EUROPEAN
ADVISORY BOARD ON CAT DISEASES
ABCD

Poxvirus infections in cats

FACT SHEET

Poxvirus infections in cats

- In cats, *Orthopoxvirus* infections are repeatedly reported, usually caused by cowpox virus.
- Cowpox virus infects a wide range of host species, including humans (zoonosis!).
- Mpox (formerly monkeypox) virus is another *Orthopoxvirus* that also infects a wide range of host species, but it has not yet been reported in cats.

Epidemiology

- Cowpox virus infection occurs predominantly in rodents, which represent a natural reservoir species.
- Cats with rodent contact are at risk of infection. In most cases, affected cats are reported to have been in contact with rodents through hunting.
- Poxviruses are enveloped and rather resistant to various physical effects, but they are highly susceptible to chemical inactivation.

Pathogenesis and clinical signs

- Cowpox virus infection usually starts with head lesions inflicted by a struggling rodent.
- After local replication at the site of infection, the virus causes a generalised infection with viraemic spread.
- Multiple skin lesions occur following viraemia and during grooming, notably on the paws and ears.
- Focal or multifocal crusting dermatitis develops; spontaneous cure occurs in most immunocompetent cats.
- In severe cases, progressive proliferative deep ulcerations develop.
- Pneumonia can occur.
- In kittens and immunosuppressed cats, generalised cowpox virus infection can be fatal.

Diagnosis

- Biopsies from skin lesions or dried scab material (without transport medium) can be submitted for diagnostic testing.
- In cats with pneumonia, the virus can be isolated or detected from bronchoalveolar lavage samples, oropharyngeal swabs, pleural fluid, as well as from fine needle aspirates obtained from the affected lung.
- PCR is the main method used for the detection of cowpox viral DNA and allows additionally subsequent genetic and phylogenetic analyses of the detected virus.
- Other diagnostic methods are:
  - Detection of Cowdry type A inclusion bodies on histopathology
  - Electron microscopy
  - Virus isolation

Disease management & disinfection

- To prevent secondary bacterial infections, it is important to focus on very careful cleaning and treating the ulcerated areas of the skin.
- Broad-spectrum antibiotics might be needed if there is evidence of bacterial infection.
- General supportive therapy should be given.
- The use of corticosteroids must be avoided.
- Solitary superficial lesions usually heal spontaneously within 4 to 5 weeks in otherwise healthy animals.
- The prognosis is poor in kittens, cats undergoing treatment with corticosteroids, cats with systemic immunosuppression, e.g. due to feline immunodeficiency virus infection, and generally if the lungs are affected.
- Poxviruses can persist in the environment for a long time, providing they are not exposed to any chemical treatment.
  - It is recommended to use disinfectants that were tested for efficacy (such as the commercial products listed by the German veterinary medical society DVG or the German association for applied hygiene VAH).
  - Thoroughly clean any surface before applying the disinfectant.

If you found this ABCD information valuable, please tell a colleague. To download the ABCD fact sheets, or the full disease guidelines, please visit our website: www.abcdcatsvets.org
The ABCD is an independent panel of experts in feline health supported by Boehringer Ingelheim (the founding sponsor of the ABCD), Virbac and Idexx. December 2022.

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Vaccination recommendations

- There are no vaccines against cowpox virus infection available for use in animals.

Zoonotic risks

- Cowpox is a zoonosis. Human cases can occur following direct transmission of the virus from cats or pet rats.
- The infection can be fatal in immunosuppressed people.
- Owners of affected cats and pet rats must be made aware of the zoonotic risk.
- When handling cats suspected to be infected with cowpox virus, veterinary staff must observe good infection control (i.e. adopting protective measures such as wearing gloves and observing proper hand hygiene).
- In cases of mpox virus infection, contact between humans and pets should be reduced and human and veterinary medical advice should be sought, respectively.

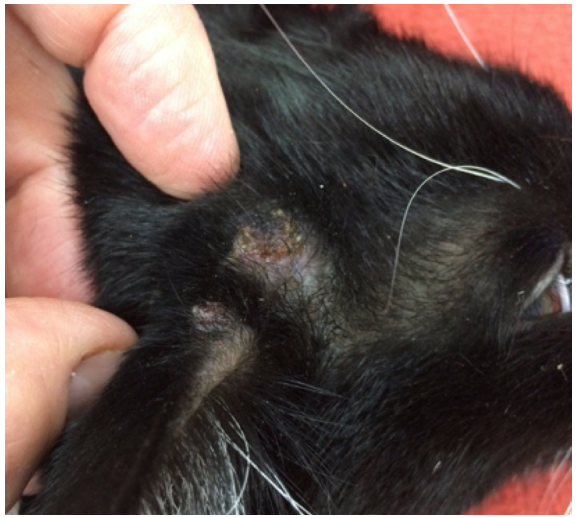

Image courtesy The Feline Centre, University of Bristol (UK).

- *Cowpox virus-induced skin lesions on the head of a cat. Note that gloves should be worn when examining cats with a suspected poxvirus infection.*

Image courtesy Marian Horzinek, ABCD

- *Cowpox virus-induced skin lesions on the ear. Note that gloves should be worn when examining cats with a suspected poxvirus infection.*

Image courtesy Marian Horzinek, ABCD

- *Skin lesions covered by crusts.*

Image CDC

- *Cowpox lesions on a person's arm.*