



Letters & Notices

CORONAVIRUS

Conclusive proof needed for animal virus reservoirs

RECENT reports from Hong Kong and China have declared a dog to be infected with Covid-19. It is unsurprising to me that dogs should be infected with a beta coronavirus (the same group of coronaviruses into which Covid-19 is now placed).

In 2003, myself and colleagues discovered a beta coronavirus in dogs during our investigations of an acute respiratory disease outbreak in a rehoming kennel in the UK.¹ Several months after our publication, the identification of the coronavirus responsible for SARS (severe acute respiratory syndrome) was first published. The similarity between the two viruses caused some panic euthanasia of dogs in China. This was both unfortunate and unwarranted. Although both viruses were similar, they were not the same. There was, and still is, no evidence that the canine respiratory coronavirus (CRCoV) is zoonotic in spite of the high infection rate in those kennels with a high incidence of canine infectious respiratory disease.²

The search for animal reservoirs for new and emerging human infections (zoonotic infections) is fully justified and essential; the vast majority of new human infections are zoonotic.

“**There is a set of established principles that must be adhered to before declaring an animal to be the virus reservoir**”

We, as veterinary researchers, have understood this transmission for a long time. However, what we also understand is that demonstration of similar viruses or, these days, nucleic acid sequences (DNA or RNA) within animal viruses that are similar to emerging human viruses is insufficient proof of causation. There is a set of established principles (Koch's postulates) that must be adhered to before declaring an animal to be the virus reservoir.

It is this same caution that should be applied to reporting snakes, pangolins and even dogs to be the reservoir for Covid-19.

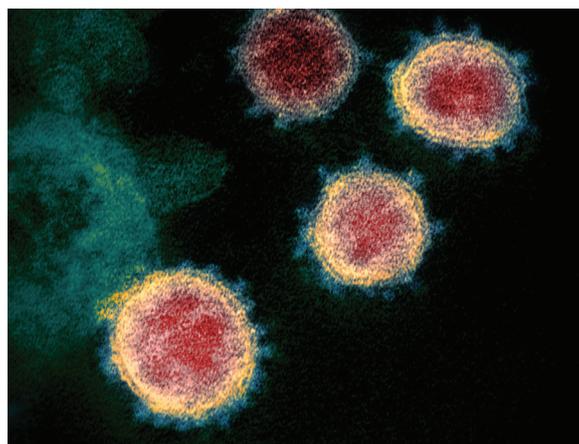
The significance of this caution is that, hopefully, there should never be indiscriminate culling of animals without conclusive proof that they really are reservoirs of the human pathogen.

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References

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Severe acute respiratory syndrome coronavirus-2