

# LONG GREEN ANIMAL DERMATOLOGY CENTER



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## Manifestations of Feline Allergy

### Objectives:

- Review the clinical reaction patterns associated with allergic dermatologic diseases in the feline patient
- Present an organized approach to diagnosis of allergic disease in the cat
- Review therapeutic options

### Key Points for cat owners:

- Infectious and parasitic causes must be ruled out before proceeding with an allergy work-up
- A methodical organized approach to diagnostics will provide a more satisfactory result than randomly trying different therapies

**Feline Reaction Patterns:** Cats have unique and very typical appearances to skin diseases which separate them from other animal species. These can be the result of allergic disease, but may not be so it is important to rule out infectious and parasitic causes prior to pursuing an allergy work-up.

- **Self-inflicted alopecia**
- **Miliary dermatitis**
- **Eosinophilic granuloma complex**
- **Head and neck pruritus**

### Self-inflicted alopecia

A common and frustrating presentation of the feline is hair loss as a result of overgrooming. A cat owner may not report the cat to be licking or grooming excessively as cats can be very secretive. Additional important history taking which may indicate the

cat is overgrooming is the vomiting of hairballs, hair in the feces, or large tufts of hair in the environment. When self-inflicted alopecia is suspected but not evident to the owner, it can be proven by the veterinary dermatologist in two ways:

1. Trichogram
2. The E-collar test

When it is clear the cat's alopecia is self-created, the next question is whether the origin of the pathology is pruritus (itch) or psychogenic (behavioral). In general, the ruling out of pruritic causes should be performed prior to empirical use of behavior modifying psychopharmacologic drugs. Among the numerous causes of self-inflicted hair loss are: Flea allergy, mites (*Demodex* species, *Cheyletiella*, *Otodectes*, *Notoedres* etc.) dermatophytic fungus (ringworm), food allergy, and atopy and psychogenic. First – line diagnostics we typically recommend include: Woods lamp, KOH prep, DTM culture, combing, skin scrapes (deep and superficial), fecal exam, and flea control rule out. Second-line diagnostics include lime sulfur dips to rule out *Demodex gatoi* followed by food allergy and atopy work-ups. Treatments for this reaction pattern is based on the underlying cause.

### **Miliary dermatitis**

Feline military dermatitis is a commonly seen multifactorial reaction pattern consisting of papules (small red bumps) surmounted by crusts. the amount of itching is variable and often does not correlate with the severity of the dermatitis. The lesions can be multifocal or widespread and are often noted on the back, belly or neck region. Other reaction patterns may be seen concurrently including self-inflicted alopecia and eosinophilic plaques and ulcers. Flea allergy is by far the #1 cause of military dermatitis but other causes include: mites (demodicosis, cheyletiellosis, otodectic acariasis, trombiculiasis etc.), dermatophytosis (ringworm), bacteria and yeast dermatitis, food allergy, and atopy. More unusual causes include drug eruptions and feline hypereosinophilic syndrome. First-line diagnostics include: Woods lamp, KOH prep, DTM culture, skin scrapes, combing, fecal exam and flea control rule out. Second line diagnostics include lime sulfur dips, and food allergy and atopy work-ups. Treatment is based on underlying cause.

### **Eosinophilic Granuloma Complex**

Cats respond to a variety of antigenic stimuli with infiltration of a particular cell of the body known as an eosinophil. Though the eosinophil is typically associated with parasitic or environmental antigenic exposure, it can be associated with other causes. There are four recognized clinical lesion types within the eosinophilic granuloma complex: eosinophilic plaques, indolent ulcers, granulomas, and mosquito-bite hypersensitivity syndrome.

**Eosinophilic plaques:** The characteristic lesions consist of hairless, swollen or eroded, bright pink to salmon colored elevated lesions. The lesions

often occur on the belly and the inner thigh. Initially the lesions may appear as mild, variably itchy and red, but as they progress, they become thickened, elevated, eroded and markedly itchy.

**Indolent ulcers:** Also known as “rodent ulcers” or eosinophilic ulcers, this common, clinically distinctive subtype within the complex is typically located on the mucocutaneous junction of the upper lip, opposite the canine teeth. The lesions are non-exudative, well-circumscribed ulcerated plaques that are neither painful or pruritic. These ulcers can progressively enlarge, becoming disfiguring as they cross the midline of the lip.

**Eosinophilic granulomas:** These lesions appear most commonly as an eroded or ulcerated plaque or nodule. They can occur anywhere in the mouth and as a linear form on the back of the thighs over the popliteal fossa. They may appear as non-ulcerated swelling on the chin, lower lip, nose or around the footpads (“fat lip”, “fat nose”, “fat chin” syndromes).

**Mosquito-bite hypersensitivity:** A distinct form within the complex, it is popularly referred to as “ears, nose and toes syndrome.” The most commonly affected site is the nose, with poorly defined swelling or erosions and crusting; but the poorly haired areas of the ear tips (pinnae) and foot pads may have papules and plaques associated with erosion, crusting and loss of pigment as well. The prognosis is guarded if the cat cannot be brought inside to avoid the mosquitoes. Alternative treatment choices are steroids and cyclosporine.

Biopsy for histopathology may be necessary as other disorders that can mimic eosinophilic granulomas include: Cancers (squamous cell carcinoma, mast cell tumor, Bowen’s disease etc.), Herpes virus, and bacterial and fungal granulomas. The clinical entities of the eosinophilic granuloma complex are most commonly associated with an allergic etiology, however a diagnostic approach is similar to other reaction patterns. Infectious and parasitic etiologies should be ruled out initially and 100% flea control instituted before moving on to food allergy and atopy work-ups. As with the other reaction patterns, treatment aimed at the underlying etiology is preferred to indefinite symptomatic therapy.

### **Head and Neck Pruritus**

This extremely pruritic reaction pattern can be very frustrating for the small animal practitioner and cat owner as the level of itching often results in a significant amount of self-trauma and tends to be less steroid-responsive than the other reaction patterns. Self-excoriation can result in extensive ulceration with secondary infection. The most likely causes include: Various mites, food allergy, flea allergy, atopy, dermatophytosis, and other ear disease. Initial diagnostics include: ear examination, skin scrapes, Woods lamp, DTM culture, combing and flea control rule-out. Food allergy is

much more likely with head and neck pruritus cases than it is in the other reaction patterns; so earlier institution of a hypoallergenic dietary trial may be considered. However, a lime sulfur trial to rule out *Demodex gato* is often preferred prior to allergy work-up. This is a mite that inhabits the surface layer of the skin but may not be seen in a routine skin scrape. These cases can be so severe and the cat's owner so desperate for relief for their pet that definitive diagnosis may be difficult due to the need to move quickly with diagnostics and therapy. Glucocorticoid (steroid) administration and E-collar may be needed initially in attempting to stop the self-trauma.

### **Diagnostic approach to the feline reaction patterns**

The basic list of possible causes for the majority of itchy cat skin diseases is the same with some variation in the prioritization of the list from pattern to pattern. Ultimately as previously discussed, ruling out infectious and parasitic causes before moving to allergy work-up is the best way to proceed.

### **100% flea control**

The demonstration of adult fleas and/or flea dirt with combing is very helpful, but the flea allergic cat may have little or no direct evidence of fleas. This is because hypersensitive patients may require only a few bites to incite the reaction, and the excessive grooming and scratching of the itchy cat may effectively remove the fleas. Recent bathing may also have removed the evidence. Therefore response to a trial of excellent flea control is commonly used by the veterinary dermatologist to diagnose flea allergy. Regular monitoring with a flea comb by the clients at home is recommended.

### **Hypoallergenic food trials**

Intradermal skin testing and in-vitro (blood) testing have not proven helpful in the diagnosis of food allergy. A food elimination diet trial is currently the only way to diagnose food allergy. As in the dog or horse, a diet composed of ingredients the patient has never ingested must be given for a minimum of 8 weeks. If response is noted, a challenge at the end of the trial period is used to confirm the diagnosis. Food trials can be more difficult in cats because of their often finicky eating habits. An important thing to note is the impossibility of performing a food trial in a cat that has access to the outdoors.

### **Testing for atopy**

Intradermal skin testing for atopy is preferred by veterinary dermatologists. The use of blood tests for atopy is possible (Heska test). The goal is the formulation of allergen specific immunotherapy. The information can also be used for avoidance of the significant allergens reported (i.e house dust mite avoidance and environmental control).

## **Feline Antipruritic Therapeutics Update**

### **Glucocorticoids (GCS)**

Although cats tend to tolerate steroids better than dogs and people, adverse effects due occur including: obesity, diabetes mellitus, alopecia, skin fragility, aggravation of heart failure, behavioral alterations and predisposition to infection. Therefore diagnosis and therapy of underlying causes is highly preferred to reliance steroid use in the itchy feline patient.

### **Anitihistamines**

The use of antihistamines has been reported anecdotally to be more effective in the cat than the dog, but no controlled trials have demonstrated this. As with the dog or horse, the efficacy of antihistamines is unpredictable, and different ones may need to be tried before finding one that works. A 7-21 day trial period is recommended.

### **Fatty Acids**

Anecdotally there have been reports of better efficacy of fatty acid therapy in the cat than the dog, but no well-controlled trials have been performed. The goal is the incorporation of certain FAs into cells in the hopes of producing less inflammatory chemicals in the allergic patient.

### **Behavior-Modifying Drugs- Psychotropic agents**

The use of psychotropic drugs like amitriptyline (Elavil), fluoxetine (Prozac), or paroxetine (Paxil) may be indicated in cats in which a behavioral disorder has been confirmed. It is important to rule out other causes of disease before leaping to use these drugs.

### **Cyclosporine**

Cyclosporine (Atopica, Neoral) binds to specific intracellular receptors in T-lymphocytes and has been investigated for treating a number of skin diseases in veterinary dermatology. Though not labeled for use in the cat, it appears to be tolerated well by the feline patient at a dose of 25 mg/cat once a day. Good response has been noted in eosinophilic plaques and granulomas, and atopic dermatitis. Ideally the drug should be given on an empty stomach (1hr before or 2 hrs after a meal). The most common adverse effect is nausea and loss of appetite.