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**FEATURES OF THE AUTOPSY IN THE SUDDEN UNEXPECTED DEATH IN EPILEPSY**

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Medico-legal diagnosis of sudden unexpected death in epilepsy (SUDEP) should be complex and based on medical history, morphological changes in the brain (potential epileptogenic foci, as well as changes due to seizures) and other organs and on the results of additional studies.

When establishing a diagnosis expert should take into account the following data concerning medical history and circumstances of the case:

- information about the nature, duration and frequency of seizures;
- difficulties in relieving seizures in the recent past;
- treatment regimen and adherence to treatment regimen;
- the underlying cause of epilepsy;
- circumstances of death;
- eyewitness accounts;
- concomitant diseases and conditions (heart pathology, alcoholism, drug use) and social characteristics (mental retardation).

When examining the brain, it is recommended to take samples from the following parts:

- cortex from the vascular watershed region;
- insular cortex;
- amygdala;
- hippocampus;
- thalamus;
- temporal cortex;
- cerebellum;
- medulla.

Epilepsy may be associated with such morphological changes as focal cortical dysplasia (most often in the frontal lobe and the area around the precentral gyrus) and "old" concussion foci in the cerebral cortex, especially in the frontotemporal region.

Previous seizures might cause hippocampal sclerosis (in patients with temporal epilepsy), loss of neurons and gliosis of the cerebellar tonsils, decrease of the number of neurons in the neocortex, parahippocampal gyrus, layer of the Purkinje's cells in the cerebellum, dorsomedial thalamic nuclei, basal nuclei and hippocampus. Patients suffered from epilepsy often have cerebellum atrophy.

Results of the studies show that heart weight in persons died from SUDEP hasn't significant difference from the heart weight in control group. But in the cases of SUDEP foci of myocyte vacuolization, interstitial edema and myocardium hemorrhages, fibrosis and hypereosinophilia were found more frequently. According to some authors interstitial myocardial fibrosis in the absence of coronary artery disease does not exclude SUDEP.

In case of suspicion for SUDEP it is important to perform toxicological screening. Determination of the levels of antiepileptic drugs allows to assess treatment compliance, overdose or discontinuation of the drug. Hair analysis allows to test treatment compliance in the long-term perspective (for example lack of drug intake, use of other drugs including non-prescribed or contraindicated).

Thus, data of medical history, circumstances of death, morphological changes associated with epilepsy, results of the ancillary tests, use of antemortem medical documentation, and awareness about possible causes and mechanisms of SUDEP allow the forensic pathologist to determine the cause of death, formulate medico-legal diagnosis and substantiate conclusions.