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Subject: PRO/AH/EDR> COVID-19 update (15): animal, India (UP) wild leopard

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COVID-19 UPDATE (15): ANIMAL, INDIA (UTTAR PRADESH) WILD LEOPARD

A ProMED-mail post

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International Society for Infectious Diseases

<http://www.isid.org>

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<https://www.biorxiv.org/content/10.1101/2022.01.11.475327v1>

Citation: Systemic infection of SARS-CoV-2 in free ranging Leopard (*Panthera pardus fusca*) in India

Abstract

We report the pathomorphological and virological characterization of SARS-CoV-2 in naturally infected, free-ranging Indian leopard (*Panthera pardus fusca*). Whole-genome sequence analysis confirmed infection of delta variant of SARS-CoV-2, possibly spillover from humans, but the case was detected when infection level had dropped significantly in the human population. This report underlines the need for intensive screening of wild animals for keeping track of the virus evolution and development of carrier status of SARS-CoV-2 among wildlife species.

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[Carnivores (Order Carnivora) are susceptible to infection by SARS-CoV-2. The pandemic virus has been confirmed so far in carnivores of 6 families, canids (dogs and raccoon dogs), felids (cats, tigers, lions, puma/cougar, and snow leopard), mustelids (ferrets and minks), viverrids (binturongs), procyonids (coati/mundis), and hyenids (hyenas). In most cases, infections are subclinical or mild, but there are some reports of deaths attributable to COVID-19.

So far, all wild carnivores that were diagnosed with COVID-19 were held captive at zoos, except for a free-ranging mink in Utah.

The leopard of this report represents the 2nd wild carnivore found to be naturally infected by SARS-CoV-2. It was a cub of approximately 1 year of age, found dead in an agricultural field of Uttar Pradesh. Post mortem examination revealed piercing wounds in the head and neck, consolidation of both lungs, and congestion and hemorrhages in other organs. Brain, spleen, lymph node, and lung specimens were found positive for SARS-CoV-2. Although the proximal cause of death was probably the traumatic injuries inflicted by another carnivore, the findings strongly suggest the infected leopard was going through a moderate to severe disease due to SARS-CoV-2 infection.

This finding has 2 important implications. One is that it alerts about the possibility that the virus finds in these carnivores a niche where it can be maintained and evolve, circulating endemically as immunity in people builds up globally due to natural infection and vaccination. This is being observed in white-tailed deer, with findings of high rates of infection in many populations from the USA and Canada. Another major implication is that COVID-19 might add to the list of threats faced by many big cats, which already struggle to thrive in the midst of habitat fragmentation and degradation, climate change, poaching, and many other diseases. - Mod.PMB

ProMED map:

Uttar Pradesh State, India: <https://promedmail.org/promed-post?place=8700842,322>

See Also

2021

COVID-19 update (447): animal, USA (PA) zoo, lynx 20211227.8700517

2020

COVID-19 update (423): animal, Denmark (SL) zoo, tiger, OIE 20211209.8700158

COVID-19 update (418): animal, Belgium, zoo, hippopotamus, 1st rep 20211206.8700102

COVID-19 update (413): animal, Canada, wild deer 20211202.8700020

COVID-19 update (409): animal, Croatia, zoo, lion, OIE 20211129.8699951

COVID-19 update (400): animal, sheep, research, experimental infection 20211121.8699806

COVID-19 update (395): animal, UK, dog, OIE 20211117.8699698

COVID-19 update (392): animal, USA, zoo, snow leopard, fatal 20211115.8699676

COVID-19 update (387): animal, Singapore, zoo, lion 20211112.8699622

COVID-19 update (381): animal, USA, zoo, hyena, 1st rep 20211108.8699526

COVID-19 update (364): animal, USA (IL) zoo, coatimundi 20211026.8699258

COVID-19 update (354): animal, USA, zoo, wild carnivore 20211018.8699125

COVID-19 update (348): animal, USA, zoo, snow leopard, fatal, susp 20211013.8699020

COVID-19 update (265): animal, USA, zoo, snow leopard 20210802.8563564

COVID-19 update (254): animal, USA, zoo, snow leopard 20210726.8545843

COVID-19 update (230): animal, USA, zoo, vaccination 20210705.8496776

COVID-19 update (197): animal, India, zoo lion, fatal 20210607.8430529

COVID-19 update (159): animal, India, zoo, lion 20210504.8344580

COVID-19 update (33): animal, Sweden, zoo, tiger, lion 20210125.8134087

COVID-19 update (13): animal, USA, zoo, gorilla 20210112.8095510

2020

COVID-19 update (538): USA, animal, zoo, snow leopard 20201214.8017000

COVID-19 update (536): animal, USA (UT) wild mink, 1st case 20201213.8015608

COVID-19 update (525): Spain, animal, zoo, lion, human 20201208.8002466

COVID-19 update (469): USA (TN) zoo, tiger 20201104.7915683

COVID-19 update (356): South Africa (GT) animal, puma, zoo, OIE 20200813.7673666

COVID-19 update (143): USA (NY) animal, zoo, tiger, lion, tests 20200430.7284183
COVID-19 update (141): India, animal, wild tiger, susp, clarification, RFI 20200430.7281768
COVID-19 update (138): India, animal, wild tiger, fatal 20200428.7275765
COVID-19 update (135): Netherlands (NB) animal, farmed mink 20200427.7272289
COVID-19 update (130): USA (NY) zoo, tiger, lion, new cases 20200425.7266556
COVID-19 update (85): USA (NY) tiger, OIE 20200406.7191480
COVID-19 update (84): USA, tigers 20200406.7191352
COVID-19 update (76): China (HU) animal, cat, owned, stray, seropositive 20200403.7179946
COVID-19 update (75): China (Hong Kong) cat, OIE 20200403.7179945
COVID-19 update (70): China (Hong Kong) cat, pets & stock 20200402.7173286
COVID-19 update (58): Belgium, cat, clinical case, RFI 20200327.7151215
COVID-19 update (57): global, re-using PPE, DR Congo, more countries, WHO 20200327.7149046
COVID-19 update (56): China (Hong Kong) animal, dog, final serology positive 20200326.7146438
COVID-19 update (45): China (Hong Kong) animal, dog, 2nd case PCR positive 20200319.7112693
COVID-19 update (37): China (Hong Kong) animal, dog, prelim. serology negative 20200312.7081842
COVID-19 update (30): China (Hong Kong) dog, susp, serology pending 20200306.7057595
COVID-19 update (25): China (Hong Kong) dog, susp, OIE 20200302.7040373
COVID-19 update (22): companion animals, dog susp, RFI 20200229.7036661
COVID-19 update (17): China, animal reservoir, wildlife trade & consumption 20200225.7024245
COVID-19 update (11): animal reservoir, intermediate hosts, pangolin susp 20200220.7009213
COVID-19 update (08): companion animals, RFI 20200218.7002276
COVID-19 update (06): animal reservoir, intermediate hosts 20200217.6997782
Novel coronavirus (42): China, global, COVID-19, SARS-CoV-2, WHO 20200211.6979942
Novel coronavirus (40): animal reservoir, pangolin poss intermediate host, RFI 20200210.6972104
Novel coronavirus (28): China (HU) animal reservoir 20200201.6943858
Novel coronavirus (22): reservoir suggested, bats 20200129.6930718
Novel coronavirus (20): China, wildlife trade ban 20200127.6922060
Novel coronavirus (18): China (HU) animal reservoir 20200125.6915411
Novel coronavirus (15): China (HU) wild animal sources 20200123.6909913
Novel coronavirus (03): China (HU) animal reservoir suggested, RFI 20200114.6887480
Novel coronavirus (01): China (HU) WHO, phylogenetic tree 20200112.6885385
Undiagnosed pneumonia - China (HU) (07): official confirmation of novel coronavirus 20200108.6878869
.....as/pmb/mj/tw/ml

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