

Transmission of SARS-CoV-2 from humans to a 16-year old domestic cat with co-morbidities in Pennsylvania, USA.

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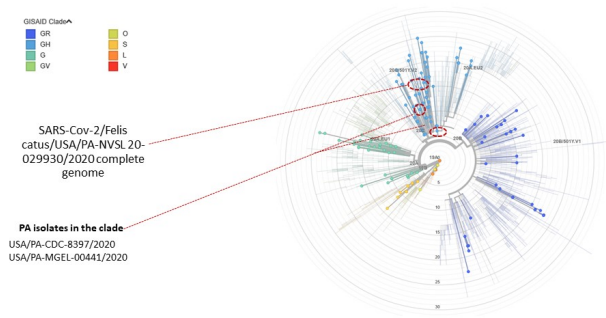
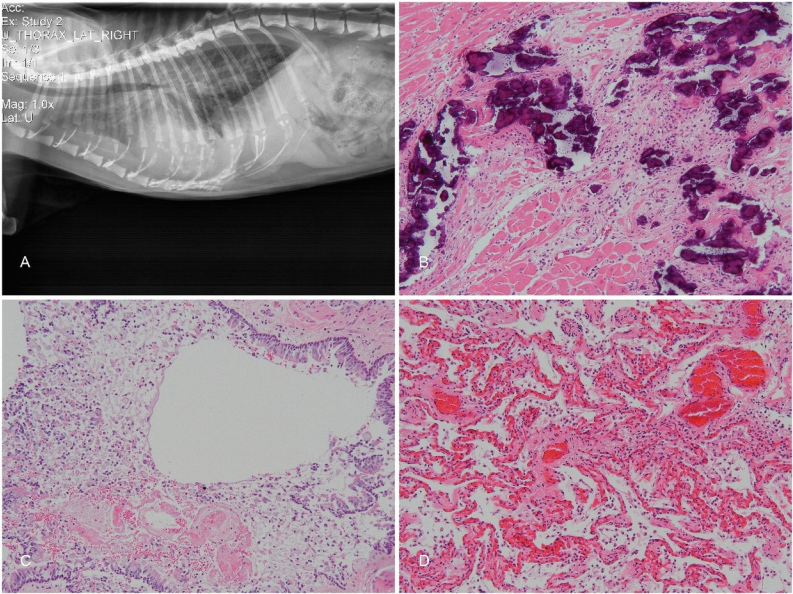
April 05, 2024

Abstract

Severe acute respiratory syndrome-related coronavirus 2 (SARS-CoV-2), besides causing human infection, has been shown to naturally infect several susceptible animal species including large cats (tigers, lions, pumas, spotted leopards), dogs, cats, ferrets, gorillas, and minks. We report the detection of SARS-CoV-2 from a domestic cat that exhibited respiratory disease after being exposed to SARS-CoV-2 virus from humans in the same household. SARS-CoV-2 RNA was detected in two oropharyngeal swabs collected at two time points, 11 days apart; the first, when the cat was reported to be sick and the second, before euthanasia due to poor prognosis. The viral nucleic acid detected at two time points showed no genomic variation and resembled the clade GH circulating in humans in the United States. Clinical and pathological findings noted in this 16-year-old cat were consistent with respiratory and cardiac insufficiency. SARS-CoV-2 viral infection was likely an incidental clinical finding, as virus was not detected in fixed lung, heart or kidney tissues. Only fresh lung tissue collected at necropsy showed the presence of viral nucleic acid, albeit at a very low level. Further research is needed to clarify the clinical course of SARS-CoV-2 in companion animals of advanced age and underlying cardiac disease.

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PA Cat SARS-CoV-2 isolate clustered closely with SARS-CoV-2/human/PA isolates (in GSAID database)