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Ways of Optimization of Postmortem Studies of Nosocomial Pneumonia at Patients with Cerebral Stroke

ABSTRACT

Ways of optimization of the pathological research in nosocomial pneumonia at patients with brain strokes are presented in this article. In many respects, they are concerned to the development and practical application of new approaches in research methodology of lung tissue in a low-impact autopsy. The improvement of the low-impact technology autopsy, the widespread use of different methods of coloring histological sections, the use of bacteriological, bacterioscopic research methods of lung tissue and cerebrospinal fluid are considered of great importance. If there is a mobile X-ray installation in the postmortem department the plan radiography of the chest is supposed. For a more detailed study of the ventricular system, vascular network, location and size of the pathological process in the body for justified reasons the brain CT is carried out. The development of the mortem examination at nosocomial pneumonia caused by cerebral strokes is associated with lifetime analysis of clinical, laboratory, functional, instrumental data correlated to the autopsy results.

Keywords: nosocomial pneumonia, cerebrovascular disease, stroke, optimization mortem examination, new methods, low-impact autopsy.

At present mortality rate from pneumonia in Russia corresponds to 5% of a community-acquired form and 20% in hospitals (A.G. Chuchalin et al., 2010). Pneumonia in our country is found in 3.86 cases per 1,000 people [1,2,3,4], and each year at 2 million patients are registered [5]. There is undeniable tendency to increase the number of patients with severe disease and increased mortality [6,10]. Also there is steady increase in the incidence of nosocomial pneumonia complicating cerebrovascular disease [7,8,9]. The average annual incidence of cerebrovascular disease was 2.1 per 1,000 population, and the death rate from stroke - 0,62-1,28 per 1000 inhabitants per year [9]. In this case, as noted by some authors on the acute period accounted for 35% of mortality, which to the end increase by 12-15% [9].

The aim: To identify ways to optimize postmortem study at nosocomial pneumonia in patients with stroke.

A thorough study of medical records is preliminary to a section of organs. In this connection, a chief doctor confirms of performing the autopsy with use of low-impact technology. Clarification of

timeliness, accuracy and nosological principle of detection and design of a final clinical diagnosis are of great importance. The final clinical diagnosis is rubricated into three categories. A lot of information can be obtained by reading diary observations, stage epicrisis, consultant's conclusion, council of physicians , post-mortem epicrisis. Correspondence of appropriate lifetime research methods with those in the standard list on this nosology is revealed. Finally, objective and subjective causes of those or other deviations from the standards of diagnosis and treatment of internal diseases (B.I. Shumutko, S. V. Makarenko, 2009) are determined as well as the order of the Ministry of Health of the Russian Federation dated August 9, 2006 № 596 "On approval of the standard medical care of patients with subarachnoid hemorrhage "and other documents are studied. In this context, studying the results of computed tomography of the brain, chest X-ray, bacteriological sputum cultures and tracheobronchial aspirates in dynamics can be considered as necessary procedures. In the diagnosis of pneumonia it is important to consider laboratory parameters, functional and other studies.

Postmortem examination of a corpse with nosocomial pneumonia is carried out on a definite plan, which is reflected in the literature (G.G. Avtandilov "Fundamentals of pathology practices", second edition, Moscow 1998). To identify etiology of the disease during lifetime and dissecting table a biological material for subsequent implementation and bacterioscopic bacteriological research is extracted. A prosector pays special attention to a state of the tracheobronchial tree, pathological changes in a body, fluid presence in the pleural cavity, measurs digital indicators. Usually with lung tissue four pieces of the biological material are extracted, and two from visceral pleura, two - from organ root . The plan includes the study of microbial identification number in 1g of tissue or in 1ml of fluid. The bacteriological research involves the identification of microorganisms that occur in monoculture or in association with sensitivity to antibiotics and bacteriophages. In other equal conditions the data of bacteriological studies and bacterioscopic promote accurate and high-quality clinical and pathology assessment cases in which the final comparison of clinical and postmortem diagnoses is conducted and assessment of the quality of rendering help is carried out. Typically, histologic sections were studied at the light-optical device. Often the color of micropreparations reduced to a limited number of ways. In this case, histological sections were stained with hematoxylin-eosin, picro fuchsin of Van Gieson, Weigert for identifying microbial colonies - Romanovsky-Giemsa, May-Grunwald to modify M.S. Tverdynin, rarely others. The morphological study of the body is carried out taking into account the long-term presence of the subject under mechanical ventilation. The first evidence of direct relationship of disease severity, the prevalence of pathological process in the body of the length of stay under mechanical ventilation. With the accumulation of the test material, probably will be obtained data representing the scientific and practical interest.

During recovery incidence of respiratory viral infections, it is important to remember about the likelihood of viral and bacterial pneumonia with stroke. Along with bacterial swab test and bacterioscopy of biological objects polymerase chain reaction (PCR) and enzyme-linked immunosorbent assay (ELISA)are conducted, which facilitate the search for etiological factors of pneumonia.

Federal Law of 21.11.2011 №323-FZ (67 articles) provides for compliance with decent relationship to the body of the deceased person and the maximum preservation of its anatomical shape. In accordance with the Federal Law of the Russian Federation, in the order of the Ministry of Health of the Russian Federation from June 6, 2013 № 354n "On the procedure of autopsy" also emphasizes the need to care with respect to the body of the deceased person. In this context, it is important to improve in nearer future a low-impact autopsy technology in pulmonary pathology without compromising quality of mortem examination.

At present, we performed a patent search aimed to develop a low-impact way to autopsy in diseases of the respiratory, digestive, genitourinary system.

At the same time, we should recognize the need to improve methods of investigation of lung tissue with pneumonia, especially in low-impact autopsy. Particular attention is paid to the study of the body at the level of the segmental bronchus. In these circumstances, it is unlikely escape from view pathologist even small foci of pathological changes in the body. The comparative characteristics of morphometric parameters of organs is to be implemented for further development of the postmortem examination. In the study of lung tissue, including a segmental level special scissors are used. Valuable information can be obtained by a careful analysis of the results of postmortem radiograph of the chest. In a case of brain stroke the postmortem computed tomography of the skull, and later of the brain significantly expands our understanding of the disease tanatogenesis (T.N. Mills, J.A. Medvedev, N.A. Ananiev, A.V. Suhatskaya, Y.M. Zabrovskaya, A.O. Kaznacheeva, 2008). Before sectioning the lumbar puncture is performed to obtain liquor. Its morphological and bacteriological examination will also help to solve the key problems of improving diagnostic pathology of nosocomial pneumonia with stroke. Improving mortem examination at nosocomial pneumonia caused by cerebral strokes is associated with lifetime analysis of clinical, laboratory, functional, instrumental data in correlation with the results of the autopsy.

CONCLUSIONS:

Thus, the optimization of post-mortem examinations at nosocomial pneumonia in patients with brain stroke is largely connected with the development and introduction of new approaches in research

methodology of lung tissue in a low-impact autopsy technology. Improving the low-impact autopsy technology, autopsy techniques lungs, the widespread use of different methods of coloring histological sections body, optimization of bacteriological and bacterioscopic study are considered to be main components of the postmortem examination with pneumonia in patients with stroke. In terms the mortem examination should include morphological and bacteriological examination of cerebrospinal fluid. In turn posthumous chest X-ray, and possible brain computed tomography allow to reach a new level of research at nosocomial pneumonia in patients with stroke. Consequently, in nosocomial pneumonia caused by cerebral stroke the mortem examination is related to the lifetime analysis of clinical, laboratory, functional, instrumental data in the clear linkages with the autopsy results.

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