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Morfological Changes in Amygdala and Hipotalamic Nucleus Under Conditions of the Destruction of Dorsal Amygdalofugal Way

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Abstract—In chronic experiments on rabbits it has been shown that destruction of dorsal amygdalofugal ways leads to full and persistent blockade of hippocampal theta-rhythm. To elucidate the causes irreversible changes in different areas of the hippocampus and the medial nucleus of septum morphological studies were carried out in neurons and glial cells of bazolateral (AB), central (AC), lateral (AL) and cortical (ACO) nucleus of the amygdala and supraoptic (SO), ventromedial (VMH), lateral (AHL), medial mammilar (MM) nucleus of hypothalamus. Examination of the slices of the amygdalo (AB, AC, ACO, AL) and hypothalamic (SO, VMH, AHL, MM) nucleus of experimental animals after coagulation of the stria terminalis demonstrated that profound morphological changes were detected in neurons and glial cells of these structions. Morphological studies developed deep degenerative changes just lyzis of Nissel matter, swelling of apical dendrites, hyperchromatism of nuclei and decrease in the volume of the latter were typical findings, absence of tigroid matter in neurons and glial cells in different nucleus of hypothalamus and amygdala, under destruction of dorsal amygdalofugal tract. Neurons and glial cells are swelled.

One of the factors which modulates the excitability of neurons in septo-hippocampal system is supposed may be disturbance of hypothalamo-hypophysial neurosecretory system under the influence of destruction of amygdala-hypothalamic relations.

Keywords—dorsal amigdalofugal way, morphological changes, Nissl substance, glial cells, hypothalamus, amygdala.