Features of lung damage in case of combined COVID-19 infection and HIV: a clinical case

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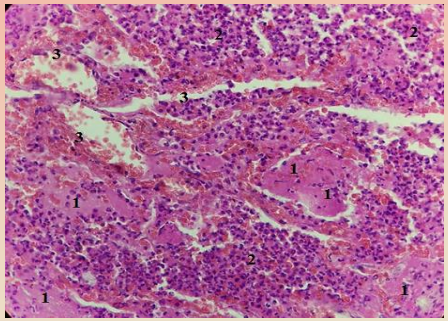
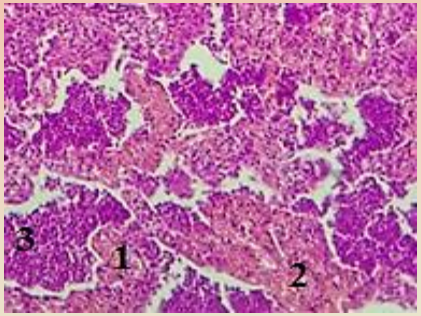
True for year 2020, there are about 37.9 million registered people living with HIV in the world. As HIV progresses, it infects an increasing number of CD4 + T-lymphocytes, over time their number reaches critical values. A particular danger is a combination of HIV infection with a new coronavirus infection - COVID-19.

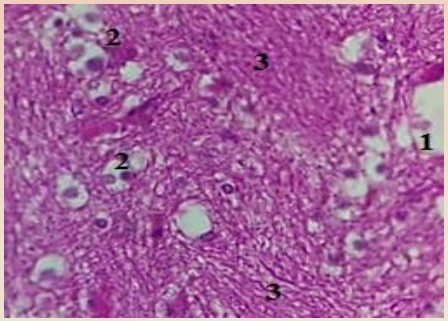
The aim of this study is to describe a case of COVID-19 infection in a patient with HIV infection.

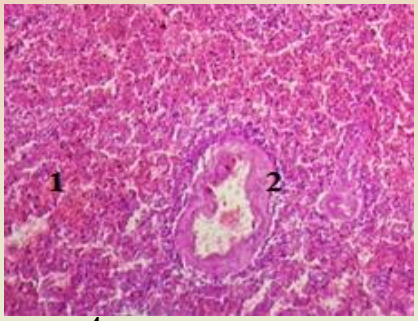
Methods. A histopathological study of tissue samples of the lungs, spleen and brain of a 42-year-old HIV-positive patient who died from viral-bacterial pneumonia with damage to both lungs was carried out.

Results. Histological examination revealed areas of epithelial desquamation, alveolar epithelium and macrophages with viral inclusions in enlarged nuclei, interalveolar septa thickened due to edema and plethora, mononuclear infiltration. In the alveoli and alveolar passages, hyaline membranes and fibrin were revealed along the contour. Areas of necrosis of the alveolar epithelium with exposure of the basement membrane, signs of pronounced edema with a hemorrhagic component were determined. In the lumen of the alveoli there were hemolyzed erythrocytes, in the pulmonary parenchyma - focal hemorrhages, signs of proliferation of capillary endothelial cells. Cytomegalovirus infection with brain damage, in which large cytomegalo cells with intranuclear and cytoplasmic inclusions were found, served as a sign of HIV infection. In the surrounding tissue, lymphohistiocytic infiltrates were determined, as well as productive-infiltrative panvasculitis. In the spleen, emptying and absence of the follicular apparatus, areas of uneven blood filling of the sinuses, hyalinized walls of arterioles were revealed.









staining with hematoxylin eosin, x 900

Findings. The immediate cause of death was a new coronavirus infection COVID-19 with Klebsiella pneumoniae, which caused bilateral viral-bacterial pneumonia, complicated by acute respiratory failure. The presence of a background pathology of HIV infection aggravated the condition of the patient, and undoubtedly influenced the death outcome.

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