

FACT SHEET

What is *Bordetella bronchiseptica*?

- *Bordetella bronchiseptica* (*Bb*) is a gram-negative bacterium that colonises the respiratory tracts of mammals.
- It is a primary pathogen of domestic cats, particularly in high population density conditions, such as rescue shelters and multicat households.
- *Bb* can (rarely) infect humans (zoonosis).
- The bacterium is susceptible to common disinfectants.

Infection

- The bacterium is shed in oral and nasal secretions of infected cats. After experimental infection, *Bb* could be isolated for at least 19 weeks from secretions.
- Transmission probably occurs through direct and/or indirect contact with such secretions.
- *Bb* colonises the ciliated epithelium of the respiratory tract of the host, establishing chronic infections.
- After infection, serum antibodies rise rapidly, but it is unknown for how long they persist.
- Dogs with *Bb* respiratory disease ('kennel cough') pose a risk for cats.

Clinical signs

- A wide range of respiratory signs have been associated with *Bb* infection, from a mild illness with fever, coughing, sneezing, ocular discharge and lymphadenopathy to severe pneumonia with dyspnoea (and cyanosis), which may be fatal.
- Pneumonia is usually seen in kittens aged <12 weeks, but older cats can be affected as well.
- *Bb* infection should be considered in any coughing cat.

Diagnosis

- Bacterial culture and sensitive real-time PCR methods are available.
- Samples for isolation can be obtained as nasal or oropharyngeal secretions (swabs) or through bronchoalveolar lavage.
- The identification of *Bb* from bronchoalveolar lavage samples of cats with lower respiratory signs is diagnostic.
- Cytological analysis of bronchoalveolar washes demonstrates polymorphonuclear leucocytes, macrophages and bacteria.

Disease management

- Antibacterial therapy is indicated, even if the signs are mild.
- Where sensitivity data are unavailable, tetracyclines are recommended. Doxycycline is the antibiotic of choice.
- Severely affected cats require supportive therapy and intensive nursing care. Oxygen therapy should be considered in cats with severe dyspnoea.
- Nebulization in cats with pneumonia may reduce congestion. Mucolytics can be helpful.
- Intravenous fluid administration may be required to compensate dehydration and restore electrolyte and acid-base balance.

Vaccination

- In some European countries, an intranasal modified live vaccine is available. The modified live product is licensed for use as a single vaccination with annual boosters.
- *Bb* is a non-core vaccine component.
- Vaccination should be limited to cats living in high-density and/or high-risk populations with a history of *Bb* disease.



***Bordetella bronchiseptica* infection**

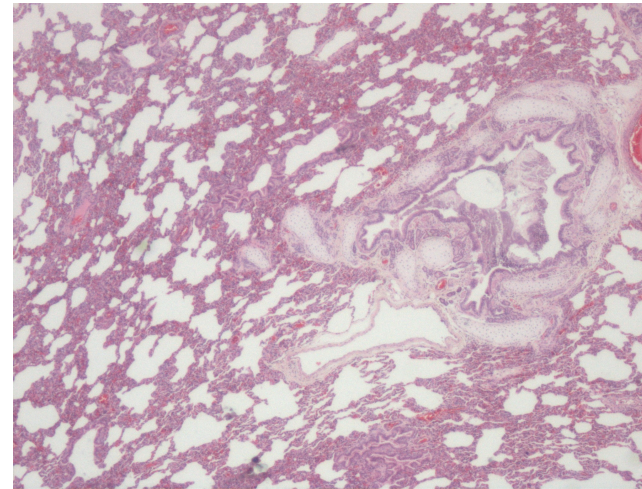
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- Cats receiving live intranasal vaccines will shed bacteria; they must be avoided where an owner is known to be immunocompromised.
- As in dogs, these vaccines occasionally induce mild clinical signs in cats.



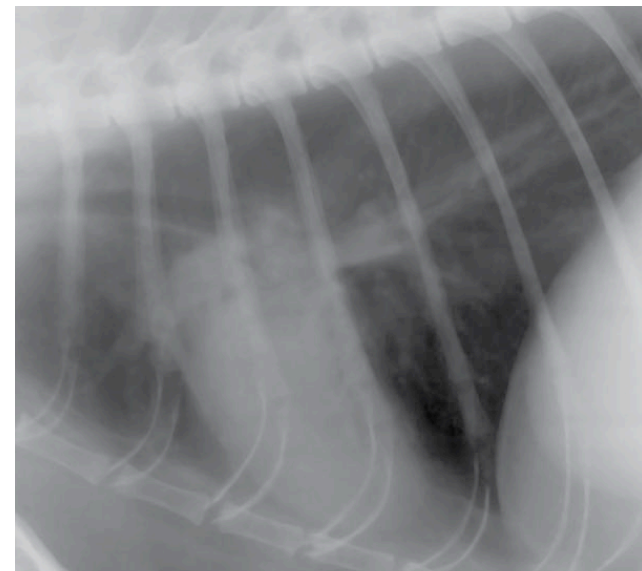
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- Lungs of a kitten that died of pneumonia. *Bordetella bronchiseptica* was isolated from the lungs.



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- Lung section from a kitten that died as a result of pneumonia caused by *Bordetella bronchiseptica* infection.



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- *B. bronchiseptica* infection in cats can lead to bronchopneumonia.