had been allocated to completely different nosological entity were
As it is demonstrated on Fig. 2, in 26 % of cases the study participants similarly interpreted histological abnormalities. In 49.3 % there was an agreement between two experts. And finally, in 24.7 % of cases (each fourth patient) all pathomorphologists made different conclusions regarding pathohistological patterns they found. Such a high rate of discrepancies in interpretation of histological data makes the value and reliability of surgical lung biopsy doubtful in distinction of IIP forms.

It is worth to mention that diagnostic value of regular chest radiography in IIP patients is quite limited — the sensitivity of this method does not exceed 50 % [4]. At the same time, the implementation of HRCT increased the accuracy of diagnosis up to 90 % [5, 7]. The multislice computed tomography (MSCT) allows to identify and visualize in different regimens the lung structures about 1 mm in size. Sensitivity of this methods approaches 95 % [1, 3].

According to joint ATS/ERS/JRS/ALAT statement on IPF management, published in 2011, the diagnosis of IPF is based on the results of multidisciplinary discussion between pulmonologists, radiologists and pathologists. In situations, when such a dispute is impossible, the patient has to be referred to the hospital, where qualified specialists are available. In our opinion this recommendation should be used in other forms of IIP as well.
REFERENCES


