

# Chronic Rhinitis in the Cat

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## KEYWORDS

- Feline chronic rhinitis • Nasal biopsy • Neutrophilic inflammation • Herpesvirus
- Bacteria • Treatment

## KEY POINTS

- Feline chronic rhinitis and/or rhinosinusitis is the second most common cause of feline rhinitis, accounting for approximately 35% of cases.
- Proposed causes relate to initial turbinate damage by feline herpesvirus-1 likely combined with an impaired or deranged immune response, allowing establishment of recurring secondary bacterial infections.
- Bacteria commonly identified are typically commensal to the oropharynx; the role of *Bordetella bronchiseptica* and *Mycoplasma* spp as primary agents is unclear at this time.
- Repeated short courses of antibacterials may result in selection for *Pseudomonas* spp.
- Treatment is primarily supportive, comprising antibacterials, mucolytics or decongestants, antiviral therapies, and in severe cases surgery. Nasal flushing to remove mucus is often beneficial.
- Owners need to be counseled that cure is unlikely. Treatment aims to reduce the frequency and severity of episodes.

## INTRODUCTION

Feline chronic rhinitis can be defined as inflammation of the nasal cavity that has been present for 4 weeks or longer, either intermittently or continuously.<sup>1</sup> Because the frontal sinuses can also be involved, the condition may be called chronic rhinosinusitis (CRS). The diagnosis accounts for approximately 35% of cases of feline rhinitis<sup>2,3</sup> and, after neoplasia, is the second most common cause of chronic nasal discharge in cats.<sup>3</sup> Despite being a relatively common condition in feline practice, it can be a frustrating disease to manage.

## CAUSES

It has been proposed that primary viral infection, especially by feline herpesvirus-1 (FHV-1), causes damage to the mucosal epithelium and underlying turbinate

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bones, thereby predisposing to recurrent bacterial rhinitis.<sup>4–6</sup> One study used a polymerase chain reaction (PCR) technique to identify FHV-1 DNA in nasal biopsy samples but failed to show a difference in isolation rates between cats with CRS and healthy control cats.<sup>6</sup> This suggests that recrudescence of viral disease per se may be less important in the role of CRS than other factors such as structural damage, secondary bacterial infection and impaired immune function.<sup>7–10</sup>

Although bacterial infection has been identified in 69% to 90% of cases,<sup>1,6</sup> primary bacterial infection is considered rare. Mixed growth of commensal organisms is frequently identified; more significance might be attached to a heavy pure growth of one organism, especially those that are considered pathogenic (**Box 1**).<sup>6</sup> Rarer bacteria isolated from cases of CRS include *Haemophilus* spp<sup>11</sup> and *Capnocytophaga* spp.<sup>12</sup>

One study<sup>10</sup> attempted to evaluate the role of *Bartonella* spp in CRS but failed to identify these organisms by culture of blood samples or PCR of nasal biopsies, with the exception of one case that had a nasopharyngeal abscess. Serologic testing did not identify differences in seropositivity to *Bartonella* spp between cats with CRS and three control groups. Although the study was underpowered, it did not support a role for these organisms in CRS.

The role of *Mycoplasma* spp in rhinitis remains uncertain because these organisms have been considered part of the commensal flora in the upper respiratory tract. *Mycoplasma* spp were detected in cats affected by CRS but not in control cats, suggesting that they may play a role in this disease complex.<sup>6</sup> Use of PCR may facilitate identification of *Mycoplasma* spp, which can be difficult to culture.<sup>13</sup>

Retroviral infection was previously suggested to be associated with CRS<sup>14</sup> because in one study 55% of cats were positive for feline leukemia (FeLV) infection.<sup>15</sup> However, subsequent studies showed a reduced prevalence of retroviral infection (0%–7%).<sup>1,16,17</sup> This mirrored the declining prevalence of infection in the feline population after the introduction of FeLV vaccination.

#### Box 1

##### Potentially pathogenic bacteria in feline CRS

*Pseudomonas aeruginosa*

*Escherichia coli*

*Streptococcus viridans*

*Staphylococcus pseudintermedius*

*Pasteurella multocida*

*Corynebacterium* spp

*Actinomyces* spp

*Bordetella bronchiseptica*

*Mycoplasma* spp

All anaerobes

Data from Johnson LR, Foley JE, De Cock HE, et al. Assessment of infectious organisms associated with chronic rhinosinusitis in cats. *J Am Vet Med Assoc* 2005;227(4):583.

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