

# the ITCH

## Dermatology Team

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Figure 1.

## Feline herpesvirus-related facial dermatitis

Feline herpesvirus -1 (FHV-1) is responsible for causing upper respiratory disease characterized by rhinotracheitis, conjunctivitis and, occasionally, oral ulceration most commonly affecting young cats. In cats having recovered from an acute or subacute infection, the virus may establish latency in the trigeminal ganglion. Viral reactivation and replication occurs when cats are exposed to stressful conditions, such as overcrowding, change of environment, parturition, unrelated diseases or treatment with immunosuppressive therapy. When viral reactivation occurs, cats may develop an erosive/ulcerative and necrotizing ( $\pm$  pruritic) dermatitis primarily affecting the face and nose. When upper respiratory signs (e.g., lethargy, pyrexia, inappetance, sneezing, ocular-nasal discharge) precede or are concurrent with typical cutaneous lesions, a herpesviral infection is



Figure 2.

## Submitting Skin Biopsies

- Always submit a complete signalment and brief summary of the patient's history, description and distribution of the clinical lesions and the sites from which the biopsies were taken.
- Submission of digital or printed images of patient's lesions is very helpful for the pathologists for correlation with the histological findings.
- Give your clinical impressions, working clinical diagnosis, and differentials.
- Don't hesitate to call your pathologist if you have any questions about submission or if the pathology interpretation of histological findings does not correlate with your clinical impression.
- Always collect biopsies from "early" to "fully developed" lesions. Fully developed lesions are best. Chronic lesions are much less diagnostic.
- Submit multiple biopsies (at least 3) representative of the clinical lesions, unless you are collecting a biopsy from a solitary or localized lesion. In general, collection of biopsies from normal skin is not needed.
- Punch biopsies should be immediately immersed in 10% buffered formalin after collection. When collecting elliptical biopsies, the subcutaneous side should be placed on a cardboard or tongue depressor to avoid curling up of the specimens.
- Avoid placing punch biopsies inside a histology cassette, unless punch biopsies are very small. If using a cassette, never use sponges within the cassette, as these compress the specimens and make them difficult to evaluate histologically.

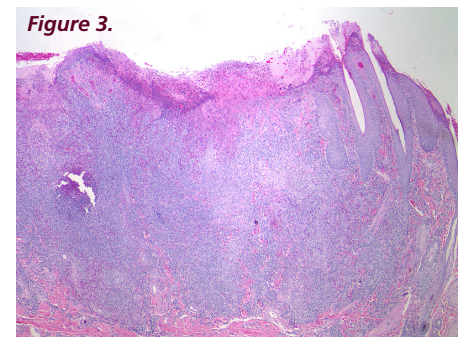


Figure 3.

likely to be considered. However, the diagnosis can be more challenging in cats without a history of upper respiratory problems.

The clinical lesions are characterized by large erosions/ulcers covered with thick crusts most commonly affecting the nose and face (Figures 1 and 2), and infrequently the ventrum, paw pads, ears, and oral cavity. Similarly, a papulocrustous dermatitis of the face mimicking allergic skin disease may be seen. Crust removal reveals underlying necrotic and hemorrhagic skin. When the nasal planum is affected, depigmentation is often present. Recently, ulcerative lesions in the flank of two cats have also been described. Conjunctivitis or keratitis may be present when infection is not limited to the skin and respiratory mucosa. All clinical lesions can persist for several weeks or months when left untreated.

When cats present with facial or nasal lesions, FHV-1 should be considered as a possible etiology.



## Did you know?

- The VMTH has two dermatopathologists who are Diplomates of the American College of Veterinary Pathologists, Dr. Joanne Mansell and Dr. Aline Rodrigues, who work closely with dermatologists, Dr. Adam Patterson and Dr. Alison Diesel in the diagnosis of your pet's skin disease at Texas A&M's Veterinary Medical Teaching Hospital.
- Dr. Mansell and Dr. Rodrigues Hoffmann also run the Dermatopathology Specialty Service, a mail-in service for any veterinary practitioners or dermatologists. They offer specialized evaluation of your skin biopsies from clinics all over the US.
- Details, downloadable submission forms, and submission instructions for the Dermatopathology Specialty Service can be found at <http://vetmed.tamu.edu/vtpbl/professional-services/dermatopathology>.



Since other feline skin conditions, including feline eosinophilic granuloma, feline allergic dermatitis, mosquito-bite hypersensitivity, actinic keratosis and squamous cell carcinoma, can have a similar clinical appearance, they would have to be considered in the differential list for erosive/ulcerative facial lesions.

Identifying the specific cause responsible for the erosive/ulcerative facial lesions in cats is very important, since treatment for some of these conditions (e.g. glucocorticoid therapy for allergic skin disease) may exacerbate herpesvirus-related clinical signs. Collection and submission of skin biopsies for histological evaluation is required in order to confirm or exclude these diagnoses. Punch biopsies should be collected from areas that include intact epidermis or areas between ulcerated and intact areas.

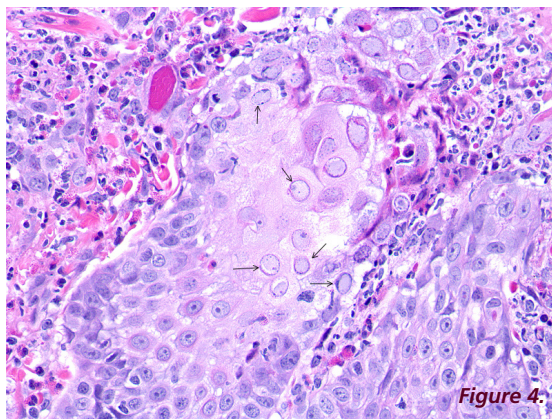



Figure 4.

Histologically, FHV-1 facial ulcerative dermatitis, allergic skin disease, eosinophilic granulomas and mosquito bite hypersensitivity are primarily composed of large numbers of eosinophils with extensive areas of ulcerated epidermis (Figure 3), which can make histological differentiation between these conditions a challenge. However, cats with FHV-1 infection have amphophilic or “glassy” intranuclear inclusion bodies observed in the epidermis, adnexal epithelium and/or sebaceous glands (Figure 4, see arrows). Since these inclusion bodies can be rare, meticulous examination of skin biopsies from areas adjacent to ulcerated regions is critical. When inclusion bodies are not observed, it is important for the dermatopathologist to evaluate additional deeper sections from the submitted biopsies. If no inclusion bodies are observed in highly suspicious cases, immunohistochemistry for FHV-1 may help confirm the diagnosis. PCR for FHV-1 can also be performed; however, it is not considered the test of choice due to a large number of falsely positive cats, especially in previously vaccinated cats or those who have been previously infected with FHV-1.

Therapy is aimed at stopping viral replication and may include lysine, antivirals (e.g., famciclovir), and immunomodulatory treatment (e.g., topical imiquimod). If present, secondary bacterial infections (cutaneous and/or respiratory) are treated with systemic antibiotherapy. In the future, the extent and severity of early relapsing lesions might be mitigated with topical docosanol (Abreva). Most animals recover within a few weeks, but due to viral latency, recurrence of lesions can occur with stress or immunosuppression. 

## Should I use a dermatopathologist for my skin biopsies?

There are many excellent pathologists in diagnostic pathology, and the question often comes up as to whether you should use a dermatopathologist or a general pathologist for your skin biopsies. There are several factors to consider.

Dermatopathologists are pathologists with specialized knowledge and skills in the histopathology of skin diseases and these pathologists are likely your best bet for getting the most out of your skin biopsies. There are at least 300 diseases that can be recognized histologically in the skin making it a complicated and time consuming organ for the pathologist to examine, and therefore it is important to use a pathologist who has a major interest in skin and has the time to spend evaluating skin biopsies, even if they are not a designated dermatopathologist. Practitioners should recognize that there are often secondary processes present in skin diseases, particularly secondary pyodermas, and so evaluating skin biopsies can be complex.

If you are not sure if your lab has a dermatopathologist or pathologist with an interest in skin on staff, call the lab and ask. Another factor to consider is that fast turn-around labs sometimes use short-cycle tissue processing machines that are not ideal for processing skin, so if you use one of these labs call and see if your biopsies can be put on a regular cycle tissue processor.

Lastly, communication between the practitioner and the pathologist is very important, so choose a pathologist who you are comfortable calling to discuss your case, and who will return your phone calls. 