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**COVID-19 Myocarditis: Quantitative analysis of the inflammatory infiltrate
and a proposed mechanism**

COVID-19 has a significant effect upon the cardiovascular system. While a number of different cardiovascular histopathologies have been described at post-mortem examination, the incidence of typical viral myocarditis in COVID-19 positive patients appears very low. In this study, we further characterize and quantify the inflammatory cell infiltrate in a COVID-19 study cohort and compare the findings to both an age and disease matched control cohort of patients diagnosed with typical inflammatory myocarditis. All study and control cohorts had 1 or more of the comorbidities most commonly associated with severe disease (hypertension, type II diabetes, obesity, or known cardiovascular disease). The results demonstrate a skewed distribution of the number of CD68+ cells in COVID-19 hearts, with upper quantiles showing a significant increase as compared to both match control hearts, and those with myocarditis. In contrast, hearts from typical inflammatory myocarditis contained increased numbers of CD4+, and CD8+ cells compared to both COVID-19 and control cohorts. In conclusion, the presence of an increased number of CD68+ cells suggests that COVID-19 may incite a form of myocarditis different from typical viral myocarditis, and associated with diffusely infiltrative cells of monocyte/macrophage lineage.