

## Evolution of Fatal Lung Damage in COVID 19

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Corona Virus Disease (COVID 19), which primarily infects the lungs, exhibits a wide spectrum of pulmonary pathologies. This study intends to demonstrate the depth of lung damage against duration of the illness, considering comorbidities under different background situations. These five cases with COVID 19 were referred by our forensic unit for autopsy; Case 1: A 36-year-old previously healthy male presented with shortness of breath and died in OPD due to the early stage of pneumonia. Case 2: A 70-year-old male died in the ward while on treatment for COVID 19 Pneumonia Case 3 and 4: A 76-year-old woman and an 84-year-old male, both with diabetics, died at home following respiratory symptoms and post-mortem PCRs were positive for COVID 19 Case 5: A 32-year medical officer with multiple comorbidities died at the end of the 5<sup>th</sup> week of diagnosing COVID 19. The autopsies revealed that the lungs were soft to firm inconsistency in first 2 cases and with histological features of interstitial pneumonia in association with varying stages of diffuse alveolar disease, vascular thrombosis and pulmonary haemorrhages. The deceased were in immunosuppressive status and showed complicated pathologies specially proceeding to secondary bacterial pneumonia and abscess formation and the lungs showed consolidation. Also, there were microscopic evidence suggestive of viral inclusions and other specific changes. Findings of the case series showed similarity with the available, limited literature regarding the Covid-19 related pathological changes of the lungs, which needs further studies to identify further details of pathogenesis and to understand their role in the mechanism of death.

**Keywords:** *COVID-19, diffuse lung damage, thrombosis, interstitial pneumonia*