

THE INVENTION OF COMPUTED TOMOGRAPHY AND ITS SIGNIFICANCE IN THE HISTORY OF PULMONOLOGY

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Abstract

Imaging diagnostic methods in pulmonology originate from the discovery of X-rays. Radiography is the first-line tool for chest imaging, but in many cases its capabilities are limited.

The aim was to study the history of the invention of computed tomography.

Since the radiogram is a two-dimensional summation image of a three-dimensional anatomical structure, there was a need to visualize separate layers of the pathological process. Since 1913, many technical solutions of tomography have been tested. Linear tomography for some time served for the diagnosis of lung pathology, helped to determine the localization more accurately, examine a prevalence, nature and structure of the pathological process, to detect small pathological formations and cavities. But the quality of tomography was not satisfactory. The two outstanding inventors of computed tomography who were awarded the 1979 Nobel Prize in Medicine were not the physicians. Allan McLeod Cormack (Professor and Head of the Institute of Physics at Tufts University, Medford, Massachusetts, USA) was the first to outline the principles of cross-sectional tissue reconstruction in an organ based on X-ray projections in 1963. Godfrey Newbold Hounsfield (Head of Medical Research at Electric and Musical Industries, Middlesex, England) not only reproduced the mathematical algorithms of the technique, but also designed the tomograph and directly participated in its clinical implementation in 1971. Among the developers of the idea of three-dimensional X-ray tomography in 1957-1958 were the scientists of Kyiv Polytechnic Institute Semyon Tetelbaum and Boris Korenblyum.

Key words: radiology, computed tomography, history of pulmonology.

Ukr. Pulmonol. J. 2024;32(1):66–74.

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