

Crawshaw, G. (2005). Herpesvirus infection in cheetahs. *Animal Keeper's Forum* 7/8: 290.

Keywords: *Acinonyx jubatus*/captivity/cheetah/disease/herpes virus/veterinary/wild

Abstract: Feline herpesvirus 1 (FHV1) is a very common cause of upper respiratory disease in domestic cats, causing sneezing and discharges from the eyes and nose. In most cases, cats recover spontaneously and completely, although some will develop persistent infection. The virus may also affect the eyes causing opacity and ulceration of the cornea and conjunctiva. More rarely lesions may be seen on the skin. Wild felines are also susceptible to infection and in these the disease may be severe and even fatal. Upper respiratory infection consistent with FHV-1 has been seen in cheetahs in North America but several collections have also experienced a persistent form of the disease affecting the eyes, eyelids and skin.

Herpesvirus Infection in Cheetahs

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Feline herpesvirus 1 (FHV1) is a very common cause of upper respiratory disease in domestic cats, causing sneezing and discharges from the eyes and nose. In most cases, cats recover spontaneously and completely, although some will develop persistent infection. The virus may also affect the eyes causing opacity and ulceration of the cornea and conjunctiva. More rarely lesions may be seen on the skin. Wild felines are also susceptible to infection and in these the disease may be severe and even fatal. Upper respiratory infection consistent with FHV-1 has been seen in cheetahs in North America but several collections have also experienced a persistent form of the disease affecting the eyes, eyelids and skin. The following has been based on the experience of the author and has, in large part, been extracted from the paper by Munson et al (2004).

In many of the affected cheetahs skin lesions were preceded by signs of upper respiratory tract infection either in the animals themselves or in the dams of affected cubs. The skin manifestation of FHV1 infection is unusual, but at least 20 cheetahs in nine zoos have now been confirmed with this condition, and additional animals with similar lesions have been reported. In most cases, the cutaneous lesions first occur as swellings at the inner corner of the eye and on the eyelids that may progress to non-healing ulcers. Lesions may extend across the nose, and have also been seen on the lips, top of the head, distal forelegs, flank, tail, and footpads. Some cheetahs also had corneal ulcers, and one animal had an ulcer on the tongue.

The skin lesions are typically firm plaques with a raised rim and central ulceration. White pus is present in many cases. Over time, these plaques may expand and the skin become thickened. Many affected animals were juveniles or cubs as young as two weeks, but seven animals were subadults or adults ranging from one to six years of age. Infection was probably acquired from the persistently infected dams at, or shortly after, birth. The severity and unremitting nature of the dermatitis resulted in euthanasia of six cheetahs including one chronically affected animal that developed a carcinoma at the site of infection.

The herpesviral-associated dermatitis in cheetahs resembles the ulcerative dermatitis that rarely occurs in FHV1-infected domestic cats. It is not known why this form of the disease appears to be so much more common in cheetahs than in other cat species, but suggests an aberrant immune response to the virus in this species. It has been proposed that cheetahs may be immune-compromised because some of their genes lack heterogeneity. Stress has been linked to persistent FHV1 diseases in other species, including domestic cats. Although stress levels were not measured in the affected animals, captive cheetahs generally show internal changes indicative of chronic stress, and develop other diseases that may be stress-related.

Feline herpesvirus is one of the components in standard cat vaccines although the response and effectiveness of these vaccines is variable even in domestic cats. Vaccination did not prevent the disease or prevent infection being passed onto cheetah cubs. Advanced lesions were only minimally responsive to topical or systemic antiviral drugs. The most effective therapy was complete surgical excision with or without cryosurgery. The current recommendations to treat and prevent the disease are to remove lesions with surgery, quarantine infected animals, and prevent maternal transmission by hand-rearing cubs from infected dams. As a result, some collections prefer to separate cubs from dams at birth and hand-rear them in an attempt to develop herpesvirus-free groups of cheetahs.

Reference

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