

II. CLINICAL PROBLEMS

CLINICAL COURSE AND DIAGNOSIS OF LUNG CANCER — ROLE OF BRONCHOLOGICAL INVESTIGATIONS

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The fool-proof diagnosis of lung cancer is closely bound to cancer cell detection. Making definitive diagnosis requires morphologic evidence which is solely possibly by using broncho-biopsic methods. The introduction of fibrobronchoscope technique gave birth to new possibilities for morphologic proof of early stage lung cancer.

The purpose of the present study is to investigate comparatively the clinical signs of lung cancer and to determine the diagnostical value of the main contemporary bronchological methods of examination in respect to early diagnosis and differential diagnosis.

Material and methods

The study covered prospectively 941 patients with verified morphologic diagnosis of lung cancer or of another pulmonary disease (non-cancer). All the patients were completely examined by routine clinical and paraclinical methods to present an overall characteristics of the disease. Furthermore, in respect to study the possibilities and effectivity of different bronchological methods in lung cancer diagnosis the following kinds of bronchological investigations were carried out:

1. Rigid bronchoscopy.
2. Fibrobronchoscopy.
3. Bronchoscopic transbronchial pulmonary biopsies:
 - 3.1. pincers biopsy through rigid bronchoscope and fibrobronchoscope
 - 3.2. aspiration biopsy through rigid bronchoscope and fibrobronchoscope
 - 3.3. brush biopsy through rigid bronchoscope and fibrobronchoscope
4. Non-bronchoscopic transbronchial pulmonary biopsies:
 - 4.1. catheter-aspiration biopsy through Metrace's probe
 - 4.2. brush biopsy through Metrace's probe
 - 4.3. pincers biopsy through Metrace's probe
5. Laryngo-tracheobronchography with tantalum powder:
 - 5.1. through rigid bronchoscope
 - 5.2. through Metrace's probe.

Results and discussion

It is established that histomorphologic and cytologic methods of investigation acquired new possibilities in the development of contemporary endoscopic technique play an essential role in the early diagnosis and differential diagnosis of lung cancer. The initial clinical manifestations of lung cancer are not characte-

ristic in early symptomatic stage as well as during diagnosing of the disease. That's why they do not possess any differential-diagnostic value. The systemic signs, especially extrapulmonary paraneoplastic syndromes which can be the first manifestation of lung cancer are of greater importance, indeed. A considerable number of lung cancer patients are diagnosed rather later after the appearance of the first clinical symptoms which is due not only to the long duration of asymptomatic interval but also to an inexpedient use of determinant bronchological methods of investigation.

In comparison with the rigid bronchoscopy the fibrobronchoscopy has some essential advantages concerning the diagnosis of lung cancer as follows:

a) it sharply improves the possibilities for visual diagnosis especially of peripheral pulmonary tumors which are rather inapproachable for the rigid bronchoscope;

b) it allows a more exact and detailed determination of the characteristic peculiarities and the relation of the neoplasm to neighbouring anatomical structures;

c) it provides much better possibilities for morphologic verification of lung cancer.

The brush biopsy has the highest diagnostic effectivity of all fibrobronchoscopic transbronchial biopsy methods. Its sensitivity is 71,5 per cent and its specificity 98,5 per cent. It is followed by the pincers biopsy (resp. sensitivity — 67,5 per cent and specificity — 99 per cent). The lowest diagnostical value is presented by the aspiration biopsy (sensitivity — 42 per cent, and specificity — 98 per cent). Combination of three biopsy methods enhances the sensitivity of the fibrobronchoscopy up to 84,5 per cent while the specificity remains 96 per cent. All the transbronchial biopsy methods which are performed by using the rigid bronchoscope possess a considerably lower effectivity. The pincers biopsy has the highest diagnostical effectivity among non-bronchoscopic transbronchial biopsies in peripheral lung cancer (sensitivity — 46,7 per cent and specificity — 100 per cent). It is followed by the brush biopsy (resp. 43,3 per cent and 94,7 per cent). The aspiration biopsy has the lowest rates — resp. 30 per cent and 94,7 per cent. Combination of three biopsy methods enhances the sensitivity up to 73,3 per cent while the specificity remains 94,7 per cent.

Pincers lung biopsy through Metrace's probe improves the diagnostic sensitivity of non-bronchoscopic biopsy methods and increases the possibilities for histologic typing of peripheral pulmonary carcinoma. The new methods for rapid cytodiagnosics and luminescent fluorescamine microscopy which were elaborated by the author enhance the sensitivity of the cytologic investigation in lung cancer patients.

The tantalum inhalation laryngo-tracheobronchography is a valuable additional method in the diagnostics of lung cancer and contributes to more complex characterization of the pathologic process. Tantalum powder as a roentgen-contrast means does not cause any local irritation on respiratory tract mucosa as well as any reactions of general intoxication. It does not disturb the respiratory function of the patient. The new method for combined tracheobronchography with tantalum powder and liquid contrast matter elaborated by the author gives the possibility for a valuable additional information about localization, size and dissemination of the neoplastic process. These data are of special importance for the evaluation of the possibilities for surgical treatment of lung cancer as well as for planning of the kind and size of pulmonary resection.

NOTE: This is a precise of Dr. sc. thesis of the author.

КЛИНИЧЕСКОЕ ТЕЧЕНИЕ И ДИАГНОСТИКА РАКА ЛЕГКИХ — ЗНАЧЕНИЕ БРОНХОЛОГИЧЕСКИХ ИССЛЕДОВАНИЙ

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Р Е З Ю М Е

Проведено перспективное исследование 941 больного раком легких и другими незлокачественными заболеваниями легких с целью изучения сравнительного аспекта клинических проявлений рака легких и для определения диагностической ценности основных бронхологических методов исследования.

Установлено, что для успешной диагностики рака легких решающее значение имеют гистоморфологические и цитологические методы исследования материала, полученного при применении фибробронхоскопических и небронхоскопических способов биопсии (щипцев, щеткой и аспирационной биопсии).