



What are feline respiratory mycoplasma infections?

- *Mycoplasma felis* is considered a primary opportunistic pathogen of upper respiratory tract disease (URTD) in cats, but can also be associated with lower respiratory tract infections (LRTIs).
- In cats, a range of non-haemotropic mycoplasmas have been described, including *M. arginini*, *M. arthriditis*, *M. canadense*, *M. canis*, *M. cynotis*, *M. feliminutum*, *M. felis*, *M. gallisepticum*, *M. gatae*, *M. hyopharyngis*, *M. lipophilum*, *M. pulmonicum* and *M. spumans*.
- *M. felis* may be identified in cats with clinical signs or in healthy cats living with infected animals.
- *Mycoplasma* is a genus of bacteria that lack a cell wall.
- This characteristic makes them naturally resistant to antibiotics that target cell wall synthesis. However, they are also easily damaged outside the host.
- They are also very difficult to cultivate *in vitro*.

Infection & pathogenesis

- As a normal inhabitant of the respiratory mucosae, *M. felis* is transmitted directly by aerosol, but also by grooming (saliva).
- Indirect transmission is not considered important, as mycoplasmas are not able to survive for a long time outside the host.
- Stressors, such as overcrowding, concurrent respiratory viral infections and poor hygiene, can promote proliferation of mycoplasmas and their transmission.
- *M. felis* mainly inhabits the mucosae of the upper respiratory tract, where it adheres to the epithelial lining.
- Here, it can excrete toxic metabolites and cause increased cell membrane permeability.
- Mycoplasmas can also invade the lower respiratory tract as secondary opportunistic pathogens.

Clinical signs

- *M. felis* is typically associated with URTD, and signs may include ocular and/or nasal discharge, coughing, sneezing, conjunctivitis, chemosis, lethargy and anorexia. Dyspnoea is rare.
- Very young, very old and immunosuppressed cats are more likely to develop severe disease and can even die, usually due to secondary infections (pneumonia), anorexia (hepatic lipidosis) and dehydration.
- LRTIs may cause coughing, lethargy, anorexia, tachypnoea or dyspnoea, nasal discharge and pyrexia.
- *M. felis* has also been associated with other pathologies such as pyothorax, conjunctivitis, keratitis and monoarthritis or polyarthritis.

Diagnosis

- Mycoplasma infection can be clinically suspected in cats with chronic respiratory disease, or in unresponsive RTIs treated with antibiotics targeting cell wall synthesis, such as β -lactams (e.g. penicillins, cephalosporins).
- PCR is the method of choice for the diagnosis of mycoplasma infections.
- Contact your laboratory to make sure the sample is taken at the correct site and shipped appropriately (e.g. conjunctival or pharyngeal swab, endotracheal or bronchoalveolar lavage [BAL]).
- Quantitative PCR is useful to interpret positive results in clinical scenarios, mainly following the collection of conjunctival cells from cats with conjunctivitis, or BAL from cats with lower respiratory tract signs, or post-mortem lung samples.

Disease management

- Antimicrobial therapy is commonly used to treat mycoplasmal respiratory infections.
- However, antimicrobial susceptibility tests are difficult to interpret because mycoplasmas cannot be cultured on standard laboratory media.
- As mycoplasmas lack a cell wall, β -lactam antibiotics (e.g. penicillins, cephalosporins) are not effective.



FACT SHEET

- Doxycycline (5 mg/kg q12h or 10 mg/kg q24h PO) is a good first-line antibiotic choice; doxycycline tablets should be followed by food or water to ensure complete swallowing to prevent possible oesophagitis.
- Two weeks of doxycycline treatment is usually effective for clinical resolution in cats with URTD. However, longer courses of six weeks can be required for clearance (PCR negative), if this is needed e.g. in recurring disease.
- As second-line agents, macrolides (azithromycin), lincosamides (clindamycin) or fluoroquinolones (marbofloxacin or pradofloxacin) might be used.

Prevention

- No vaccine is currently available.
- The prevention of mycoplasma infections is based on the correct management of feline communities: avoid overcrowding, reduce stressors and concurrent infections, ensure good hygiene, isolate cats with respiratory signs.



Image courtesy of Séverine Tasker

- BAL sample from the cat on the right

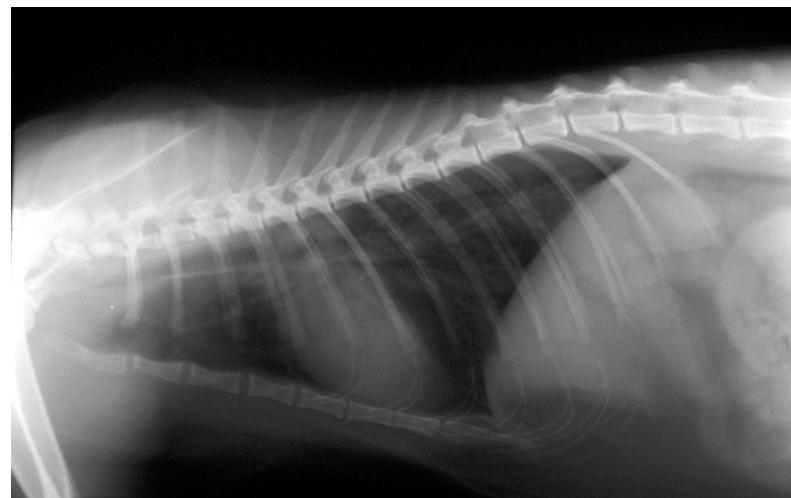


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- Same cat as above, after 6 weeks of doxycycline treatment.