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Mycobacterium bovis infected domestic cats in an officially bovine tuberculosis free country resulting in human infection

Content

Despite the official bovine tuberculosis free status, *Mycobacterium bovis* sporadically causes tuberculosis (TB) in non-bovine mammals in the Netherlands. In early 2023, two domestic cats from unrelated households were diagnosed with *M. bovis* following euthanasia due to severe respiratory symptoms. In one household, three additional cats were euthanized, with post-mortem confirmation of *M. bovis* infection. An epidemiological link was hypothesized but not supported by genetic analysis, as the isolates from the two households differed in spoligotype and by at least 500 single nucleotide polymorphisms (SNPs). Commercial raw pet food was suspected as the probable source, but this could not be confirmed.

Given the zoonotic potential of *M. bovis*, human contacts were screened using the Tuberculin Skin Test (TST) and Interferon-Gamma Release Assay (IGRA). Lung lesions were detected by computed tomography in a TST-positive, IGRA-negative contact and *M. bovis* DNA was isolated from a lung biopsy. This DNA contained specific SNPs also identified in the feline *M. bovis* isolates from the respective household, supporting the hypothesis of intra-species *M. bovis* transmission. All TST-positive contacts received antibiotic therapy.

These cases indicate that TB should be considered in the differential diagnosis of respiratory conditions in companion animals and highlight the need for One Health vigilance to prevent *M. bovis* transmission among humans, companion animals, wildlife, and livestock.

Keywords

Feline tuberculosis, *Mycobacterium bovis*, Zoonosis, Human transmission, Officially bTB free (OTF) country, The Netherlands

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Professional Status of the submitter, who is also the speaker

PhD Student

Track Classification: Veterinary Bacteriology, Mycology and Virology

Contribution Type: Oral presentation

Comments:

Please note that the submitter is an ECVM resident and not a PhD student. The PhD student option was selected in the absence of a suitable alternative. Additionally, it was the intention to italicize

Mycobacterium bovis throughout the abstract; however, this was not feasible due to character limitations, as each italicized word counted as two additional characters.