Unusual cluster of *Mycobacterium bovis* infection in cats


**Context**

Tuberculosis (TB) in British cattle caused by *Mycobacterium bovis* has only sporadically affected companion animals. Between December 2012 and March 2013, seven laboratory-confirmed cases of *M bovis* infection in cats were seen at one veterinary clinic in Newbury, Berkshire, UK. Two more cats with suspected *M bovis* infection were identified in the same time frame. All nine cats were from separate households and lived within a 5 km radius; six lived within a 250 m radius.

**Main conclusion**

The most likely source of infection for at least some of the cats is infected wildlife – probably rodents and/or badgers. Genotyping showed that the polymorphism in these cat isolates reflects the polymorphism found in the local cattle/wildlife population and supports the idea that cats are occasional spillover hosts for *M bovis* from a local wildlife or cattle reservoir.

**Approach**

Traditional field epidemiological investigations were conducted to characterise this incident. Isolates from local cats, cattle and an alpaca were genotyped. Selected isolates were whole genome sequenced.

**Results**

A history of likely bite wounds in four cases, and popliteal lymphadenitis (possibly due to distal hindlimb inoculation) in three others, offers a route of infection through biting for seven out of the nine cases. All *M bovis* isolates from the culture-positive cats were of the rare 10:u genotype, previously identified in another cat (2011), an alpaca (2010) and 21 cattle herd breakdowns from the same area since 2008. Whole genome sequence of the 10:u isolates from cats and cattle showed common characteristics suggesting that at least two transmissions had occurred into these cats from local wildlife/cattle.

**Interpretation**

It is impossible to be more precise about the exact origin of infection for the cats in this cluster, but the balance of evidence and our knowledge of the way in which this disease spreads suggests that a wildlife/environmental source is more likely than a cattle source.

**Significance of findings**

Most cases of tuberculous disease in cats caused by *M bovis* are sporadic and diagnosed in areas of endemic infection in cattle and wildlife. The incident reported here was unusual and does not change the view that cats represent occasional spillover hosts of the bacterium, playing a limited role in the epidemiology of bovine TB in Great Britain. Nevertheless, the infection in cats can give rise to a serious and potentially zoonotic disease. Therefore, practitioners should remain alert for (and seek differential bacteriological diagnosis of) suspected mycobacterial disease in cats.
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