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## **FELINE VIRAL DERMATOSES**

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### **1. Papillomavirus Infection**

Seven different feline papillomavirus have been identified and fully sequenced, three of them in domestic cats. The great majority of clinical cases seen in domestic cats are however associated with FdPV2.

The first clinical signs of this infection are the so-called viral plaques. They present usually as multicentric scaly papules or plaques (virtually always less than 8mm in diameter) that may be hyperpigmented, especially in the late stage of the development. These lesions usually develop on the face and/or limbs. Generalization may occur. It is supposed – but not firmly proved- that these viral plaques are the precursory lesions of the so-called Bowenoid in situ carcinomas or BISCs. BISCs look classically like viral plaques but may be larger and more crusty. They are virtually always hyperpigmented. The clinical diagnosis is not always obvious and histopathological examination is mandatory to confirm the diagnosis. The viral etiology may be confirmed via PCR or immunohistochemistry even though the histological changes are usually very suggestive of a virus-induced condition. No large studies on the treatment of these lesions have been conducted but numerous anecdotal reports support the use of imiquimod for the treatment of this condition. Improvement usually occurs within three to four weeks but recurrences are often observed after treatment discontinuation.

Typical warts and cutaneous horns have also been described in association with PV infections in cats but are probably very rare.

As well, a counterpart of equine sarcoid is also uncommonly observed in cats. These sarcoids are usually nodular, occur mainly on the face and are, like the equine ones, caused by bovine papillomaviruses. It is important to understand that these sarcoids result from an infection of dermal fibroblasts and not from epidermal keratinocytes like classical PV-infections.

### **2. Cowpoxvirus Infection**

Feline cowpox infection is an uncommon condition of outdoor cats. In some specific areas, the condition may be more frequent. Almost all cases have been described in animals in contact with rodents and/or cattle. The primary lesion is usually a small, solitary „pock“ lesions occurring on the face or on the limbs. This early stage is usually associated with fever and anorexia. Within a few days to weeks, affected cats develop more widespread lesions, presenting as nodules, erosions, abscesses or sometimes cellulitis. During this generalization stage of the disease, some other organs, especially the lungs in immunosuppressed animals, may be affected, leading to life-threatening pneumonia. The diagnosis is usually made with histological examination demonstrating the typical epidermal hyperplasia and intracytoplasmic pink inclusions. The affected individuals do not need any specific treatment and any use of immunosuppressive drugs should be avoided. This point is important because some affected patients may look like allergic cats.

### **3. Feline Herpesvirus-1-Infection**

FHV-1 Infection is usually associated in cats with conjunctivitis, rhinitis and /or stomatitis. The active stage of the infection is followed by a latent phase, where the virus persists in the trigeminal nerve, especially. The reactivation of the infection may result, in some rare cases, in skin signs, associated or not with the more classical ones. Herpes dermatitis affects almost exclusively the face and is characterized by erosions, crusts, ulcerations. Interestingly, the first lesions occur often between the eye external canthus and the nose or lip area. At this stage, the lesions may be unilateral. Generalization often occurs within a few days. These lesions may be strongly pruritic and may mimic those of the so-called head and neck pruritus.

For this reason, one of the most important differential diagnoses of this condition is the allergic dermatitis. This is to keep in mind because drugs like glucocorticoids may be contraindicated in HV1 infected cats.

The diagnosis of this condition is not easy and is based on the exclusion of resembling diseases, the examination of histological section and PCR. Histology may be easy to interpret, especially when typical intranuclear inclusions are seen but may also be misleading when only necrotizing eosinophilic dermatitis is present. In this case, one more time, the main differential diagnosis is hypersensitivity. The use of PCR should also be cautious. In fact, negative PCR almost ruled out herpesvirus infection. On the other hand, positive PCR may be due to true skin infection or to contamination by infected mucosa through licking, for example.

The treatment is based on the combination use of Famcyclovir and L-Lysine. Some other antiviral drugs have been used but data are less convincing.

### **4. Calicivirus-Infection**

This viral infection is also often associated with conjunctivitis and stomatitis and rarely with skin changes. It should however be kept in mind that calicivirus are RNA viruses and that mutations may occur quickly. That is probably the reason why some less classical syndromes associated with this virus have been described in the last few years. One of these involved only the skin and affects the face and the feet. Affected animals usually present with fever, swollen feet and erosive changes on the face, especially the nose. This episode lasts usually a few days and is followed by a spontaneous resolution of the clinical signs.

### **5. FeLV-Infection**

Some classical FeLV-infections may lead to skin changes. In this case, the changes may be seborrheic or ulcerative. The diagnosis is made using histology showing typical giant keratinocytes and positive immunohistochemistry. Some cutaneous horns have also been seen in FeLV-patients even though causality has not been proved.

### **6. FIV-Infection**

This lentivirus does not induce specific skin changes but leads to severe immunodeficiency, which, in turn, may favor the development of opportunistic microbes such as staphylococci, mycobacteria, dermatophytes, Malassezia or Demodex.

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