

Histopathological Findings in Fatal COVID-19 Infections

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Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is the cause of ongoing pandemic disease COVID-19 with increasing deaths worldwide. Documentation of the histopathological features in fatal cases of the disease has been scarce due to sparse autopsy performance and incomplete organ sampling. Benjamin et al (2020) try to provide a clinicopathological report of severe COVID-19 cases by documenting histopathological changes and evidence of SARS-CoV-2 tissue tropism.¹ They studied on 14 postmortem tissue of patients who were COVID-19 positive before death. In their study primary pathology observed was diffuse alveolar damage, with virus located in the pneumocytes and tracheal epithelium. Microthrombi were scarce and endotheliitis was not identified.

Huilan et al (2020) described the histopathologic changes in the lung of a patient of 72 years old with COVID-19 was died from acute respiratory failure within 7 days of presentation. He had history of diabetes and hypertension and presented with fever and cough. Rapidly progressive respiratory failure required endotracheal intubation and mechanical ventilation 1 week after presentation. They obtained lung tissue by transthoracic 14-gauge needle biopsy from different segments coinciding with ground-glass opacities on chest computed tomography (CT). They also collected two throat swab samples from the tonsils and posterior pharyngeal wall. Biopsy lung sections were analyzed with hematoxylin–eosin staining, and immunostaining for SARS-CoV-2 was conducted. Throat swabs were assessed for SARS-CoV-2 by using real-time reverse transcriptase polymerase chain reaction assays.

They performed postmortem transthoracic needle biopsy. Histopathological examination of lung biopsy tissues revealed diffuse alveolar damage and organizing phase. They also found denuded alveolar lining cells with reactive type II pneumocyte hyperplasia. Intra-alveolar fibrinous exudates were present along with loose interstitial fibrosis and chronic inflammatory infiltrates. Intra-alveolar loose fibrous plugs of organizing pneumonia were noted, with presence of intra-alveolar organizing fibrin seen in most foci.

As autopsy of dead bodies died from COVID-19 are usually not done due to fear of spread of the deadly virus, so the data of histopathological findings of infected tissue are not sufficient to our knowledge.

References

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