

Feline calicivirus upper respiratory disease

- It is caused by feline caliciviruses (FCV), highly contagious pathogens of the upper respiratory tract, widespread among felids, with the highest prevalence in large groups of cats housed together.
- FCV are highly variable and mutate continually; numerous variants exist with a wide spectrum in virulence, antigenicity and induced immunity.
- Simultaneous infections with FCV, FHV, *Chlamydia* and/or *Bordetella* often occur.
- Outbreaks of a more severe, systemic and often lethal form of FCV infection (causing the 'virulent systemic feline calicivirus disease') have been described in the United States and Europe.

Infection

- Sick, acutely infected cats shed FCV in oronasal and conjunctival secretions. On recovery, many cats continue shedding, most of them at low levels for at least one month post-infection, a few for several years.
- Infection mainly occurs through direct contact, but indirect transmission is common, as the virus can remain infectious for up to one month on dry surfaces at room temperature.

Clinical signs

- Clinical signs depend on the virulence of the involved FCV variant and the age of the cat.
- Oral ulcers, upper respiratory symptoms and a high fever; limping due to transient arthritis may also be observed.
- Pneumonia, particularly in young kittens.
- FCV are found in nearly all cats with chronic stomatitis or gingivitis.
- Cats with virulent systemic feline calicivirus disease have fever, cutaneous oedema, ulcerative lesions on the head and limbs and jaundice. Mortality is high (up to 67%) and the disease is more severe in adult cats.

Diagnosis

- FCV RNA can be detected in conjunctival and oral swabs, blood, skin scrapings or lung tissue using RT-PCR. However, strain variability may lead to false negatives.
- Positive RT-PCR results should be interpreted with caution, as they may be due to low level shedding by persistently infected virus carriers. Occasionally, FCV may be shed after immunisation with live vaccines.
- Virus isolation is less sensitive than RT-PCR, but indicates live virus. Conjunctival samples should be taken before application of fluorescein or Rose Bengal.
- Serological tests are not recommended, as they do not distinguish between infection- and vaccination-induced antibodies.
- The diagnosis of 'virulent systemic feline calicivirus disease' relies on clinical signs, high contagiousness and high mortality rates, and isolation of the same strain from blood of several diseased cats.

Disease management

- Supportive therapy (including fluid therapy) and good nursing care are essential.
- Anorectic cats should be fed blended, highly palatable, warmed-up food.
- Mucolytic drugs (e.g. bromhexidine) or nebulisation with saline may offer relief.
- Broad-spectrum antibiotics should only be given in severely affected cats to prevent secondary bacterial infections.
- FCV can persist in the environment for about one month and are resistant to many common disinfectants. Disinfectants based on sodium hypochlorite, potassium peroxy-monosulfate and chlorine dioxide are effective.
- In shelters, new cats should be quarantined for 3 weeks; in breeding catteries, queens should kitten in isolation and the litter should not mix with other cats until vaccinated.
- Early vaccination should be considered for litters from queens that had infected litters previously or if the kitten is at risk of infection.

Vaccination recommendations

- All healthy cats should be vaccinated using an FCV containing vaccine (core component).
- Asymptomatic FIV or FeLV-infected cats can be successfully vaccinated.
- Two injections at 9 and 12 weeks of age are recommended. In high-risk situations, a third kitten vaccination at 16 weeks is recommended.
- The final dose of the primary vaccination course is given at 10 to 16 months of age.
- Revaccinations are recommended at intervals of 3 years. However, cats in high-risk situations should be revaccinated every year.
- Adult cats with an unknown vaccination status should also receive two doses at an interval of 2 to 4 weeks, using vaccines containing the same virus strain, and be revaccinated one year later.
- In view of the high caliciviral variability, changing to different vaccine strain(s) may be of benefit, if disease occurs in fully vaccinated group-housed cats.
- Cats that have recovered from caliciviral disease are not protected for life, particularly if caused by different strains. Vaccination of these cats is recommended.



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- Sloughing oral ulcer and rhinitis in a cat with FCV infection.

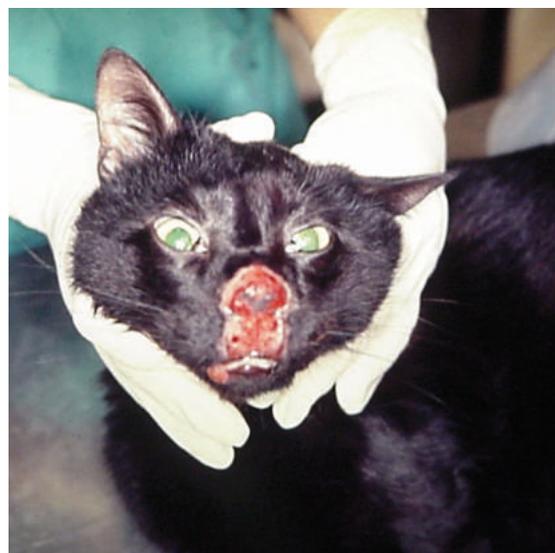


Image courtesy of Albert Lloret, ABCD

- Severe oral and mucocutaneous ulceration in a cat with FCV infection.

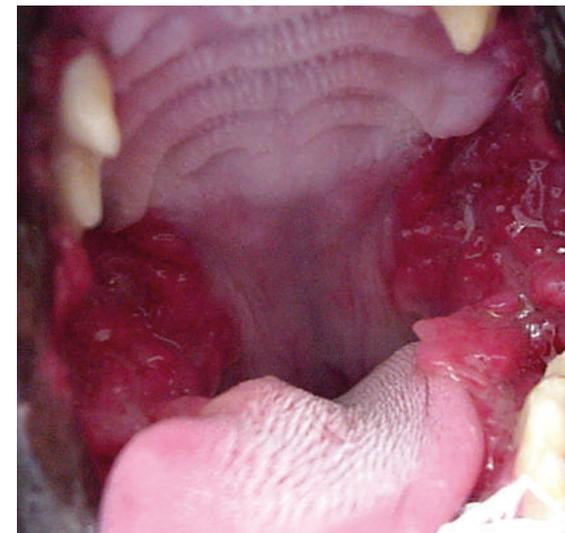


Image courtesy of Albert Lloret, ABCD

- Chronic ulcerative proliferative gingivostomatitis.

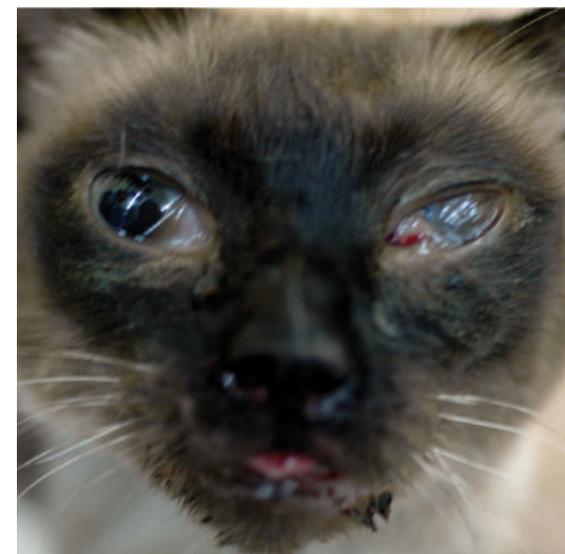


Image courtesy of Albert Lloret, ABCD

- Cat with virulent systemic feline calicivirus disease.